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```

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/*

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```

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<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

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7zXZF!t/o."w[7gp<G

H:Oed 18uyMQ9|FO6

87I8.mhGl^eb\_X/UQKuB

```
)Cdk!B_M\|tw|11np#_(~*uM%S61opMG`YfRXvY[R+t[ BS=)d
;*!;_>KfBqxY(F|0.Ve%S61opMG`YfRXvY[R+t[ BS=)d
;*!;_>KfBqxYm+sS|11np#_(~*uM%S61opMG`YfRXvY[R+t[ BS=)d
;*!;_>KfBqxY(F|0.Ve%S61opMG`YfRXvY[R+t[ BS=)d;*!;_>KfBqxY(F|0.Ve%Q?
*sS|11np#_(~*u7gi}[IgiYZ
```

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## 1.3 tftp-hpa 5.2

### 1.3.1 Available under license :

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/\*

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\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.  
\*/

Found in path(s):

\* /opt/cola/permits/1108298343\_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/tftp/tftp.c  
\* /opt/cola/permits/1108298343\_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/common/tftpsubs.c  
\* /opt/cola/permits/1108298343\_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/tftp/main.c

No license file was found, but licenses were detected in source scan.

```
/* *_ c *_ ----- *  
*  
* Copyright 2001-2006 H. Peter Anvin - All Rights Reserved  
*  
* This program is free software available under the same license  
* as the "OpenBSD" operating system, distributed at  
* http://www.openbsd.org/.  
*  
* ----- */
```

Found in path(s):

\* /opt/cola/permits/1108298343\_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/config.h

No license file was found, but licenses were detected in source scan.

```
/* ----- *  
*  
* Copyright 2001-2007 H. Peter Anvin - All Rights Reserved  
*  
* This program is free software available under the same license  
* as the "OpenBSD" operating system, distributed at  
* http://www.openbsd.org/.  
*  
* ----- */
```

Found in path(s):

\* /opt/cola/permits/1108298343\_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/tftpd/remap.h  
\* /opt/cola/permits/1108298343\_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/tftpd/misc.c  
\* /opt/cola/permits/1108298343\_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/tftpd/remap.c

No license file was found, but licenses were detected in source scan.

Summary: The client for the Trivial File Transfer Protocol (TFTP).

Name: tftp

Version: @@VERSION@@

Release: 1

License: BSD

Group: Applications/Internet

Source0: <http://www.kernel.org/pub/software/network/tftp/tftp-hpa-%{version}.tar.gz>

BuildRequires: tcp\_wrappers-devel

BuildRoot: %{\_tmppath}/%{name}-root

%description

The Trivial File Transfer Protocol (TFTP) is normally used only for booting diskless workstations. The tftp package provides the user interface for TFTP, which allows users to transfer files to and from a remote machine. This program and TFTP provide very little security, and should not be enabled unless it is expressly needed.

%package server

Group: System Environment/Daemons

Summary: The server for the Trivial File Transfer Protocol (TFTP).

Requires: xinetd

%description server

The Trivial File Transfer Protocol (TFTP) is normally used only for booting diskless workstations. The tftp-server package provides the server for TFTP, which allows users to transfer files to and from a remote machine. TFTP provides very little security, and should not be enabled unless it is expressly needed. The TFTP server is run from /etc/xinetd.d/tftp, and is disabled by default on Red Hat Linux systems.

%prep

%setup -q -n tftp-hpa-%{version}

%build

%configure

make %{?\_smp\_mflags}

%install

rm -rf \${RPM\_BUILD\_ROOT}

mkdir -p \${RPM\_BUILD\_ROOT}%{\_bindir}

mkdir -p \${RPM\_BUILD\_ROOT}%{\_mandir}/man{1,8}

mkdir -p \${RPM\_BUILD\_ROOT}%{\_sbindir}

make INSTALLROOT=\${RPM\_BUILD\_ROOT} \

SBINDIR=%{\_sbindir} MANDIR=%{\_mandir} \

```

install
install -m755 -d ${RPM_BUILD_ROOT}%{_sysconfdir}/xinetd.d/ ${RPM_BUILD_ROOT}/tftpboot
install -m644 tftp-xinetd ${RPM_BUILD_ROOT}%{_sysconfdir}/xinetd.d/tftp

%post server
/sbin/service xinetd reload > /dev/null 2>&1 || :

%postun server
if [ $1 = 0 ]; then
    /sbin/service xinetd reload > /dev/null 2>&1 || :
fi

%clean
rm -rf ${RPM_BUILD_ROOT}

%files
%defattr(-,root,root)
%{_bindir}/tftp
%{_mandir}/man1/*

%files server
%defattr(-,root,root)
%config(noreplace) %{_sysconfdir}/xinetd.d/tftp
%dir /tftpboot
%{_sbindir}/in.tftpd
%{_mandir}/man8/*

%changelog
* Tue Sep 14 2004 H. Peter Anvin <hpa@zytor.com>
- removed completely broken "Malta" patch.
- integrated into build machinery so rpm -ta works.

* Fri Feb 13 2004 Elliot Lee <sopwith@redhat.com>
- rebuilt

* Wed Jun 04 2003 Elliot Lee <sopwith@redhat.com>
- rebuilt

* Fri Apr 11 2003 Elliot Lee <sopwith@redhat.com>
- 0.33
- Add /tftpboot directory (#88204)

* Mon Feb 24 2003 Elliot Lee <sopwith@redhat.com>
- rebuilt

* Sun Feb 23 2003 Tim Powers <timp@redhat.com>
- add BuildPreReq on tcp_wrappers

```

- \* Wed Jan 22 2003 Tim Powers <timp@redhat.com>
  - rebuilt
  
- \* Mon Nov 11 2002 Elliot Lee <sopwith@redhat.com> 0.32-1
  - Update to 0.32
  
- \* Wed Oct 23 2002 Elliot Lee <sopwith@redhat.com> 0.30-1
  - Fix #55789
  - Update to 0.30
  
- \* Thu Jun 27 2002 Elliot Lee <sopwith@redhat.com>
  - Try applying HJ's patch from #65476
  
- \* Fri Jun 21 2002 Tim Powers <timp@redhat.com>
  - automated rebuild
  
- \* Mon Jun 17 2002 Elliot Lee <sopwith@redhat.com>
  - Update to 0.29
  
- \* Thu May 23 2002 Tim Powers <timp@redhat.com>
  - automated rebuild
  
- \* Wed Jan 09 2002 Tim Powers <timp@redhat.com>
  - automated rebuild
  
- \* Tue Dec 18 2001 Elliot Lee <sopwith@redhat.com> 0.17-15
  - Add patch4: netkit-tftp-0.17-defaultport.patch for bug #57562
  - Update to tftp-hpa-0.28 (bug #56131)
  - Remove include/arpa/tftp.h to fix #57259
  - Add resource limits in tftp-xinetd (#56722)
  
- \* Sun Jun 24 2001 Elliot Lee <sopwith@redhat.com>
  - Bump release + rebuild.
  
- \* Tue Jun 12 2001 Helge Deller <hdeller@redhat.de> (0.17-13)
  - updated tftp-hpa source to tftp-hpa-0.17
  - tweaked specfile with different defines for tftp-netkit and tftp-hpa version
  - use hpa's tftpd.8 man page instead of the netkits one
  
- \* Mon May 07 2001 Helge Deller <hdeller@redhat.de>
  - rebuilt in 7.1.x
  
- \* Wed Apr 18 2001 Helge Deller <hdeller@redhat.de>
  - fix tftp client's put problems (#29529)
  - update to tftp-hpa-0.16
  
- \* Wed Apr 4 2001 Jakub Jelinek <jakub@redhat.com>
  - don't let configure to guess compiler, it can pick up egcs

- \* Thu Feb 08 2001 Helge Deller <hdeller@redhat.de>
  - changed "wait" in xinetd file to "yes" (hpa-tftpd forks and exits) (#26467)
  - fixed hpa-tftpd to handle files greater than 32MB (#23725)
  - added "-l" flag to hpa-tftpd for file-logging (#26467)
  - added description for "-l" to the man-page
  
- \* Thu Feb 08 2001 Helge Deller <hdeller@redhat.de>
  - updated tftp client to 0.17 stable (#19640),
  - drop dependency on xinetd for tftp client (#25051),
  
- \* Wed Jan 17 2001 Jeff Johnson <jbj@redhat.com>
  - xinetd shouldn't wait on tftp (which forks) (#23923).
  
- \* Sat Jan 6 2001 Jeff Johnson <jbj@redhat.com>
  - fix to permit tftp put's (#18128).
  - startup as root with chroot to /tftpboot with early reversion to nobody is preferable to starting as nobody w/o ability to chroot.
  - %%post is needed by server, not client. Add %%postun for erasure as well.
  
- \* Wed Aug 23 2000 Nalin Dahyabhai <nalin@redhat.com>
  - default to being disabled
  
- \* Thu Aug 17 2000 Jeff Johnson <jbj@redhat.com>
  - correct group.
  
- \* Tue Jul 25 2000 Nalin Dahyabhai <nalin@redhat.com>
  - change user from root to nobody
  
- \* Sat Jul 22 2000 Jeff Johnson <jbj@redhat.com>
  - update to tftp-hpa-0.14 (#14003).
  - add server\_args (#14003).
  - remove -D\_BSD\_SOURCE (#14003).
  
- \* Fri Jul 21 2000 Nalin Dahyabhai <nalin@redhat.com>
  - cook up an xinetd config file for tftpd
  
- \* Wed Jul 12 2000 Prospector <bugzilla@redhat.com>
  - automatic rebuild
  
- \* Sun Jun 18 2000 Jeff Johnson <jbj@redhat.com>
  - FHS packaging.
  - update to 0.17.
  
- \* Fri May 5 2000 Matt Wilson <msw@redhat.com>
  - use \_BSD\_SOURCE for hpa's tftpd so we get BSD signal semantics.
  
- \* Fri Feb 11 2000 Bill Nottingham <notting@redhat.com>

- fix description

\* Wed Feb 9 2000 Jeff Johnson <jbj@redhat.com>

- compress man pages (again).

\* Wed Feb 02 2000 Cristian Gafton <gafton@redhat.com>

- man pages are compressed

- fix description and summary

\* Tue Jan 4 2000 Bill Nottingham <notting@redhat.com>

- split client and server

\* Tue Dec 21 1999 Jeff Johnson <jbj@redhat.com>

- update to 0.16.

\* Sat Aug 28 1999 Jeff Johnson <jbj@redhat.com>

- update to 0.15.

\* Wed Apr 7 1999 Jeff Johnson <jbj@redhat.com>

- tftpd should truncate file when overwriting (#412)

\* Sun Mar 21 1999 Cristian Gafton <gafton@redhat.com>

- auto rebuild in the new build environment (release 22)

\* Mon Mar 15 1999 Jeff Johnson <jbj@redhat.com>

- compile for 6.0.

\* Fri Aug 7 1998 Jeff Johnson <jbj@redhat.com>

- build root

\* Mon Apr 27 1998 Prospector System <bugs@redhat.com>

- translations modified for de, fr, tr

\* Mon Sep 22 1997 Erik Troan <ewt@redhat.com>

- added check for getpwnam() failure

\* Tue Jul 15 1997 Erik Troan <ewt@redhat.com>

- initial build

Found in path(s):

\* /opt/cola/permits/1108298343\_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/tftp.spec.in

No license file was found, but licenses were detected in source scan.

Summary: The client for the Trivial File Transfer Protocol (TFTP).

Name: tftp

Version: 5.2

Release: 1

License: BSD

Group: Applications/Internet

Source0: <http://www.kernel.org/pub/software/network/tftp/tftp-hpa-%{version}.tar.gz>

BuildRequires: tcp\_wrappers-devel

BuildRoot: %{\_tmppath}/%{name}-root

%description

The Trivial File Transfer Protocol (TFTP) is normally used only for booting diskless workstations. The tftp package provides the user interface for TFTP, which allows users to transfer files to and from a remote machine. This program and TFTP provide very little security, and should not be enabled unless it is expressly needed.

%package server

Group: System Environment/Daemons

Summary: The server for the Trivial File Transfer Protocol (TFTP).

Requires: xinetd

%description server

The Trivial File Transfer Protocol (TFTP) is normally used only for booting diskless workstations. The tftp-server package provides the server for TFTP, which allows users to transfer files to and from a remote machine. TFTP provides very little security, and should not be enabled unless it is expressly needed. The TFTP server is run from /etc/xinetd.d/tftp, and is disabled by default on Red Hat Linux systems.

%prep

%setup -q -n tftp-hpa-%{version}

%build

%configure

make %{?\_smp\_mflags}

%install

rm -rf \${RPM\_BUILD\_ROOT}

mkdir -p \${RPM\_BUILD\_ROOT}%{\_bindir}

mkdir -p \${RPM\_BUILD\_ROOT}%{\_mandir}/man{1,8}

mkdir -p \${RPM\_BUILD\_ROOT}%{\_sbindir}

make INSTALLROOT=\${RPM\_BUILD\_ROOT} \

SBINDIR=%{\_sbindir} MANDIR=%{\_mandir} \

install

install -m755 -d \${RPM\_BUILD\_ROOT}%{\_sysconfdir}/xinetd.d/ \${RPM\_BUILD\_ROOT}/tftpboot

install -m644 tftp-xinetd \${RPM\_BUILD\_ROOT}%{\_sysconfdir}/xinetd.d/tftp

%post server

/sbin/service xinetd reload > /dev/null 2>&1 || :

```

%postun server
if [ $1 = 0 ]; then
    /sbin/service xinetd reload > /dev/null 2>&1 || :
fi

%clean
rm -rf ${RPM_BUILD_ROOT}

%files
%defattr(-,root,root)
%{_bindir}/tftp
%{_mandir}/man1/*

%files server
%defattr(-,root,root)
%config(noreplace) % {_sysconfdir}/xinetd.d/tftp
%dir /tftpboot
%{_sbindir}/in.tftpd
%{_mandir}/man8/*

%changelog
* Tue Sep 14 2004 H. Peter Anvin <hpa@zytor.com>
- removed completely broken "Malta" patch.
- integrated into build machinery so rpm -ta works.

* Fri Feb 13 2004 Elliot Lee <sopwith@redhat.com>
- rebuilt

* Wed Jun 04 2003 Elliot Lee <sopwith@redhat.com>
- rebuilt

* Fri Apr 11 2003 Elliot Lee <sopwith@redhat.com>
- 0.33
- Add /tftpboot directory (#88204)

* Mon Feb 24 2003 Elliot Lee <sopwith@redhat.com>
- rebuilt

* Sun Feb 23 2003 Tim Powers <timp@redhat.com>
- add BuildPreReq on tcp_wrappers

* Wed Jan 22 2003 Tim Powers <timp@redhat.com>
- rebuilt

* Mon Nov 11 2002 Elliot Lee <sopwith@redhat.com> 0.32-1
- Update to 0.32

* Wed Oct 23 2002 Elliot Lee <sopwith@redhat.com> 0.30-1

```

- Fix #55789
- Update to 0.30
  
- \* Thu Jun 27 2002 Elliot Lee <sopwith@redhat.com>
- Try applying HJ's patch from #65476
  
- \* Fri Jun 21 2002 Tim Powers <timp@redhat.com>
- automated rebuild
  
- \* Mon Jun 17 2002 Elliot Lee <sopwith@redhat.com>
- Update to 0.29
  
- \* Thu May 23 2002 Tim Powers <timp@redhat.com>
- automated rebuild
  
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- \* Mon May 07 2001 Helge Deller <hdeller@redhat.de>
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- don't let configure to guess compiler, it can pick up egcs
  
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- changed "wait" in xinetd file to "yes" (hpa-tftpd forks and exits) (#26467)
- fixed hpa-tftpd to handle files greater than 32MB (#23725)
- added "-l" flag to hpa-tftpd for file-logging (#26467)
- added description for "-l" to the man-page

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  - updated tftp client to 0.17 stable (#19640),
  - drop dependency on xinetd for tftp client (#25051),
  
- \* Wed Jan 17 2001 Jeff Johnson <jbj@redhat.com>
  - xinetd shouldn't wait on tftp (which forks) (#23923).
  
- \* Sat Jan 6 2001 Jeff Johnson <jbj@redhat.com>
  - fix to permit tftp put's (#18128).
  - startup as root with chroot to /tftpboot with early reversion to nobody is preferable to starting as nobody w/o ability to chroot.
  - %%post is needed by server, not client. Add %%postun for erasure as well.
  
- \* Wed Aug 23 2000 Nalin Dahyabhai <nalin@redhat.com>
  - default to being disabled
  
- \* Thu Aug 17 2000 Jeff Johnson <jbj@redhat.com>
  - correct group.
  
- \* Tue Jul 25 2000 Nalin Dahyabhai <nalin@redhat.com>
  - change user from root to nobody
  
- \* Sat Jul 22 2000 Jeff Johnson <jbj@redhat.com>
  - update to tftp-hpa-0.14 (#14003).
  - add server\_args (#14003).
  - remove -D\_BSD\_SOURCE (#14003).
  
- \* Fri Jul 21 2000 Nalin Dahyabhai <nalin@redhat.com>
  - cook up an xinetd config file for tftpd
  
- \* Wed Jul 12 2000 Prospector <bugzilla@redhat.com>
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  - FHS packaging.
  - update to 0.17.
  
- \* Fri May 5 2000 Matt Wilson <msw@redhat.com>
  - use \_BSD\_SOURCE for hpa's tftpd so we get BSD signal semantics.
  
- \* Fri Feb 11 2000 Bill Nottingham <notting@redhat.com>
  - fix description
  
- \* Wed Feb 9 2000 Jeff Johnson <jbj@redhat.com>
  - compress man pages (again).
  
- \* Wed Feb 02 2000 Cristian Gafton <gafton@redhat.com>
  - man pages are compressed

- fix description and summary

\* Tue Jan 4 2000 Bill Nottingham <notting@redhat.com>

- split client and server

\* Tue Dec 21 1999 Jeff Johnson <jbj@redhat.com>

- update to 0.16.

\* Sat Aug 28 1999 Jeff Johnson <jbj@redhat.com>

- update to 0.15.

\* Wed Apr 7 1999 Jeff Johnson <jbj@redhat.com>

- tftpd should truncate file when overwriting (#412)

\* Sun Mar 21 1999 Cristian Gafton <gafton@redhat.com>

- auto rebuild in the new build environment (release 22)

\* Mon Mar 15 1999 Jeff Johnson <jbj@redhat.com>

- compile for 6.0.

\* Fri Aug 7 1998 Jeff Johnson <jbj@redhat.com>

- build root

\* Mon Apr 27 1998 Prospector System <bugs@redhat.com>

- translations modified for de, fr, tr

\* Mon Sep 22 1997 Erik Troan <ewt@redhat.com>

- added check for getpwnam() failure

\* Tue Jul 15 1997 Erik Troan <ewt@redhat.com>

- initial build

Found in path(s):

\* /opt/cola/permits/1108298343\_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/tftp.spec

No license file was found, but licenses were detected in source scan.

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## This program is free software available under the same license

Found in path(s):

\* /opt/cola/permits/1108298343\_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/MCONFIG.in

No license file was found, but licenses were detected in source scan.

.\ " \*- nroff \*- ----- \*

.\ "

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.\ "

```

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.\" LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
.\" OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
.\" SUCH DAMAGE.
.\"
.\"----- */

```

Found in path(s):

```

* /opt/cola/permits/1108298343_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/tftpd/tftpd.8.in
No license file was found, but licenses were detected in source scan.

```

```

/* ----- *
*
* Copyright 2001-2006 H. Peter Anvin - All Rights Reserved
*
* This program is free software available under the same license
* as the "OpenBSD" operating system, distributed at
* http://www.openbsd.org/.
*
* ----- */

```

Found in path(s):

```

* /opt/cola/permits/1108298343_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/tftpd/recvfrom.c
* /opt/cola/permits/1108298343_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/tftpd/recvfrom.h
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```

```

.\" *- nroff *- ----- *

```

```

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.\"----- */

```

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```
* /opt/cola/permits/1108298343_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/tftp/tftp.1.in
```

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```

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```
* /opt/cola/permits/1108298343_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/tftpd/tftpd.h
```

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\* /opt/cola/permits/1108298343\_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/tftp/extern.h

\* /opt/cola/permits/1108298343\_1611281305.28/0/tftp-hpa-5-2-tar-bz2/tftp-hpa-5.2/common/tftpsubs.h

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## 1.4 hd-parm 9.58

## 1.5 linux-kernel 5.4.212

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/\* nicstar.c v0.22 Jawaid Bazyar (bazyar@hypermall.com)

\* nicstar.c, M. Welsh (matt.welsh@cl.cam.ac.uk)

\*

\* Hacked October, 1997 by Jawaid Bazyar, Interlink Advertising Services Inc.

\* <http://www.hypermall.com/>

\* 10/1/97 - commented out CFG\_PHYIE bit - we don't care when the PHY

\* interrupts us (except possibly for removal/insertion of the cable?)

\* 10/4/97 - began heavy inline documentation of the code. Corrected typos

\* and spelling mistakes.

\* 10/5/97 - added code to handle PHY interrupts, disable PHY on

\* loss of link, and correctly re-enable PHY when link is

\* re-established. (put back CFG\_PHYIE)

\*

\* Modified to work with the IDT7721 nicstar -- AAL5 (tested) only.

\*

\* R. D. Rechenmacher <ron@fnal.gov>, Aug. 6, 1997

\*

\* Linux driver for the IDT77201 NICStAR PCI ATM controller.

\* PHY component is expected to be 155 Mbps S/UNI-Lite or IDT 77155;

\* see init\_nicstar() for PHY initialization to change this. This driver

\* expects the Linux ATM stack to support scatter-gather lists

\* (skb->atm.iovcnt != 0) for Rx skb's passed to vcc->push.

\*

\* Implementing minimal-copy of received data:

\* IDT always receives data into a small buffer, then large buffers

\* as needed. This means that data must always be copied to create

\* the linear buffer needed by most non-ATM protocol stacks (e.g. IP)

\* Fix is simple: make large buffers large enough to hold entire

\* SDU, and leave <small\_buffer\_data> bytes empty at the start. Then

\* copy small buffer contents to head of large buffer.

\* Trick is to avoid fragmenting Linux, due to need for a lot of large

\* buffers. This is done by 2 things:

\* 1) skb->destructor / skb->atm.recycle\_buffer

\* combined, allow nicstar\_free\_rx\_skb to be called to

\* recycle large data buffers

\* 2) skb\_clone of received buffers

\* See nicstar\_free\_rx\_skb and linearize\_buffer for implementation  
\* details.  
\*  
\*  
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\*  
\* M. Welsh, 6 July 1996  
\*  
\*  
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## 1.11 sqlite 3.33.0

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## 1.13 libnl3 3.5.0

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```
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under certain conditions; type `show c' for details.
```

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## 1.14 json-c 0.15

### 1.14.1 Available under license :

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## 1.15 iproute 5.9.0-1.el8

### 1.15.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*  
\*-----

\* ip\_prefixlist\_ionized.c - IP Prefix Lists support for ionized processes

\*

\* August 2001, Siva Yaragalla

\*

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\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/ip\_prefixlist\_ionized.c

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/\*-----

\* IP routemap test commands

\*

\* May 2003, Tanya Shastri

\*

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\*

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/exec\_test\_ip\_routemap.h

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/\* \$Id\$

\* \$Source\$

\*-----

\* Registry for IP routing infrastructure in ION

\*

\* September 2001, Fan Kong

\*

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\*-----

\* \$Log\$

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/iprouting\_registry.h

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/\* \$Id\$

```
* $Source$
*-----
* Parse chains for router Address Family mode
*
* June 2002, Donnie Savage
*
* Copyright (c) 1998-2011, 2013-2014, 2016, 2018-2019 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/router_af_chain.c
No license file was found, but licenses were detected in source scan.
```

```
/*
*-----
* exec_debug_routemap.h -- Debugging for Route-map IPC
*
* July 1998, Wilber Su
*
* Copyright (c) 1998, 2001-2002, 2004-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/include/exec_debug_routemap.h
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```

```
/*
*-----
* ion_iprouting_cmd_registry.c
*
* September 2001, Rashmi Shrivastava
*
* Copyright (c) 2001, 2003, 2005-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/ion_iprouting_cmd_registry.c
No license file was found, but licenses were detected in source scan.
```

```
/*
*-----
* exec_debug_routemapapi.h -- Debugging for Route-map API
*
* May 2003, Tanya Shastri
*
* Copyright (c) 2003-2004, 2007-2008, 2014 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/include/exec_debug_routemapapi.h
No license file was found, but licenses were detected in source scan.
```

```
/* $Id: exec_show_ip_prefixlist.h,v 3.1.2.1 1997/12/17 21:36:59 enkechen Exp $
* $Source: /release/111/cvs/Xsys/ip/exec_show_ip_prefixlist.h,v $
*-----
* exec_show_ip_prefixlist.h -- Show IP prefix lists
*
* July 1997 Enke Chen
*
* Copyright (c) 1994-1998, 2000-2001, 2007-2008, 2010 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log: exec_show_ip_prefixlist.h,v $
* Revision 3.1.2.1 1997/12/17 21:36:59 enkechen
* CSCdj61356: Prefix-list - facility for efficient route filtering
* Branch: FIB_branch
*
* Revision 3.1 1997/12/17 01:46:35 enkechen
* Start with the new file.
*
*-----
* $Endlog$
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/exec_show_ip_prefixlist.h
No license file was found, but licenses were detected in source scan.
```

```
/*
*-----
* routemap_track.h -- Route map support for tracking
*
* March 2003 Shyan Wignarajah
*
*-----
*/
```

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\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/routemap\_track.h

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/\*

\*-----

\* Generic prefix list support - prefix lists private header file

\*

\* March 2002, Siva Yaragalla

\*

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\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/ip\_prefixlist\_private.h

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/\*-----

\* iprouting\_cmn.c

\*

\* This file has global definitions common to blob and iprouting proceses.

\*

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\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/iprouting\_cmn.c

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/\*

\*-----

\* iprouting\_DEBUG\_FLAG\_BB.h -- Debugging flag declarations for IP routing

\*

\* May 1993, John Bashinski

\*

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\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/iprouting\_debug\_flags.h

No license file was found, but licenses were detected in source scan.

```
# $Id$
#
#-----
#
# iprouting.startup - ION iprouting process .startup file
#
# October, 2001, Fan Kong
#
#-----
#
# Copyright (c) 2001-2002, 2004-2007 by cisco Systems, Inc.
# All rights reserved.
#
#-----
```

```
name:iprouting.iosproc
path:/sbin
feature:iprouting
level:100
envs:RLIMIT_NOFILE=65535
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/iprouting.startup

No license file was found, but licenses were detected in source scan.

```
/*
* $Id: route_map.h,v 3.3.12.6 1996/05/04 01:22:42 wilber Exp $
* $Source: /release/112/cvs/Xsys/iprouting/route_map.h,v $
*-----
* route_map.h
*
* Route map support data structures.
*
* Copyright (c) 1986-2020 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log: route_map.h,v $
* Revision 3.3.12.6 1996/05/04 01:22:42 wilber
* Branch: California_branch
*
* Constrained Multicast Flooding
* - Define MOSPF hello option bit.
*
```

- \* Name Access List
- \*
- \* Revision 3.3.12.5 1996/04/16 19:02:23 rchandra
- \* CSCdi54830: IP features commit
- \* Branch: California\_branch
- \*
- \* Revision 3.3.12.4 1996/04/05 03:46:42 rchandra
- \* CSCdi53755: BGP: flap dampening settings not flexible enough
- \* Branch: California\_branch
- \* - add route-map support to set flap dampening parameters
- \*
- \* Revision 3.3.12.3 1996/04/02 07:29:32 dkatz
- \* CSCdi52277: Redistribution metric problems with IGRP/EIGRP
- \* Branch: California\_branch
- \* Always store canonical metrics scaled for IGRP, and make EIGRP do
- \* its own scaling internally. Get the scaling right in all three
- \* places.
- \*
- \* Revision 3.3.12.2 1996/03/28 23:59:20 rchandra
- \* CSCdi52098: BGP: exact keyword not accepted by route-map in community
- \* match
- \* Branch: California\_branch
- \* - fix my silly bug in handling exact community matching
- \* - limit the range of valid community to 0xFFFF0000
- \* - fix a cosmetic bug in show ip community-list
- \*
- \* Revision 3.3.12.1 1996/03/28 22:28:27 rchandra
- \* CSCdi52880: BGP: generate error message for unsupported route-map
- \* options
- \* Branch: California\_branch
- \* - generate error message when unsupported route-map option is used
- \* - treat confederation EBGp neighbors similar to internal neighbors in
- \* best path selection
- \* - fix the bug in bgp\_compare\_med, so that during MED comparison,
- \* confederation information is skipped properly
- \* - confederation EBGp paths should be inserted into the IP table with
- \* internal distance
- \* - do not consider common-AS neighbors as confederation neighbors
- \* - during 'clear ip bgp dampening' avoid skipping paths
- \* - undo the patch to the radix version walker
- \*
- \* Revision 3.3 1996/02/17 01:23:27 myeung
- \* CSCdi49210: match tag clause does not work with static routes
- \*
- \* Revision 3.2 1995/11/17 17:37:17 hampton
- \* Remove old entries from the RCS header logs.
- \*
- \* Revision 3.1 1995/11/09 12:10:38 shaker

```

* Bump version numbers from 2.x to 3.x.
*
* Revision 2.4 1995/09/25 08:31:20 tli
* CSCdi40960: ISP jumbo patch 2
*
* Revision 2.3 1995/07/12 07:19:12 tli
* CSCdi36426: Policy routing will not disable on an interface
* - Policy routed packets were creating fastswitching cache entries.
* That's not till _next_ release.
* - Add counters to record packet and byte count on a per route map entry
* basis.
* - Marketing identified a catastrophic deficiency. Implemented "set ip
* tos" and "set ip precedence" to cover this deficiency.
*
* Revision 2.2 1995/07/06 23:12:41 rchandra
* CSCdi36759: BGP : Add conditional per neighbor default generation
* - add 'neighbor <x.x.x.x> default-originate route-map <tag>' command.
*
* Revision 2.1 1995/06/07 21:10:57 hampton
* Bump version numbers from 1.x to 2.x.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/include/route_map.h
No license file was found, but licenses were detected in source scan.

```

```

/* $Id: ip_routing.c,v 3.2 1995/11/17 17:34:11 hampton Exp $
* $Source: /swtal/cherf.111/ios/sys/iprouting/ip_routing.c,v $
*-----
* ip_routing.c -- Generic IP routing functions
*
* Mar 1995 Tony Li
*
* Copyright (c) 1995-1998, 2002-2008, 2010 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log: ip_routing.c,v $
* Revision 3.2 1995/11/17 17:34:11 hampton
* Remove old entries from the RCS header logs.
*
* Revision 3.1 1995/11/09 12:08:05 shaker
* Bump version numbers from 2.x to 3.x.
*
* Revision 2.1 1995/06/07 21:07:03 hampton
* Bump version numbers from 1.x to 2.x.

```

```
*
*-----
* $Endlog$
*/
```

Found in path(s):

```
*/opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/ip_routing.c
No license file was found, but licenses were detected in source scan.
```

```
/*-----
* router_af_parse.c
*
* Route Address Family command and action definitions. Derived from
* router_af_chain.c
*
* May 2002, Victor Kamensky
*
* Copyright (c) 2002-2010, 2012, 2014-2016, 2019 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
*/opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/router_af_parse.c
No license file was found, but licenses were detected in source scan.
```

```
/* $Id$
* $Source$
*-----
* policylist.c - Routines to handle policy-list commands
*
* Apr. 2000, Rex Fernando
*
* Copyright (c) 2000, 2002-2011, 2016-2017, 2020 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
*/opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/policylist.c
No license file was found, but licenses were detected in source scan.
```

```
/*-----
* iprouting_common.h - Basic types for IP routing (IPv4/IPv6)
*
* Contains:
* - address family enum,
* - tableid type and related macros
```

```
* - topoid type and related macros
* - private topoid definitions and APIs
* - generic non-routing ID definitions/APIs
*
* Warning: this file should not have any dependency on other header file
* except those where basic C types are defined.
*
* June 2003, Luc Revardel
*
* Copyright (c) 2003-2013, 2016, 2018, 2020 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/include/iprouting_common.h
No license file was found, but licenses were detected in source scan.
```

```
/*
*-----
* cfg_int_ip2_vnet_routing.h
*
* Interface VNET submode configuration IP commands.
*
* Copyright (c) 2009-2010 by cisco Systems, Inc.
* All rights reserved.
*
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/cfg_int_ip2_vnet_routing.h
No license file was found, but licenses were detected in source scan.
```

```
/* $Id$
* $Source$
*-----
* IP routing show commands
*
* May 1993, Robert Widmer
*
* Copyright (c) 1993-2003, 2005, 2007-2011, 2013, 2015-2020 by cisco Systems, Inc.
* All rights reserved.
*
*-----
* $Log$
*-----
* $Endlog$
```

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/exec\_show\_ip\_routing.h

No license file was found, but licenses were detected in source scan.

```
!-----
! iproutingcmn_router_cmd.sesut - IPv4 Routing Common Router
!   Commands Unit Test Routines
!
! December 2007, Chi Iong Ansjory
!
! Copyright (c) 2007 by cisco Systems, Inc.
! All rights reserved.
!-----
! Sample unit test description file.
! This file is used for generation of unit test module by SESUT.
! See http://wwwin-ses.cisco.com/unittest/sesut\_ios.html for
! information about SESUT.
!
! Include a description of your test here.
!
! This is made up of many sections. Each section header starts with % in
! first column. It is followed by the section identifier.
! Lines that have '!' in the first column are considered comments.
! Blank lines are ignored.
!
! You can report success/failure of your test by calling the following
! functions.
! Call sesut_<file prefix>_testpass to indicate test success.
! void sesut_<file prefix>_testpass(void);
! Call sesut_<file prefix>_testfail to indicate test failure.
! void sesut_<file prefix>_testfail(const char *fmt, ... );
! The length of the formatted string should be less than or equal
! to 255. Else it will be truncated.
! Prototypes for these functions are included in the header file that
! is generated by SESUT.
```

% Cflow

```
! Enter the files/subsystems in the unit under test.
! These files will be instrumented for Cflow and MIF(if MIF is
! available in your view). GDB flag -g is used during compilation.
! cflow_list=$(sub_mif) xyz.o $(my_subsys) abc.o
! This list is ignored if ses_iouut is used. ses_iouut instruments all files
! in UUT(defined by -old and -new options).
```

% MIF

```

! Enter MIF configuration
! If MIF configuration is not specified and cflow_list is specified
! then a default MIF configuration is used.
!../os/free.c
!../os/buffers.c
!../os/chunk.c
!-----
!malloc
!malloc_aligned
!malloc_fast
!malloc_pcimem
!malloc_named
!chunk_malloc
!getbuffer
!pool_getbuffer

% API
! Include DTD configuration.
! Not all features of DTD are available with SESUT yet.
! List headers/text that contain prototypes for the functions to be tested
! for robustness followed by a line consisting of '-'s followed by
! the list of functions to be tested for robustness.
! It is assumed that a .h file that includes all the text listed above
! the line consisting of '-'s is self-compiling in the same context as
! the one used to compile the .sesut file and has the definitions of
! all the objects whose pointers are referenced.
!master.h
!../testtools/testtools.h
!../testtools/testtools_private.h
!<stdio.h>
!void mynewapi(int,int);
!-----
!mif_enable
!mif_disable
!mif_clear
!mif_lock
!mynewapi

% env
! Use this section to list object modules that are not
! part of the standard build but are used by the tests defined in this
! file. The text following "link:" is inserted into the final link step.
!link: xyz.o abc.o
!
! Use this section to add any special 'CFLAGS' needed to compile sesut
! generated test file
!cflags: -I../http/http_core/include
!cflags: -I../http/http_core/server

```

```

!cflags: -I../ios_http_core/config -I../http/http_core/lib
!cflags: -DEW_CONFIG_OPTION_CLIENT_CACHE
!
! You can specify functions to be executed before and after the test.
! pretest is executed before executing the unit test and the posttest is
! executed after executing the unit test. These are executed once regardless
! of the repeat count. The prototypes of these functions are expected to be:
! void <pretest>(void);
! void <posttest>(void);
! Define these functions in the 'model prolog' section. Note that these
! are optional. You can have one or both or none.
!pretest:config_my_feature
!posttest:validate_results
! If want want your pretest/posttest functions to receive same
! parameters as the test then specify the functions as:
!pretest_withparams:config_my_feature
!posttest_withparams:validate_results
! The prototypes for these functions would be:
! void <pretest_withparams>(<types of parameters>)
! void <posttest_withparams>(<types of parameters>)
! Parameters are specified using "parameter:" keyword in % model" section.
! If both {pre|post}test and {pre|post}test_withparams are specified:
! pretest is executed before pretest_withparams.
! posttest is executed after posttest_withparams.

! You can specify a initializer/finalizer function to be executed
! at the time of test initialization/removal.
! Initializer is executed once during the lifetime of the current instance of
! the test. If the test is part of the image then the initializer is executed
! during subsystem initialization. If the test is a DLST(dynamically loaded)
! then the initializer is executed just after the dynamic load.
! The finalizer is executed when the test is removed (happens when the test is
! being replaced).
! Note that the subsystems in the DLST are not initialized. You must list the
! subsystem init functions in the initializer function. Subsystem header is
! ignored for DLST's. You will not see the subsystems for DLST's listed in
! "show subsys" output.
! Use initializer to perform tasks like registry addition, memory allocation etc.
! Similarly use the finalizer to free these resources. This is an important
! consideration. Treat them like constructor/destructor for the DLST.
!
! The prototypes of these functions are expected to be:
! void <initializer>(void);
! void <finalizer> (void);
! Define these functions in the 'model prolog' section. Note that these
! are optional. You can have one or both or none.
!initializer:my_init
!finalizer:my_finit

```

```

% model prolog iou
! This code will be copied unchanged to the start of the generated .c file
! Include definitions, declarations, include statements that
! are used in the model
! You can include stubs for the functions that are not ready yet but are
! invoked.
! If you choose to have pretest and posttest functions include them here.
!
! "model prolog " accepts additional keywords.
! dt - This is meaningful in automation environments. If the test you are
!   creating alters global state then use "dt" keyword. This informs
!   automation framework that device should be reloaded prior to
!   running next test.
! iou - Use this keyword if the test can be executed under IOU.
! preinit - Use this if the test executes prior to system initialization.
! % model prolog dt

#include IOS_INC(testtools/sesutlib_ios.h)
#include <routing/iprouting_cmn/include/ip_stats.h>
#include <routing/iprouting_cmn/include/iprouting_debug.h>
#include <routing/iprouting_cmn/include/router_af_actions_registry.h>

boolean sesrc;

% model digraph
! Describe the model. You have structured your test as a
! directed graph. Start keywords in column 1. Start the code at an
! offset(2TABS). This line("model digraph") can have an optional keyword.
! That is "vdag". This would generate testcases representing various
! acyclic paths leading from the start node. These tests cover all nodes.
! This does not guarantee that all the edges are covered.
! If your test model is a tree(or hierarchical) or a DAG(Directed Acyclic
! Graph) then you should use this keyword.
!% model digraph vdag
! There are three keywords. They are
! start node <nodeIdentifier> - Specify the start node in the model
! node <nodeIdentifier>: - Begining of a node description.
!     Include descriptions for all edges starting at this node.
!     If there is code to be executed upon entry to this node
!     enter that immediatly following this line but before
!     entering any edge description.
! -><nodeIdentifier>: - Begining of an edge description. This describes an
!     edge from the node to &lt;n>
! Choose <nodeIdentifier> to be descriptive. Examples: AVLTreeInsert,
!     DBSearch, DetachLine
! These identifiers are used during runtime to present execution times

```

```

! and other data.
! You can specify parameters for your unit test as follows:
!parameters:(uint interface, char* hostname="abc", uint subInterface=1)
!This should come before the line specifying the start node.
!The parameters can be used in the code for nodes/edges. The values
!for parameters are received via CLI or as a result of direct invocation of
!the generated function. Parameters can be of type 'uint'
!or 'char*'. If values for parameters are provided on CLI defaults are used.
! You should provide default values. If default values are not specified
! then the tool would assign default values. If the type is "uint" the
! default value is 0. Else(type char*) the default value is "".
! During automation the default values are used. Use descriptive names
! for parameters.
start node StartNode
! You can place initialization code that needs to be executed
! prior to entering the start node here.
node StartNode:

! ===== 6 APIs from ip_stats.h/ip_registry.reg =====

! 1. DEFINE show_ip_interface_with_topo

(void) sesut_execcommand(FALSE, "show ip interface e0/0 topology base stats");
printf("\n----- SESUT Test Reg: show_ip_interface_with_topo -----");

! 2. DEFINE clear_ip_interface_with_topo

(void) sesut_execcommand(FALSE, "clear ip interface e0/0 topology base stats");
printf("\n----- SESUT Test Reg: clear_ip_interface_with_topo -----");

! 3. DEFINE show_ip_traffic_with_topo

(void) sesut_execcommand(FALSE, "show ip traffic topology base");
printf("\n----- SESUT Test Reg: show_ip_traffic_with_topo -----");

! 4. DEFINE clear_ip_traffic_with_topo

(void) sesut_execcommand(FALSE, "clear ip traffic topology base");
printf("\n----- SESUT Test: clear_ip_traffic_with_topo -----");

! 5. DEFINE show_ip_interface_stats

(void) sesut_execcommand(FALSE, "show ip interface e0/0 stats");
printf("\n----- SESUT Test Reg: show_ip_interface_stats -----");

! 6. DEFINE clear_ip_interface_stats

(void) sesut_execcommand(FALSE, "clear ip interface e0/0 stats");

```

```

printf("\n---- SESUT Test Reg: clear_ip_interface_stats ----");

! ===== 2 APIs from iprouting_debug.h =====

! 1. void
!  iprouting_debug_arr_ios_set_csb(struct parseinfo_ *csb);

!iprouting_debug_arr_ios_set_csb(NULL);
printf("\n---- SESUT Test: iprouting_debug_arr_ios_set_csb() ----");

! 2. void
!  iprouting_ios_call_debug_cmd(struct parseinfo_ *csb);

!iprouting_ios_call_debug_cmd(NULL);
printf("\n---- SESUT Test: iprouting_ios_call_debug_cmd() ----");

! ===== 1 API from router_af_actions_registry.reg =====

! 1. DEFINE address_family_action_named_router REMOTE 3

sesrc = reg_invoke_address_family_action_named_router(NULL);
printf("\n---- SESUT Test Reg: address_family_action_named_router ----");

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/test/iproutingcmn_router_cmd.sesut

```

No license file was found, but licenses were detected in source scan.

```

/* $Id$
* $Source$
*-----
* iprouting_init_ios.c -- IP Routing Init code for Native IOS only
*
* October 2001, Rashmi Shrivastava
*
* Copyright (c) 2001-2009 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/iprouting_init_ios.c

```

No license file was found, but licenses were detected in source scan.

```

/*

```

```
*-----
* exec_clear_routemap.h -- clear route-map counters
*
* Copyright (c) 1986-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/exec\_clear\_routemap.h

No license file was found, but licenses were detected in source scan.

```
/*-----
* router_topology_parse.c - Router topology command definitions.
*
* Sept 2004, Mercia Zheng
*
* Copyright (c) 2004-2010, 2019-2020 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/router\_topology\_parse.c

No license file was found, but licenses were detected in source scan.

```
/*
*-----
* ipv4_subsys.c - IPv4 Routing Startup Subsystem
*
* July 2005, Mark Schaefer
*
* Copyright (c) 2005-2010, 2013 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/ipv4\_subsys.c

No license file was found, but licenses were detected in source scan.

```
/* $Id$
* $Source$
*-----
* cfg_routemap_set.h
*
* Process route-map set subcommands.
*
*/
```

\* Copyright (c) 1992-1998, 2001-2003, 2007-2019 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\* \$Log\$

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/cfg\_routemap\_set.h

No license file was found, but licenses were detected in source scan.

/\* \$Id: cfg\_ip\_routing\_routing.h,v 3.3.46.3 1996/08/12 16:03:33 widmer Exp \$

\* \$Source: /release/112/cvs/Xsys/iprouting/cfg\_ip\_routing\_routing.h,v \$

\*-----

\* IP routing routing commands

\*

\* May 1993, Robert Widmer

\*

\* Copyright (c) 1993-2000, 2002-2009 by cisco Systems, Inc.

\* All rights reserved.

\*

\*-----

\* \$Log: cfg\_ip\_routing\_routing.h,v \$

\* Revision 3.3.46.3 1996/08/12 16:03:33 widmer

\* CSCdi65725: Create Eolns macro that defaults csb->which to 0

\* Branch: California\_branch

\* Add Eolns and Nvgenns macro that default csb->which to 0

\* Remove hidden keyword help strings

\*

\* Revision 3.3.46.2 1996/06/17 23:33:31 hampton

\* Implement the long sought parser "default" keyword. [CSCdi60510]

\* Branch: California\_branch

\*

\* Revision 3.3.46.1 1996/04/15 21:17:41 bcole

\* CSCdi54649: IP Host Modularity, IP Automatic Stub Routing feature

\* commit

\* Branch: California\_branch

\*

\* Revision 3.3 1995/12/10 00:42:36 pst

\* CSCdi38750: Allow static routes with both next hop and interface

\* also add "permanent" keyword for non-flapping static routes

\*

\* Revision 3.2 1995/11/17 17:31:40 hampton

\* Remove old entries from the RCS header logs.

\*

\* Revision 3.1 1995/11/09 12:04:59 shaker

\* Bump version numbers from 2.x to 3.x.

```

*
* Revision 2.4 1995/10/23 18:33:19 pst
* CSCdi42608: allow IP cache ager to be shut down, make the
* "ip cache-ager" and "ip cache-invalidate-delay"
* commands internal only.
*
* Revision 2.3 1995/07/13 21:39:05 ahh
* CSCdi36962: UDP parsing of tacacs-ds port name broken
* Restore "tacacs-ds" as a keyword, but hide it and map it to TACACS_PORT
* for backwards compatibility.
*
* Revision 2.2 1995/07/11 21:52:08 raj
* CSCdi36510: parser doesnt accept ip forward-protocol udp xdmcp
* (Actually the parser didn't accept *any* symbolic names in the position
* of the UDP port number; only numbers. It now uses the UDP_PORT macro
* instead.
*
* Revision 2.1 1995/07/01 12:15:42 tli
* CSCdi36508: Rationalize parser file placement, part I
* Rationalize iprouting
*
* Revision 2.1 1995/06/07 22:08:34 hampton
* Bump version numbers from 1.x to 2.x.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/cfg_ip_routing_routing.h
No license file was found, but licenses were detected in source scan.

```

```

/*
*-----
* routemap_ios_chain.c -- Route-map generic ios parse chains that
* will be in both RP and VIP/LC
*
* July 1998, Wilber Su
*
* Copyright (c) 1998, 2004-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/routemap_ios_chain.c
No license file was found, but licenses were detected in source scan.

```

```
/*
*-----
* iprouting_init_ionblob.c -- IP Routing Init code for blog in ION only
*
* October 2001, Rashmi Shrivastava
*
* Copyright (c) 2001-2017 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/iprouting_init_ionblob.c
No license file was found, but licenses were detected in source scan.
```

```
/* $Id$
* $Source$
*-----
* IP routing parse chains
*
* May 1993, Robert Widmer
*
* Copyright (c) 1993-2012, 2015-2016 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/iprouting_chain.c
No license file was found, but licenses were detected in source scan.
```

```
/* $Id$
* $Source$
*-----
* route2.c -- Routing Support: User Interface Routines
*
* 22-March-1986, Kirk Lougheed
*
* Copyright (c) 1986-2020 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
```

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/route2.c

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* ip\_prefixlist\_ionblob.c - IP Prefix Lists support for IONized clients

\*

\* January 2002, Siva Yaragalla

\*

\* Copyright (c) 2002-2003, 2005, 2007-2008 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/ip\_prefixlist\_ionblob.c

No license file was found, but licenses were detected in source scan.

/\* \$Id\$

\* \$Source\$

\*-----

\* lfafr\_registry.c

\*

\* July 2010, Ahmed Bashandy

\*

\* Copyright (c) 2001, 2003, 2005, 2007-2008, 2010 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\* \$Log\$

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/lfafr\_registry.c

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* route\_map\_ionized.c - Route Maps support for IONized processes

\*

\* July 2001, Siva Yaragalla

\*

\*

\* Route map subsystem for IOS style processes.

\*  
\* Copyright (c) 2001-2009, 2011, 2016-2017 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/route\_map\_ionized.c  
No license file was found, but licenses were detected in source scan.

/\* \$Id\$  
\* \$Source\$  
\*-----  
\* Address Family configuration mode commands.  
\*  
\* April 1998, Bob Thomas  
\*  
\* Copyright (c) 1998-1999, 2007-2008 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\* \$Log\$  
\*-----  
\* \$Endlog\$  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/cfg\_af\_mode.h  
No license file was found, but licenses were detected in source scan.

/\*  
\*-----  
\* cfg\_routetag\_list.h -- Route Tag List Parser Command  
\*  
\* June 2011, Karthik Subramaniam  
\*  
\* Copyright (c) 1997-2001, 2004, 2007-2008, 2011, 2013 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\* \$Endlog\$  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/cfg\_routetag\_list.h  
No license file was found, but licenses were detected in source scan.

/\* \$Id\$  
\* \$Source\$

```
*-----
* CFG_ROUTER_TABLE - MAP . H
*
* Copyright (c) 1993-1996, 1999, 2001, 2003, 2005-2019 by cisco Systems, Inc.
* All Rights Reserved
*-----
* $Log$
*-----
* $Endlog$
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/cfg_router_table-map.h
No license file was found, but licenses were detected in source scan.
```

```
/*-----
* iprouting_actions_registry.h
*
* Router address family actions registry.
*
* May 2002, Victor Kamensky
*
* Copyright (c) 2002-2003, 2007-2008, 2010 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/include/router_af_actions_registry.h
No license file was found, but licenses were detected in source scan.
```

```
/*-----
* ip_stats.h - IP for topology aware stats
*
* Feburary 2006, Jonsky Hsu
*
* Copyright (c) 2006-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/include/ip_stats.h
No license file was found, but licenses were detected in source scan.
```

```
/* $Id: iprouting_init.c,v 1.1 2003/06/13 18:30:09 dsavage Exp dsavage $
```

```

* $Source: /view/dsavage-CSCdy77097-rip-V123/vob/ios.sys2/sys/iprouting/iprouting_init.c,v $
*-----
* iprouting_init.c -- initialize IP Routing Protocol support.
*
* 20-August-1985, Kirk Lougheed
*
* Copyright (c) 1985-2012, 2016, 2018-2019 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log: iprouting_init.c,v $
* Revision 1.1 2003/06/13 18:30:09 dsavage
* Initial revision
*
*-----
* $Endlog$
*/

```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/iprouting\_init.c

No license file was found, but licenses were detected in source scan.

```

/*
*-----
* Debugging flag declarations for protocol filter manager - ION
*
* Jan 2006, Mercia Zheng
*
* Copyright (c) 2005-2008 by cisco Systems, Inc.
* All Rights Reserved
*-----
*/

```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/protofltr\_debug\_flags\_ion.h

No license file was found, but licenses were detected in source scan.

```

/*
*-----
* exec_show_routetag_list.h
*
* Copyright (c) 1993-1996, 1998, 2003-2008, 2011 by cisco Systems, Inc.
* All rights reserved.
*
* Command parsing chain for "show route-tag".
*-----
*
*/

```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/exec\_show\_routetag\_list.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* iprouting\_parser\_linkpoints.h - iprouting parser linkpoint decls.

\*

\* April, 2005

\*

\* Copyright (c) 2005, 2007-2008, 2015 by cisco Systems, Inc.

\* All rights reserved.

\*

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-

tar/iprouting\_cmn/include/iprouting\_parser\_linkpoints.h

No license file was found, but licenses were detected in source scan.

/\*-----

\* routemap\_api.c -- Dynamic routemap APIs.

\*

\* May 2003, Tanya Shastri

\*

\* Copyright (c) 2003, 2005-2015, 2018-2019 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/routemap\_api.c

No license file was found, but licenses were detected in source scan.

/\*-----

\* iprouting\_parse\_blob.c

\*

\* Parser support for IP ROUTING .

\* This file implements proxy eols that call iprouting parser remote

\* registries.

\*

\* September 2001, Rashmi Shrivastava

\*

\* Copyright (c) 2001-2009 by cisco Systems, Inc.

\* All Rights Reserved

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/iprouting\_parse\_blob.c

No license file was found, but licenses were detected in source scan.

```
/*
*-----
* router_topology_parse.h
*
* Router topology parser functions declarations.
*
* Sept 2004, Mercia Zheng
*
* Copyright (c) 2004-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/router\_topology\_parse.h

No license file was found, but licenses were detected in source scan.

```
/* $Id$
* $Source$
*-----
* C F G _ R O U T E R _ O U T P U T - D E L A Y . H
*
* router RIP inter-frame gap subcommand
*
* Aug 1996, Dawn Li
*
* Copyright (c) 1996, 1998-1999, 2001, 2007-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/cfg\_router\_output-delay.h

No license file was found, but licenses were detected in source scan.

```
/* $Id$
* $Source$
*-----
* route.h -- IP routing definitions
```

```
*
* 22-March-1986, Kirk Lougheed
*
* Copyright (c) 1986-2020 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
*/
```

Found in path(s):  
\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/route.h  
No license file was found, but licenses were detected in source scan.

```
/*-----
* router_af_actions_registry.c
*
* Router address family actions registry.
*
* May 2002, Victor Kamensky
*
* Copyright (c) 2002-2004, 2007-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):  
\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/router\_af\_actions\_registry.c  
No license file was found, but licenses were detected in source scan.

```
/*-----
* protofltr_public.h
*
* Routing protocol filter manager Public API definitions
*
* Dec 2008, Mercia Zheng
*
* Copyright (c) 2008-2009 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):  
\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/protofltr\_public.h  
No license file was found, but licenses were detected in source scan.

```

/* $Id$
 * $Source$
 *-----
 * iprouting_registry.c
 *
 * September 2001, Fan Kong
 *
 * Copyright (c) 2001, 2003, 2005, 2007-2008 by cisco Systems, Inc.
 * All rights reserved.
 *-----
 * $Log$
 *-----
 * $Endlog$
 */

```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/iprouting_registry.c
```

No license file was found, but licenses were detected in source scan.

```

/* $id: iprouting_actions.c,v 3.2.60.2 1996/08/23 22:02:29 jserpa Exp $
 * $Source: /release/112/cvs/Xsys/iprouting/iprouting_actions.c,v $
 *-----
 * IP routing specific parsing functions.
 *
 * August 1994, Bruce Cole
 *
 * Copyright (c) 1994-2010, 2012, 2015, 2017-2018 by cisco Systems, Inc.
 * All rights reserved.
 *-----
 * $Log: iprouting_actions.c,v $
 * Revision 3.2.60.2 1996/08/23 22:02:29 jserpa
 * CSCdi67021: router ospf <as> gets nv-ramed in reverse order of
 * configuration
 * Branch: California_branch
 *
 * Revision 3.2.60.1 1996/04/15 21:18:11 bcole
 * CSCdi54649: IP Host Modularity, IP Automatic Stub Routing feature
 * commit
 * Branch: California_branch
 *
 * Revision 3.2 1995/11/17 17:34:38 hampton
 * Remove old entries from the RCS header logs.
 *
 * Revision 3.1 1995/11/09 12:08:28 shaker
 * Bump version numbers from 2.x to 3.x.
 *
 * Revision 2.1 1995/06/07 21:07:33 hampton
 * Bump version numbers from 1.x to 2.x.

```

```
*
*-----
* $Endlog$
*/
```

Found in path(s):

```
*/opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/iprouting_actions.c
No license file was found, but licenses were detected in source scan.
```

```
/* $Id$
* $Source$
*-----
* cfg_router_input-queue.h
*
* September 1997, Dawn Li
*
* Copyright (c) 1997-2002, 2007-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
*/
```

Found in path(s):

```
*/opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/internal_inc/cfg_router_input-queue.h
No license file was found, but licenses were detected in source scan.
```

```
/*
*-----
* cfg_router_topology_mode.h - router topology configuration sub mode
* commands.
*
* Sept 2004, Mercia Zheng
*
* Copyright (c) 2004, 2007-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
*/opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/cfg_router_topology_mode.h
No license file was found, but licenses were detected in source scan.
```

```
/* $Id: cfg_router_traffic-share.h,v 3.3.20.1 1996/08/12 16:03:58 widmer Exp $
* $Source: /release/112/cvs/Xsys/iprouting/cfg_router_traffic-share.h,v $
*-----
```

\* cfg\_router\_traffic-share.h - parsing of the traffic-share command  
\*  
\* Oct 1993 Tony Li  
\*  
\* Copyright (c) 1993-1999, 2001-2002, 2004-2009, 2015 by cisco Systems, Inc.  
\* All rights reserved.

\*-----  
\* \$Log: cfg\_router\_traffic-share.h,v \$  
\* Revision 3.3.20.1 1996/08/12 16:03:58 widmer  
\* CSCdi65725: Create Eolns macro that defaults csb->which to 0  
\* Branch: California\_branch  
\* Add Eolns and Nvgenns macro that default csb->which to 0  
\* Remove hidden keyword help strings  
\*  
\* Revision 3.3 1996/02/01 23:34:03 widmer  
\* CSCdi45325: Change Keyword/Set to use Keyword\_Id macro  
\*  
\* Revision 3.2 1995/11/17 17:32:35 hampton  
\* Remove old entries from the RCS header logs.  
\*  
\* Revision 3.1 1995/11/09 12:06:21 shaker  
\* Bump version numbers from 2.x to 3.x.  
\*  
\* Revision 2.1 1995/07/01 12:16:07 tli  
\* CSCdi36508: Rationalize parser file placement, part I  
\* Rationalize iprouting  
\*  
\* Revision 2.1 1995/06/07 22:13:22 hampton  
\* Bump version numbers from 1.x to 2.x.  
\*  
\*-----  
\* \$Endlog\$  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/cfg\_router\_traffic-share.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----  
\* routemap\_ios\_blob.c -- Route map support routines that can be shared  
\* by RP and VIP/LC  
\*  
\* October 14, 2001 Siva Yaragalla  
\*  
\* Copyright (c) 2001-2020 by cisco Systems, Inc.  
\* All rights reserved.

```
*-----  
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/routemap_ios_blob.c  
No license file was found, but licenses were detected in source scan.
```

```
/*  
*-----  
* msg_routemap.c -- Message system definitions for Route-map  
*  
* Copyright (c) 2003, 2007-2008 by cisco Systems, Inc.  
* All rights reserved.  
*-----  
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/msg_routemap.c  
No license file was found, but licenses were detected in source scan.
```

```
/*  
* $Id$  
* $Source$  
*-----  
* route3.c -- Routing Support: Router command and related routines  
*  
* 15-June-1987, Kirk Lougheed  
*  
* Copyright (c) 1987-2021 by cisco Systems, Inc.  
* All rights reserved.  
*-----  
* $Log$  
*-----  
* $Endlog$  
*/  
/*
```

```
    * If its not a per-user distribute-list, we have to configure the  
    * route-map for pflist_def too - its used to restore default when  
    * a per-user distribute-list is un-configured as well as for  
    * nvgen purposes. All this mess, only for the interface specific  
    * version.
```

```
    */  
/*  
    * This command is only valid for ipv4 and nsap AFs in BGP.  
    * However it is accepted for other BGP AFs  
    * for backwards compatibility. However, no action  
    * is taken for these AFs and it is not nvgen'ed  
    * either. Check out cfg_router_default.h for
```

\* more details.

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/route3.c

No license file was found, but licenses were detected in source scan.

/\* \$Id\$

\* \$Source\$

\*-----

\* Exit from BGP Address Family mode.

\*

\* Sept 1998, Bob Thomas

\*

\* Copyright (c) 1998-1999, 2007-2009 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\* \$Log\$

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/cfg\_af\_exit.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* protofltr\_debug.h -- Routing protocol filter manager debug flag

\*

\* Jan 2006, Mercia Zheng

\*

\* Copyright (c) 2005-2008 by Cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/protofltr\_debug.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* cfg\_router\_maximum-paths.h

\*

\* 22-May-2016, Les Ginsberg

\*

\* Copyright (c) 2016 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/cfg\_router\_maximum-sec-paths.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* iprouting\_debug.h -- Debugging declarations for IP routing

\*

\* May 1993, John Bashinski

\*

\* Copyright (c) 1993-2010 by Cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/iprouting\_debug.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* iprouting\_parser\_linkpoints.c - iprouting parser linkpoint defs.

\*

\* April, 2005

\*

\* Copyright (c) 2005, 2007-2008 by cisco Systems, Inc.

\* All rights reserved.

\*

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/iprouting\_parser\_linkpoints.c

No license file was found, but licenses were detected in source scan.

/\* \$Id: cfg\_router\_offset.h,v 3.3.20.4 1996/09/04 23:46:26 mikel Exp \$

\* \$Source: /release/112/cvs/Xsys/iprouting/cfg\_router\_offset.h,v \$

\*-----

\* C F G \_ R O U T E R \_ O F F S E T . H

\*

\* Copyright (c) 1992-1998, 2002, 2004-2008 by cisco Systems, Inc.

\* All Rights Reserved

\*-----

```

* $Log: cfg_router_offset.h,v $
* Revision 3.3.20.4 1996/09/04 23:46:26 mikel
* CSCdi65889: offset-list doesnt work for EIGRP
* Branch: California_branch
* Re-enable offset-list command as well as adding offset-list out support,
* and fix offset-list to work with access-lists
*
* Revision 3.3.20.3 1996/08/12 16:03:48 widmer
* CSCdi65725: Create Eolns macro that defaults csb->which to 0
* Branch: California_branch
* Add Eolns and Nvgenns macro that default csb->which to 0
* Remove hidden keyword help strings
*
* Revision 3.3.20.2 1996/05/04 01:21:23 wilber
* Branch: California_branch
*
* Constrained Multicast Flooding
* - Define MOSPF hello option bit.
*
* Name Access List
*
* Revision 3.3.20.1 1996/04/09 05:54:35 mikel
* CSCdi49628: EIGRP ignores outgoing offset-list
* Branch: California_branch
* disable offset-list command from eigrp router config
*
* Revision 3.3 1996/02/01 23:33:59 widmer
* CSCdi45325: Change Keyword/Set to use Keyword_Id macro
*
* Revision 3.2 1995/11/17 17:32:19 hampton
* Remove old entries from the RCS header logs.
*
* Revision 3.1 1995/11/09 12:05:53 shaker
* Bump version numbers from 2.x to 3.x.
*
* Revision 2.1 1995/07/01 12:15:58 tli
* CSCdi36508: Rationalize parser file placement, part I
* Rationalize iprouting
*
* Revision 2.1 1995/06/07 22:12:58 hampton
* Bump version numbers from 1.x to 2.x.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/internal_inc/cfg_router_offset.h
```

No license file was found, but licenses were detected in source scan.

```
/*
*-----
* network_constants.h -- General Networking Constants
*
* June 2002, interest-idb
*
* Copyright (c) 2002-2004, 2007-2008 by cisco Systems, Inc.
* All rights reserved.
*
*-----
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/network\_constants.h  
No license file was found, but licenses were detected in source scan.

```
/*-----
* routing_context_chain.c
*
* Parse chain file for routing context support.
*
* March 2009, Derek Yeung
*
* Copyright (c) 2009, 2015 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/routing\_context\_chain.c  
No license file was found, but licenses were detected in source scan.

```
/*
*-----
* IOS prefix list support.
*
* March 2005, Sarath Chandran
*
* Copyright (c) 2005, 2007-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/ip\_prefixlist\_ios.c

No license file was found, but licenses were detected in source scan.

```
/*
*-----
* routemap_debug_flags.h -- Routemap debugging support
*
* July 1998, Wilber Su
*
* Copyright (c) 1998, 2004, 2007-2008, 2014 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/include/routemap_debug_flags.h
```

No license file was found, but licenses were detected in source scan.

```
##
## content.lst file for iprouting_cmn
## See EDCS-905060 for more details.
##
## Oct 2010, Manu Pathak
##
## Copyright (c) 2010-2011, 2016 by cisco Systems, Inc.
## All rights reserved.
##
```

syntax: 1.0.0

```
# iprouting_cmn meta-source files
group: iprouting_cmn-generic
{
enum:
    iprouting_cmn/include/enum/iprouting_api.enum

reg:
    iprouting_cmn/include/reg/ion_iprouting_cmd_registry.reg
    iprouting_cmn/include/reg/iprouting_registry.reg
    iprouting_cmn/include/reg/lfafrr_registry.reg
    iprouting_cmn/include/reg/route_map_registry.reg
    iprouting_cmn/include/reg/router_af_actions_registry.reg
    iprouting_cmn/include/reg/router_topology_registry.reg
    iprouting_cmn/include/reg/routing_context_registry.reg
}
# end of group: iprouting_cmn-generic

# iprouting_cmn source files
group: iprouting_cmn
```

```

{
includes:
  ../generic/routing/iprouting_cmn/include
  $(COMPONENT_ROOT)/routing/iprouting_cmn/include
  $(COMPONENT_ROOT)/routing/iprouting_cmn/internal_inc
  $(COMPONENT_ROOT)/routing/iprouting_cmn/src
  $(COMPONENT_ROOT)/routing
  $(COMPONENT_ROOT)/posix/include
  $(IOS_SYSROOT)/ion/include
  $(IOS_SYSROOT)/crypto/ca
  $(IOS_SYSROOT)/crypto/ca/certcinc
  $(IOS_SYSROOT)/crypto/ca/bsafeinc
  $(IOS_SYSROOT)/crypto/ca/provider/include
defines: CRYPTOCv5 CERTCv5
cflags: -Wno-parentheses -Wno-uninitialized
sub: ion_iprouting_cmd_registry
{
  context: os==ion
  contains:
    iprouting_cmn/src/ion_iprouting_cmd_registry.c
}
sub: iprouting_blob
{
  contains:
    iprouting_cmn/src/ip_routing.c
    iprouting_cmn/src/ip_stats.c
    iprouting_cmn/src/iprouting_actions.c
    iprouting_cmn/src/iprouting_chain.c
    iprouting_cmn/src/iprouting_debug.c
    iprouting_cmn/src/iprouting_init_blob.c
    iprouting_cmn/src/iprouting_setup.c
    iprouting_cmn/src/protofltr_debug.c
    iprouting_cmn/src/route3_blob.c
    iprouting_cmn/src/routemap_debug.c
    iprouting_cmn/src/router_af_chain.c
    iprouting_cmn/src/router_topology_chain.c
    iprouting_cmn/src/routing_context_chain.c
}
sub: iprouting_cmn
{
  contains:
    iprouting_cmn/include/msg_iproute.rc
    iprouting_cmn/src/iprouting_cmn.c
}
sub: iprouting_common_blob
{
  contains:
    iprouting_cmn/src/ip_prefixlist_chain.c

```

```

    iprouting_cmn/src/policylist_blob.c
    iprouting_cmn/src/route_map_blob.c
    iprouting_cmn/src/routemap_track.c
}
sub: iprouting_common_ionblob
{
    context: os==ion
    contains:
        iprouting_cmn/src/ip_prefixlist_ionblob.c
        iprouting_cmn/src/route_map_ionblob.c
}
sub: iprouting_common_ionized
{
    context: os==ion
    contains:
        iprouting_cmn/src/ip_prefixlist_ionized.c
        iprouting_cmn/src/policylist_ionized.c
        iprouting_cmn/src/route_map_ionized.c
}
sub: iprouting_common_misc
{
    contains:
        iprouting_cmn/src/ip_prefixlist.c
        iprouting_cmn/src/msg_routemap.c
        iprouting_cmn/src/policylist.c
        iprouting_cmn/src/route_map.c
        iprouting_cmn/src/routetag_list.c
}
sub: iprouting_common_nbcmn
{
    contains:
        iprouting_cmn/src/route_map_nbcmn.c
}
sub: iprouting_common_nonblob
{
    contains:
        iprouting_cmn/src/ip_prefixlist_ios.c
        iprouting_cmn/src/policylist_ios.c
}
sub: iprouting_init_ios
{
    contains:
        iprouting_cmn/src/iprouting_init_ios.c
}
sub: iprouting_ionblob
{
    context: os==ion
    contains:

```

```

    iprouting_cmn/src/iprouting_init_ionblob.c
    iprouting_cmn/src/iprouting_parse_blob.c
    iprouting_cmn/src/router_af_parse_blob.c
}
sub: iprouting_ionized
{
    context: os==ion
    contains:
        iprouting_cmn/src/iprouting_init_ionized.c
        iprouting_cmn/src/route3_ionized.c
}
sub: iprouting_misc
{
    contains:
        iprouting_cmn/src/routemap_api.c
        iprouting_cmn/src/routemap_api_util.c
        iprouting_cmn/src/routemap_internal.c
}
sub: iprouting_nonblob
{
    contains:
        iprouting_cmn/src/iprib_api_svr.c
        iprouting_cmn/src/iprouting_init.c
        iprouting_cmn/src/iprouting_stats.c
        iprouting_cmn/src/protofltr.c
        iprouting_cmn/src/route1.c
        iprouting_cmn/src/route2.c
        iprouting_cmn/src/route3.c
        iprouting_cmn/src/router_af_parse.c
        iprouting_cmn/src/router_topology_parse.c
}
sub: iprouting_parser
{
    contains:
        iprouting_cmn/src/iprouting_parser_linkpoints.c
}
sub: iprouting_registry
{
    contains:
        iprouting_cmn/src/iprouting_registry.c
}
sub: ipv4_subsys
{
    contains:
        iprouting_cmn/src/ipv4_subsys.c
}
sub: lfafrf_registry
{

```

```

contains:
    iprouting_cmn/src/lfafrr_registry.c
}
sub: route_map_globs
{
contains:
    iprouting_cmn/src/route_map_globs.c
}
sub: route_map_registry
{
contains:
    iprouting_cmn/src/route_map_registry.c
}
sub: routemap_common_blob
{
contains:
    iprouting_cmn/src/routemap_ios_blob.c
}
sub: routemap_common_ionized
{
context: os==ion
contains:
    iprouting_cmn/src/route_map_http_ion.c
}
sub: routemap_common_nonblob
{
contains:
    iprouting_cmn/src/routemap_ios.c
    iprouting_cmn/src/routemap_track_ios.c
}
sub: routemap_ios_chain
{
contains:
    iprouting_cmn/src/routemap_ios_chain.c
}
sub: routemap_lc_ipc
{
context: os==ios
contains:
    iprouting_cmn/src/route_map_globs.c
    iprouting_cmn/src/routemap_api.c
    iprouting_cmn/src/routemap_api_util.c
    iprouting_cmn/src/routemap_debug.c
    iprouting_cmn/src/routemap_internal.c
    iprouting_cmn/src/routemap_ios_chain.c
    iprouting_cmn/src/routetag_list.c
}
sub: router_af_actions_registry

```

```

{
  contains:
    iprouting_cmn/src/router_af_actions_registry.c
}
sub: router_topology_registry
{
  contains:
    iprouting_cmn/src/router_topology_registry.c
}
sub: routing_context
{
  contains:
    iprouting_cmn/src/routing_context.c
}
sub: routing_context_registry
{
  contains:
    iprouting_cmn/src/routing_context_registry.c
}
}
# end of group: iprouting_cmn

```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/content.lst

No license file was found, but licenses were detected in source scan.

```

/*
*-----
* cfg_router_auto_summary.h
*
* October 1993
*
* Copyright (c) 1993-1996, 1999-2009 by cisco Systems, Inc.
* All rights reserved.
*
* Supports the router subcommand "auto-summary". Configures auto aggregation
* of routing information to the network number level.
*-----
*/

```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/cfg\_router\_auto\_summary.h

No license file was found, but licenses were detected in source scan.

```

/* $Id: cfg_routemap_set_policy.h,v 3.3.52.1 1996/05/21 09:53:12 thille Exp $
* $Source: /release/112/cvs/Xsys/iprouting/cfg_routemap_set_policy.h,v $
*-----

```

```

* cfg_routemap_set_policy.h -- Policy specific route map clauses
*
* Mar 1995 Tony Li
*
* Copyright (c) 1995-1996, 2000, 2002, 2004, 2007-2009 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log: cfg_routemap_set_policy.h,v $
* Revision 3.3.52.1 1996/05/21 09:53:12 thille
* CSCdi51599: multiple /interface/ literals bloat code.
* Branch: California_branch
* Save another 392 bytes by doing away with duplicate literals.
*
* Revision 3.3 1995/11/28 19:50:39 widmer
* CSCdi44251: Replace Ifelse(csb->in_help)/Eval with Func
*
* Revision 3.2 1995/11/17 17:31:55 hampton
* Remove old entries from the RCS header logs.
*
* Revision 3.1 1995/11/09 12:05:18 shaker
* Bump version numbers from 2.x to 3.x.
*
* Revision 2.3 1995/06/21 18:16:03 widmer
* CSCdi36227: Fix parse chain alternates
*
* Revision 2.2 1995/06/15 15:18:47 widmer
* CSCdi35889: parser transition structures should be static
*
* Revision 2.1 1995/06/07 21:05:42 hampton
* Bump version numbers from 1.x to 2.x.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/include/cfg_routemap_set_policy.h
No license file was found, but licenses were detected in source scan.

```

```

/*
*-----
* exec_debug_protofltr.h
*
* Jan 2006, Mercia Zheng
*
* Copyright (c) 2005-2009 by cisco Systems, Inc.
*

```

\* All Rights Reserved

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/exec\_debug\_protofltr.h

No license file was found, but licenses were detected in source scan.

/\* \$Id\$

\* \$Source\$

\*-----

\* route1.c -- Routing Support: Common Routines

\*

\* 22-March-1986, Kirk Lougheed

\*

\* Copyright (c) 1986-2020 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\* \$Log\$

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/route1.c

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* route\_map\_registry.h -- Registration Points for Route Maps support in ION

\*

\* July 2001, Siva Yaragalla

\*

\* Copyright (c) 2001, 2003, 2005, 2007-2008 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/route\_map\_registry.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* routemap\_track\_ios.c -- Route map support for tracking

\*

Functions shared by rp & vip.

\*

\* March 2003 Shyan Wignarajah

\*  
\* Copyright (c) 2003-2010, 2013-2014, 2016 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/routemap\_track\_ios.c  
No license file was found, but licenses were detected in source scan.

/\*  
\*-----  
\* IP routing table flap statistics collection facility.  
\*  
\* Nov 1996, Ravi Chandra  
\*  
\* Copyright (c) 1995-1998, 2001-2005, 2007-2010 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/iprouting\_stats.c  
No license file was found, but licenses were detected in source scan.

/\* \$Id: rouource\_commande\_map.c,v 3.4.10.11 1996/07/09 07:35:58 dawnli Exp \$  
\* \$Source: /release/112/cvs/Xsys/iprouting/route\_map.c,v \$  
\*-----  
\* route\_map.c -- Route map support routines.  
\*  
\* 23-January-1993  
\*  
\* Copyright (c) 1986-2020 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\* \$Log: route\_map.c,v \$  
\* Revision 3.4.10.11 1996/07/09 07:35:58 dawnli  
\* CSCdi57006: route-map in configuration are stored/displayed in reverse  
\* order  
\* Branch: California\_branch  
\*  
\* Revision 3.4.10.10 1996/06/28 23:19:51 hampton  
\* Remove gratuitous casting. [CSCdi61655]  
\* Branch: California\_branch  
\*  
\* Revision 3.4.10.9 1996/06/05 08:27:06 rchandra  
\* CSCdi59547: Routemap: %SYS-4-REGEXP: NULL string parameter error  
\* Branch: California\_branch

- \* - do not pass null path to route\_map\_match\_aspath
- \*
- \* Revision 3.4.10.8 1996/06/03 23:24:12 ahh
- \* CSCdi59119: IP: NAT should support named access-lists
- \* And extended access-lists and non-contiguous address pools.
- \* Branch: California\_branch
- \*
- \* Revision 3.4.10.7 1996/05/04 01:22:39 wilber
- \* Branch: California\_branch
- \*
- \* Constrained Multicast Flooding
- \* - Define MOSPF hello option bit.
- \*
- \* Name Access List
- \*
- \* Revision 3.4.10.6 1996/04/16 19:02:21 rchandra
- \* CSCdi54830: IP features commit
- \* Branch: California\_branch
- \*
- \* Revision 3.4.10.5 1996/04/05 03:46:40 rchandra
- \* CSCdi53755: BGP: flap dampening settings not flexible enough
- \* Branch: California\_branch
- \* - add route-map support to set flap dampening parameters
- \*
- \* Revision 3.4.10.4 1996/04/02 07:29:30 dkatz
- \* CSCdi52277: Redistribution metric problems with IGRP/EIGRP
- \* Branch: California\_branch
- \* Always store canonical metrics scaled for IGRP, and make EIGRP do
- \* its own scaling internally. Get the scaling right in all three
- \* places.
- \*
- \* Revision 3.4.10.3 1996/03/28 23:59:18 rchandra
- \* CSCdi52098: BGP: exact keyword not accepted by route-map in community
- \* match
- \* Branch: California\_branch
- \* - fix my silly bug in handling exact community matching
- \* - limit the range of valid community to 0xFFFF0000
- \* - fix a cosmetic bug in show ip community-list
- \*
- \* Revision 3.4.10.2 1996/03/28 22:28:25 rchandra
- \* CSCdi52880: BGP: generate error message for unsupported route-map
- \* options
- \* Branch: California\_branch
- \* - generate error message when unsupported route-map option is used
- \* - tread confederation EBGp neighbors similar to internal neighbors in
- \* best path selection
- \* - fix the bug in bgp\_compare\_med, so that during MED comparison,
- \* confederation information is skipped properly

- \* - confederation EBGp paths should be inserted into the IP table with
- \* internal distance
- \* - do not consider common-AS neighbors as confederation neighbors
- \* - during 'clear ip bgp dampening' avoid skipping paths
- \* - undo the patch to the radix version walker
- \*
- \* Revision 3.4.10.1 1996/03/18 20:29:32 gstovall
- \* Branch: California\_branch
- \* Elvis has left the building. He headed out to California, and took the
- \* port ready changes with him.
- \*
- \* Revision 3.2.26.3 1996/03/16 06:58:25 gstovall
- \* Branch: DeadKingOnAThrone\_branch
- \* Make the king aware of V111\_1\_3.
- \*
- \* Revision 3.2.26.2 1996/03/07 09:50:41 mdb
- \* Branch: DeadKingOnAThrone\_branch
- \* cisco and ANSI/POSIX libraries.
- \*
- \* Revision 3.2.26.1 1996/02/20 01:04:27 dstine
- \* Branch: DeadKingOnAThrone\_branch
- \* Sync from DeadKingOnAThrone\_baseline\_960122 to
- \* DeadKingOnAThrone\_baseline\_960213
- \*
- \* Revision 3.4 1996/02/24 02:01:55 pst
- \* CSCdi49774: modularize regexp's for bgp (part 3)
- \*
- \* Revision 3.3 1996/02/01 06:06:17 hampton
- \* Migrate files out of the parser directory. [CSCdi47717]
- \* Step 2: Change all files which reference the moved parser files to
- \* point to their new locations.
- \*
- \* Revision 3.2 1995/11/17 17:37:13 hampton
- \* Remove old entries from the RCS header logs.
- \*
- \* Revision 3.1 1995/11/09 12:10:35 shaker
- \* Bump version numbers from 2.x to 3.x.
- \*
- \* Revision 2.6 1995/09/25 08:31:19 tli
- \* CSCdi40960: ISP jumbo patch 2
- \*
- \* Revision 2.5 1995/07/06 23:12:39 rchandra
- \* CSCdi36759: BGP : Add conditional per neighbor default generation
- \* - add 'neighbor <x.x.x.x> default-originate route-map <tag>' command.
- \*
- \* Revision 2.4 1995/06/23 14:26:05 widmer
- \* CSCdi36318: multiple route-map commands are not accepted
- \* Fix route-map command NV generation

```

*
* Revision 2.3 1995/06/15 15:18:52 widmer
* CSCdi35889: parser transition structures should be static
*
* Revision 2.2 1995/06/08 08:59:19 tli
* CSCdi35274: route-map test-1 crashes IOS
* - If a route map does not set any routing information, it should be
* equivalent to not having policy routed the packet.
* - "match length" clauses were having their flag stepped on because the
* flag update routine didn't know about the clause.
*
* Revision 2.1 1995/06/07 21:10:53 hampton
* Bump version numbers from 1.x to 2.x.

```

```

*-----
* $Endlog$
*/

```

Found in path(s):  
 \*/opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/route\_map.c  
 No license file was found, but licenses were detected in source scan.

```

/* $Id$
* $Source$
*-----
* cfg_routemap_set_ip.h -- IP specific route-map clauses
*
* Mar 1995 Tony Li
*
* Copyright (c) 1995-1998, 2000-2004, 2006-2013, 2016, 2019 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
*/

```

Found in path(s):  
 \*/opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/cfg\_routemap\_set\_ip.h  
 No license file was found, but licenses were detected in source scan.

```

/* $Id$
* $Source$
*-----
* Registry for IP FRR infrastructure
*
* July 6, 2010 Ahmed Bashandy
*

```

\* Copyright (c) 2001-2003, 2005, 2007-2008, 2010 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\* \$Log\$

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/lfafrr\_registry.h

No license file was found, but licenses were detected in source scan.

/\*-----

\* router\_af\_parse.h

\*

\* Route Address Family parser functions declarations.

\*

\* May 2002, Victor Kamensky

\*

\* Copyright (c) 2002, 2007-2008 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/router\_af\_parse.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* iprouting\_parser\_macros.h - Routing macros moved out of

\* sys/parser/macros.h

\*

\* November, 2004

\*

\* Copyright (c) 2004-2011, 2013, 2015, 2018 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-

tar/iprouting\_cmn/include/iprouting\_parser\_macros.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* routemap\_debug.c -- Routemap debugging support

\*

\* July 1998, Wilber Su

\*

\* Copyright (c) 1998, 2004, 2006-2008 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/routemap\_debug.c

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* route\_map\_ionblob.c -- Route Maps support for ION Blob

\*

\* October 2001, Siva Yaragalla

\*

\* Copyright (c) 2001-2009, 2011, 2013, 2020 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/route\_map\_ionblob.c

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* routemap\_ios.c -- Route map support routines that can be shared

\* by RP and VIP/LC

\*

\* July 1998 Wilber Su

\*

\* Copyright (c) 1998-2020 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/routemap\_ios.c

No license file was found, but licenses were detected in source scan.

/\*-----

\* route\_map\_globs.c

\*

\* This file has the route map globals common to blob (for lc images)

```
* and routing process(for routing images).
*
* Copyright (c) 2002-2005, 2007-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/route_map_globs.c
No license file was found, but licenses were detected in source scan.
```

```
/*
*-----
* topo_aware.h - Define multi-topology awareness
*
* March 2005, Les Ginsberg
*
* Copyright (c) 2005, 2007-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/include/topo_aware.h
No license file was found, but licenses were detected in source scan.
```

```
/*
*-----
* CFG_ROUTER_TOPO_REDISTRIBUTE.H
*
* October 2004, Lisa Z Xu
*
* Copied from and modified based on cfg_router_redistribute.h.
* Warning:
* If you modify this file, please also check cfg_router_redistribute.h
* to see if the changes apply to config-router mode as well.
*
* Copyright (c) 2004-2011, 2018-2021 by Cisco Systems, Inc.
* All Rights Reserved
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/src/cfg_router_topo_redistribute.h
No license file was found, but licenses were detected in source scan.
```

```
/* $Id: cfg_router_distribute.h,v 3.3.50.2.6.1 1996/09/12 19:08:19 perry1 Exp $
```

```

* $Source: /release/112/cvs/Xsys/iprouting/cfg_router_distribute.h,v $
*-----
* CFG_ROUTER_DISTRIBUTE.H
*
* Copyright (c) 1992-2001, 2003-2012, 2015-2016, 2018 by cisco Systems, Inc.
* All Rights Reserved
*-----
* $Log: cfg_router_distribute.h,v $
* Revision 3.3.50.2.6.1 1996/09/12 19:08:19 perryl
* Branch: Att-branch
* Allow virtual-access interface for distribute-list
*
* Revision 3.3.50.2 1996/08/12 16:03:44 widmer
* CSCdi65725: Create Eolns macro that defaults csb->which to 0
* Branch: California_branch
* Add Eolns and Nvgenns macro that default csb->which to 0
* Remove hidden keyword help strings
*
* Revision 3.3.50.1 1996/05/04 01:21:18 wilber
* Branch: California_branch
*
* Constrained Multicast Flooding
* - Define MOSPF hello option bit.
*
* Name Access List
*
* Revision 3.3 1995/12/04 06:47:13 tli
* CSCdi43559: IP: distribute-list 101 out should work
*
* Revision 3.2 1995/11/17 17:32:10 hampton
* Remove old entries from the RCS header logs.
*
* Revision 3.1 1995/11/09 12:05:34 shaker
* Bump version numbers from 2.x to 3.x.
*
* Revision 2.1 1995/07/01 12:15:52 tli
* CSCdi36508: Rationalize parser file placement, part I
* Rationalize iprouting
*
* Revision 2.1 1995/06/07 22:12:36 hampton
* Bump version numbers from 1.x to 2.x.
*-----
* $Endlog$
*/

```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
```

tar/iprouting\_cmn/internal\_inc/cfg\_router\_distribute.h

No license file was found, but licenses were detected in source scan.

```
/*-----  
* ip_stats.c - IP for topology aware stats  
*  
* April 2006, Jonsky Hsu  
*  
* Copyright (c) 2006-2010 by cisco Systems, Inc.  
* All rights reserved.  
*  
*-----  
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/ip\_stats.c

No license file was found, but licenses were detected in source scan.

```
/* $Id$  
* $Source$  
*-----  
*  
* parser_defs_route_map.h  
*  
* Constant definition for route-map command and associated subcommands.  
*  
* Copyright (c) 1985-1996, 1999, 2001, 2004-2005, 2007-2008, 2011, 2014-2015 by cisco Systems, Inc.  
* All rights reserved.  
*-----  
* $Log$  
*-----  
* $Endlog$  
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/parser\_defs\_route\_map.h

No license file was found, but licenses were detected in source scan.

```
/*  
*-----  
* protofltr.h  
*  
* Routing protocol filter manager Public API definitions  
*  
* Jan 2006, Mercia Zheng  
*  
* Copyright (c) 2005-2011, 2020 by cisco Systems, Inc.  
* All rights reserved.
```

\*-----  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/protofltr.h

No license file was found, but licenses were detected in source scan.

/\*-----

\* router\_af\_actions.h

\*

\* Router Address Family action declarations.

\*

\* May 2002, Victor Kamensky

\*

\* Copyright (c) 2002, 2004-2005, 2007-2008 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/router\_af\_actions.h

No license file was found, but licenses were detected in source scan.

/\*\$Id: cfg\_router\_maximum-paths.h,v 3.2 1995/11/17 17:32:11 hampton Exp \$

\* \$Source: /swt/cherf.111/ios/sys/iprouting/cfg\_router\_maximum-paths.h,v \$

\*-----

\* cfg\_router\_maximum-paths.h

\*

\* <July> 1994 rchandra

\*

\* Copyright (c) 1994-2016, 2019 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\* \$Log: cfg\_router\_maximum-paths.h,v \$

\* Revision 3.2 1995/11/17 17:32:11 hampton

\* Remove old entries from the RCS header logs.

\*

\* Revision 3.1 1995/11/09 12:05:39 shaker

\* Bump version numbers from 2.x to 3.x.

\*

\* Revision 2.1 1995/07/01 12:15:53 tli

\* CSCdi36508: Rationalize parser file placement, part I

\* Rationalize iprouting

\*

\* Revision 2.1 1995/06/07 22:12:44 hampton

\* Bump version numbers from 1.x to 2.x.

\*

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/cfg\_router\_maximum-paths.h

No license file was found, but licenses were detected in source scan.

/\* \$Id\$

\* \$Source\$

\*-----

\* cfg\_router\_validate.h

\*

\* Nob to allow user to decide whether or not system should sanity check

\* source IP address of incoming routing updates.

\*

\* March 1994, Bruce Cole

\*

\* Copyright (c) 1994-2002, 2007-2008 by cisco Systems, Inc.

\* All rights reserved.

\*

\*-----

\* \$Log\$

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/cfg\_router\_validate.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* routemap\_debug.h -- Routemap debugging support

\*

\* July 1998, Wilber Su

\*

\* Copyright (c) 1998, 2004, 2007-2008 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/routemap\_debug.h

No license file was found, but licenses were detected in source scan.

/\* \$Id: exec\_show\_route-map.h,v 3.2.60.1 1996/08/12 16:04:13 widmer Exp \$

\* \$Source: /release/112/cvs/Xsys/iprouting/exec\_show\_route-map.h,v \$

```
*-----  
* exec_show_route-map.h  
*  
* Copyright (c) 1993-1996, 1998, 2003-2008, 2011 by cisco Systems, Inc.  
* All rights reserved.  
*  
* Command parsing chain for "show route-map".  
*-----
```

```
* $Log: exec_show_route-map.h,v $  
* Revision 3.2.60.1 1996/08/12 16:04:13 widmer  
* CSCdi65725: Create Eolns macro that defaults csb->which to 0  
* Branch: California_branch  
* Add Eolns and Nvgenns macro that default csb->which to 0  
* Remove hidden keyword help strings  
*  
* Revision 3.2 1995/11/17 17:33:31 hampton  
* Remove old entries from the RCS header logs.  
*  
* Revision 3.1 1995/11/09 12:07:29 shaker  
* Bump version numbers from 2.x to 3.x.  
*  
* Revision 2.1 1995/07/01 12:16:22 tli  
* CSCdi36508: Rationalize parser file placement, part I  
* Rationalize iprouting  
*  
* Revision 2.1 1995/06/07 22:25:36 hampton  
* Bump version numbers from 1.x to 2.x.  
*  
*-----  
* $Endlog$  
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/include/exec_show_route-map.h  
No license file was found, but licenses were detected in source scan.
```

```
/*-----  
* route_map_def.h - Route Map Tyep Definition  
*  
* Feb, 2006 Allen Hu  
*  
* Copyright (c) 2006-2008, 2017 by cisco Systems, Inc.  
* All rights reserved.  
*-----  
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/include/route_map_def.h
```

No license file was found, but licenses were detected in source scan.

```
/* $Id$
 * $Source$
 *-----
 * iprouting_parser.h -- IP routing parser API header file
 *
 * April - 2007, Selva Subramanian
 *
 * Copyright (c) 2001-2009 by cisco Systems, Inc.
 * All rights reserved.
 *-----
 */
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/iprouting\_parser.h

No license file was found, but licenses were detected in source scan.

```
/*
 * P A R S E R _ D E F S _ R O U T E R . H
 *
 * $Id: parser_defs_router.h,v 3.1.40.2 1996/07/30 06:56:06 rchandra Exp $
 * $Source: /release/112/cvs/Xsys/iprouting/parser_defs_router.h,v $
 *
 * Copyright (c) 1985-2020 by cisco Systems, Inc.
 * All rights reserved.
 *-----
 * $Log: parser_defs_router.h,v $
 * Revision 3.1.40.2 1996/07/30 06:56:06 rchandra
 * CSCdi64489: BGP: private-AS number cannot be removed from AS-path
 * Branch: California_branch
 * - add 'neighbor x.x.x.x remove-private-AS' command.
 * - add 'inbound' keyword to 'neighbor x.x.x.x soft-reconfiguration'
 *   command (CSCdi64487)
 *
 * Revision 3.1.40.1 1996/04/16 19:02:10 rchandra
 * CSCdi54830: IP features commit
 * Branch: California_branch
 *
 * Revision 3.1 1996/02/01 04:58:48 hampton
 * Migrate files out of the parser directory. [CSCdi47717]
 * Step 1: Create copies of the files to be moved in their new location.
 *
 * Revision 3.2 1995/11/17 18:52:17 hampton
 * Remove old entries from the RCS header logs.
 *
 * Revision 3.1 1995/11/09 12:56:05 shaker
```

```

* Bump version numbers from 2.x to 3.x.
*
* Revision 2.4 1995/08/28 21:14:47 rchandra
* CSCdi39436: BGP : Allow conditional unsuppression of suppressed routes
* - add 'neighbor x.x.x.x unsuppress-map <map>' command
*
* Revision 2.3 1995/07/06 23:11:21 rchandra
* CSCdi36759: BGP : Add conditional per neighbor default generation
* - add 'neighbor <x.x.x.x> default-originate route-map <tag>' command.
*
* Revision 2.2 1995/06/30 20:24:40 rchandra
* CSCdi36620: BGP requires IBGP neighbors to be fully meshed
*
* Revision 2.1 1995/06/07 22:31:08 hampton
* Bump version numbers from 1.x to 2.x.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/include/parser_defs_router.h
No license file was found, but licenses were detected in source scan.

```

```

/* $Id: exec_clear_ip_prefixlist.h,v 3.1.2.1 1997/12/17 21:36:58 enkechen Exp $
* $Source: /release/111/cvs/Xsys/ip/exec_clear_ip_prefixlist.h,v $
*-----
* exec_clear_ip_prefixlist.h
*
* July 1997, Enke Chen
*
* Copyright (c) 1995-1998, 2000-2001, 2007-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log: exec_clear_ip_prefixlist.h,v $
* Revision 3.1.2.1 1997/12/17 21:36:58 enkechen
* CSCdj61356: Prefix-list - facility for efficient route filtering
* Branch: FIB_branch
*
* Revision 3.1 1997/12/17 01:46:34 enkechen
* Start with the new file.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/exec_clear_ip_prefixlist.h

```

No license file was found, but licenses were detected in source scan.

```
#-----  
# iproutingcmn_router_cmd.run-doxygen -- Run-doxygen Configuration File for  
#       IP Routing Common Router Commands  
#  
# December 2007, Chi Iong Ansjory  
#  
# Copyright (c) 2007-2008, 2012 by cisco Systems, Inc.  
# All rights reserved.  
#-----  
  
#-----  
# RUN-DOXYGEN CONFIG FILE  
#  
# The variables defined in this file are used by the run-doxygen script to  
# execute doxygen and generate API documentation.  
# This file will be sourced by a bourne shell script (/bin/sh)  
# and so must follow the bourne shell script syntax  
#  
# This default configuration file is setup to work for the XOS project.  
# If you want to reuse it, you must customize the properties below in order to  
# make it work for your project.  
#  
# For more help contact doxygen-trolls@cisco.com  
#-----  
  
# The PROJECT_NAME variable is a single word (or a sequence of words surrounded  
# by quotes) that should identify the project.  
  
PROJECT_NAME=IPROUTINGCMN_ROUTER_CMD  
  
# The PROJECT_NUMBER tag can be used to enter a project or revision number.  
# This could be handy for archiving the generated documentation or  
# if some version control system is used.  
  
PROJECT_NUMBER=0.1.0.2  
  
# The latest version of doxygen can be picked on the shared storage  
# of the XOS/Component Framework team  
# This executable can only run on linux 2.6 !!!!  
#DOXYGEN=/auto/ios_comp/tools/doxygen-1.5.4/bin/doxygen  
# Change this sanity check when doxygen will be supported for other hosts  
#host=`uname -s`  
#host_version=`uname -r`  
#if [ $host != "Linux" ]; then  
#echo "Error: this wrapper can only be executed from Linux"  
#exit
```

```

#fi
#if [ $host_version < "2.6" ]; then
    #echo "Error: this wrapper requires Linux 2.6 or higher"
    #exit
#fi
#
#
# The location of the latex suite, this is needed only if the PDF
# generation option is used (-f)
# This binary is also only available on linux 2.6
#
#LATEX_PATH=/auto/ios_comp/tools/tetex/bin/i686-pc-linux-gnu
#LATEX_PATH=/usr/bin
#
#-----

# Use this variable to specify one or more wildcard pattern (like *.cpp
# and *.h) to filter out the source-files in the directories.

FILE_PATTERNS="ip_stats.h iprouting_debug.h router_af_actions_registry.regh"

# Exclude all internal defines (defines used to guard against multiple
# inclusions of the same header file)
EXCLUDE_SYMBOLS="__*_H__ reg_add* reg_delete* service_* reg_used* \
_reg_add* reg_inv_* reg_svr* _registry_* registry* REG_ELOG *_GEN_ID \
*_DEFINED *_argt *_res \
bgp* ospf* debug* route_debug* igrp* ipcache* ipproc* ip_mobile* netred* \
iprouting_acl DEBUG_ROUTING_PROT MISC_DEBUG_VARS \
DEBUG_ROUTING* ALTP_BGF* __DEBUG_FLAGS* \
iprouting_debug_init iprouting_set_debug_array iprouting6_debug_list_command \
iprouting_debug_list_command iprouting_nsap_debug_list_command \
iprouting_debug_acl_notify \
reg_invoke_address_family_action_get_entries \
reg_invoke_address_family_action_nvgen_exit"

# When all symbols in a project start with a common prefix, by default all
# symbols will be put under the same header in the alphabetical index.
# The IGNORE_PREFIX tag can be used to specify one or more prefixes that
# should be ignored while generating the index headers. This will allow
# to spread the symbol index more evenly.

IGNORE_PREFIX="xos_XOS_"

# If the EXTRACT_ALL tag is set to YES doxygen will assume all entities in
# documentation are documented, even if no documentation was available.
# Private class members and static file members will be hidden unless
# the EXTRACT_PRIVATE and EXTRACT_STATIC tags are set to YES

```

EXTRACT\_ALL=YES

# If the EXTRACT\_STATIC tag is set to YES all static members of a file  
# will be included in the documentation.

EXTRACT\_STATIC=YES

# If the HIDE\_UNDOC\_MEMBERS tag is set to YES, Doxygen will hide all  
# undocumented members of documented classes, files or namespaces.  
# If set to NO (the default) these members will be included in the  
# various overviews, but no documentation section is generated.  
# This option has no effect if EXTRACT\_ALL is enabled.

HIDE\_UNDOC\_MEMBERS=NO

#-----

# VARIABLES RELATED TO DOXYGEN OUTPUT

# This is the root of the destination folder (local variable)  
# Note that the archive area and the workspace area do not have to share the  
# same destination root.

DST\_BASE=/auto/ios\_comp/iprouting\_cmn

# This is the URL through which the DST\_BASE folder can be accessed  
# from the intranet. This URL depends on the location of the storage.  
# Contact IT to find out the correct URL.

# (Local variable)

URL\_DST\_BASE=http://sjc-filer29a-web/projects/ios\_comp/iprouting\_cmn

# ---- WORKSPACE AREA

# Relative path (to DST\_BASE) - used by OUTPUT\_WORKSPACE (local variable)

WORKSPACE\_FOLDER=api-docs

# This is the full pathame of the root under which all normal output folders will be located

OUTPUT\_WORKSPACE=\$DST\_BASE/\$WORKSPACE\_FOLDER

# This is the URL of the above OUTPUT\_WORKSPACE directory

# Only used for displaying where to access the documentation after the doxygen run

URL\_WORKSPACE=\$URL\_DST\_BASE/\$WORKSPACE\_FOLDER

# ---- ARCHIVE AREA

# Relative path (to DST\_BASE) - used by OUTPUT\_ARCHIVE (local variable)

ARCHIVE\_FOLDER=archive/xoslib

# This is the full pathame of the root under which all archive output folders will be located

OUTPUT\_ARCHIVE=\$DST\_BASE/\$ARCHIVE\_FOLDER

# This is the URL of the above OUTPUT\_WORKSPACE directory

```

# Only used for displaying where to access the documentation after the doxygen run
URL_ARCHIVE=$URL_DST_BASE/$ARCHIVE_FOLDER

#-----
# VARIABLES RELATED TO DOXYGEN INPUT

# This is the root of the API source code (local variable)
SRC_BASE=/vob/cisco.comp/routing/iprouting_cmn

# This is the location of all the API public header files (or directories)
# In XOS all public header files are located in one directory
API_PUBLIC="$SRC_BASE/include $SRC_BASE/include/reg"
#API_PUBLIC="$SRC_BASE/include"

# This is the location of all the API source code, used with option -all only
# if you want to generate doxygen documentation for the source code
# (only useful for internal code review)
# Do not put the content of API_PUBLIC as it is added automatically
API_ALL="$SRC_BASE/shared $SRC_BASE/ios $SRC_BASE/iox $SRC_BASE/linux"

# The EXAMPLE_PATH tag can be used to specify one or more files or
# directories that contain example code fragments that are included (see
# the @example command).

EXAMPLE_PATH=$SRC_BASE/test/src

# The IMAGE_PATH tag can be used to specify one or more
# directories that contain image that are included in the documentation (see
# the @image command).
# This is only used/relevant if you have images in your API documentation.

IMAGE_PATH=$DST_BASE/api-docs-images

Found in path(s):
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/docs/iproutingcmn_router_cmd.run-doxygen
No license file was found, but licenses were detected in source scan.

/* $Id$
* $Source$
*-----
* iprouting_commands.h -- Support for extern command function decleration
*
* September 2001, Rashmi Shrivastava
*
* Copyright (c) 2001-2010, 2013, 2016 by cisco Systems, Inc.
* All rights reserved.
*-----

```

```
* $Log$
*-----
* $Endlog$
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/internal_inc/iprouting_commands.h
```

No license file was found, but licenses were detected in source scan.

```
/* $Id$
* $Source$
*-----
* iprouting_blob_undef.c -- undefined symbols from blob when
* routing subsystems are pulled out
*
* October, 2002 Phil Winterfield
*
* Copyright (c) 2001-2005, 2007-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/iprouting_blob_undef.c
```

No license file was found, but licenses were detected in source scan.

```
/* $Id: ip_prefixlist.c,v 1.1 2011/02/02 21:47:40 vkoshi Exp vkoshi $
* $Source: /view/vkoshi-
comp_routing_rel5.rel4_1_1_19.2460.ss.comp1.port/vob/ss.comp1/routing/iprouting_cmn/src/ip_prefixlist.c,v $
*-----
* Generic prefix list support.
*
* June 1997, Enke Chen
*
* Copyright (c) 1997-2012, 2016, 2020 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log: ip_prefixlist.c,v $
* Revision 1.1 2011/02/02 21:47:40 vkoshi
* checkin by port_commit
*
* Revision 3.1.2.4 1998/03/20 17:03:32 enkechen
* CSCdj88889: Prefix-list: sho ip prefix-list summ does not pause
* Branch: FIB_branch
```

```

*
* Revision 3.1.2.3 1998/02/23 19:43:44 enkechen
* CSCdj75270: Prefix-list: optimization for downloading large lists
* Branch: FIB_branch
*
* Revision 3.1.2.2 1998/02/11 01:55:32 soma
* Merge FIB_L3 branch into FIB branch
*
* Revision 3.1.2.1.8.1 1998/01/29 00:59:02 enkechen
* CSCdj77190: Prefix-list: mishandling of long prefix-list names
* Branch: FIB_L3_branch
*
* Revision 3.1.2.1 1997/12/17 21:37:00 enkechen
* CSCdj61356: Prefix-list - facility for efficient route filtering
* Branch: FIB_branch
*
* Revision 3.1 1997/12/17 01:46:33 enkechen
* Start with the new file.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/ip_prefixlist.c

```

No license file was found, but licenses were detected in source scan.

```

/* $Id: cfg_router_network.h,v 3.2.60.1 1996/08/12 16:03:46 widmer Exp $
* $Source: /release/112/cvs/Xsys/iprouting/cfg_router_network.h,v $
*-----
* C F G _ R O U T E R _ N E T W O R K . H
*
* Copyright (c) 1992-2002, 2004-2009, 2013, 2018 by cisco Systems, Inc.
* All Rights Reserved
*-----
* $Log: cfg_router_network.h,v $
* Revision 3.2.60.1 1996/08/12 16:03:46 widmer
* CSCdi65725: Create Eolns macro that defaults csb->which to 0
* Branch: California_branch
* Add Eolns and Nvgenns macro that default csb->which to 0
* Remove hidden keyword help strings
*
* Revision 3.2 1995/11/17 17:32:18 hampton
* Remove old entries from the RCS header logs.
*
* Revision 3.1 1995/11/09 12:05:49 shaker
* Bump version numbers from 2.x to 3.x.
*

```

```

* Revision 2.2 1995/09/25 08:30:52 tli
* CSCdi40960: ISP jumbo patch 2
*
* Revision 2.1 1995/07/01 12:15:58 tli
* CSCdi36508: Rationalize parser file placement, part I
* Rationalize iprouting
*
* Revision 2.1 1995/06/07 22:12:56 hampton
* Bump version numbers from 1.x to 2.x.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/internal_inc/cfg_router_network.h
No license file was found, but licenses were detected in source scan.

```

```

/* $Id: cfg_router_redistribute.h,v 3.4.20.3 1996/08/12 16:03:50 widmer Exp $
* $Source: /release/112/cvs/Xsys/iprouting/cfg_router_redistribute.h,v $
*-----
* C F G _ R O U T E R _ R E D I S T R I B U T E . H

```

```

* Warning:
* If you modify this file, please also check cfg_router_topo_redistribute.h
* to see if the changes apply to config-router-topo mode as well.
*
* Copyright (c) 1992-2012, 2014-2015, 2018-2021 by cisco Systems, Inc.
* All Rights Reserved

```

```

*-----
* $Log: cfg_router_redistribute.h,v $
*
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/internal_inc/cfg_router_redistribute.h
No license file was found, but licenses were detected in source scan.

```

```

/* $Id$
* $Source$
*-----
* iprouting_init_blob.c -- Partner file (in blob) for iprouting_init.c
*
* 27-August-2001, Fan Kong

```

```
*
* Copyright (c) 2001-2011, 2015, 2019 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
*/
```

Found in path(s):

```
*/opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/iprouting_init_blob.c
No license file was found, but licenses were detected in source scan.
```

```
/*-----
* route3_ionized.c
*
* ION specific route3.c parser functions.
*
* March 2002, Victor Kamensky
*
* Copyright (c) 2002, 2005-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
*/opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/route3_ionized.c
No license file was found, but licenses were detected in source scan.
```

```
/* $Id: exec_show_protocols.h,v 3.3.20.1 1996/08/12 16:04:12 widmer Exp $
* $Source: /release/112/cvs/Xsys/iprouting/exec_show_protocols.h,v $
*-----
* EXEC_SHOW_PROTOCOLS.H
*
* Copyright (c) 1992-1996, 2007-2009 by cisco Systems, Inc.
* All Rights Reserved
*-----
* $Log: exec_show_protocols.h,v $
* Revision 3.3.20.1 1996/08/12 16:04:12 widmer
* CSCdi65725: Create Eolns macro that defaults csb->which to 0
* Branch: California_branch
* Add Eolns and Nvgenns macro that default csb->which to 0
* Remove hidden keyword help strings
*
* Revision 3.3 1996/01/29 07:08:56 hampton
* Remove command number arguments passed to parse routines that only
* perform a single function. [CSCdi47717]
*
*/
```

```

* Revision 3.2 1995/11/17 17:33:30 hampton
* Remove old entries from the RCS header logs.
*
* Revision 3.1 1995/11/09 12:07:27 shaker
* Bump version numbers from 2.x to 3.x.
*
* Revision 2.1 1995/07/01 12:16:21 tli
* CSCdi36508: Rationalize parser file placement, part I
* Rationalize iprouting
*
* Revision 2.1 1995/06/07 22:25:21 hampton
* Bump version numbers from 1.x to 2.x.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/exec_show_protocols.h

```

No license file was found, but licenses were detected in source scan.

```

/* $Id: cfg_router_neighbor.h,v 3.3.20.1 1996/08/12 16:03:45 widmer Exp $
* $Source: /release/112/cvs/Xsys/iprouting/cfg_router_neighbor.h,v $
*-----
* C F G _ R O U T E R _ N E I G H B O R . H
*
* Copyright (c) 1992-2002, 2004-2010, 2012, 2018 by cisco Systems, Inc.
* All Rights Reserved
*-----
* $Log: cfg_router_neighbor.h,v $
* Revision 3.3.20.1 1996/08/12 16:03:45 widmer
* CSCdi65725: Create Eolns macro that defaults csb->which to 0
* Branch: California_branch
* Add Eolns and Nvgenns macro that default csb->which to 0
* Remove hidden keyword help strings
*
* Revision 3.3 1996/02/01 23:33:57 widmer
* CSCdi45325: Change Keyword/Set to use Keyword_Id macro
*
* Revision 3.2 1995/11/17 17:32:14 hampton
* Remove old entries from the RCS header logs.
*
* Revision 3.1 1995/11/09 12:05:42 shaker
* Bump version numbers from 2.x to 3.x.
*
* Revision 2.1 1995/07/01 12:15:55 tli
* CSCdi36508: Rationalize parser file placement, part I
* Rationalize iprouting

```

\*  
\* Revision 2.1 1995/06/07 22:12:48 hampton  
\* Bump version numbers from 1.x to 2.x.

\*  
\*-----  
\* \$Endlog\$  
\*/

Found in path(s):  
\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-  
tar/iprouting\_cmn/internal\_inc/cfg\_router\_neighbor.h  
No license file was found, but licenses were detected in source scan.

/\* \$Id\$  
\* \$Source\$  
\*-----  
\* C F G \_ R O U T E R \_ D E F A U L T S . H  
\*  
\* Copyright (c) 1992-2011, 2013, 2015-2016, 2019 by cisco Systems, Inc.  
\* All Rights Reserved  
\*-----  
\* \$Log\$  
\*-----  
\* \$Endlog\$  
\*/

Found in path(s):  
\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/cfg\_router\_default.h  
No license file was found, but licenses were detected in source scan.

/\*  
\*-----  
\* Registry for IP route commands in ION  
\*  
\* September 2001, Rashmi Shrivastava  
\*  
\* Copyright (c) 2001, 2003-2008 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\*/

Found in path(s):  
\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-  
tar/iprouting\_cmn/internal\_inc/ion\_iprouting\_cmd\_registry.h  
No license file was found, but licenses were detected in source scan.

/\*-----  
\* routemap\_api\_util.c -- Dynamic routemap API utility functions.

```
*
* May 2003, Tanya Shastri
*
* Copyright (c) 2003, 2005-2010, 2020 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
*/opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/routemap_api_util.c
```

No license file was found, but licenses were detected in source scan.

```
/* $Id$
* $Source$
*-----
* cfg_router_summary_addr.h
*
* Supports the router subcommand "summary-address". Provides IP aggregation
* configuration.
*
* Copyright (c) 1992-2004, 2007-2010, 2015, 2018 by cisco Systems, Inc.
* All rights reserved.
*
* Longer description here.
*-----
* $Log$
*-----
* $Endlog$
*/
```

Found in path(s):

```
*/opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/internal_inc/cfg_router_summary_addr.h
```

No license file was found, but licenses were detected in source scan.

```
/* $Id: route_map.h,v 3.3.12.6 1996/05/04 01:22:42 wilber Exp $
* $Source: /release/112/cvs/Xsys/iprouting/route_map.h,v $
*-----
* policylist.h -- Policy list support data structures
*
* April 2000, Rex Fernando
*
* Copyright (c) 2000, 2002-2003, 2005, 2007-2011 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/policylist.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* route\_map\_blob.c -- Route Map Subsystem

\*

\* Aug 2001, Siva Yaragalla

\*

\* Copyright (c) 2001-2012, 2014-2018 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/route\_map\_blob.c

No license file was found, but licenses were detected in source scan.

/\* \$Id: ip\_prefixlist.h,v 3.1.2.3 1998/02/23 19:43:44 enkechen Exp \$

\* \$Source: /release/111/cvs/Xsys/ip/ip\_prefixlist.h,v \$

\*-----

\* Generic prefix list support.

\*

\* June 1997, Enke Chen

\*

\* Copyright (c) 1997-2008, 2010 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\* \$Log: ip\_prefixlist.h,v \$

\* Revision 3.1.2.3 1998/02/23 19:43:44 enkechen

\* CSCdj75270: Prefix-list: optimization for downloading large lists

\* Branch: FIB\_branch

\*

\* Revision 3.1.2.2 1998/02/11 01:55:34 soma

\* Merge FIB\_L3 branch into FIB branch

\*

\* Revision 3.1.2.1.8.1 1998/01/29 01:02:13 enkechen

\* CSCdj77191: Reduce several chunk size parameters to save memory

\* Branch: FIB\_L3\_branch

\*

\* Revision 3.1.2.1 1997/12/17 21:37:00 enkechen

\* CSCdj61356: Prefix-list - facility for efficient route filtering

\* Branch: FIB\_branch

\*

\* Revision 3.1 1997/12/17 01:46:32 enkechen

\* Start with the new file.

\*

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/ip\_prefixlist.h

No license file was found, but licenses were detected in source scan.

/\*-----

\* router\_topology\_registry.c

\*

\* Router topology registry.

\*

\* Sept 2004, Mercia Zheng

\*

\* Copyright (c) 2004-2005, 2007-2008 by cisco Systems, Inc.

\* All rights reserved.

/\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/router\_topology\_registry.c

No license file was found, but licenses were detected in source scan.

/\* \$Id: cfg\_router\_distance.h,v 3.2.60.1 1996/05/04 01:21:16 wilber Exp \$

\* \$Source: /release/112/cvs/Xsys/iprouting/cfg\_router\_distance.h,v \$

/\*-----

\* C F G \_ R O U T E R \_ D I S T A N C E . H

\*

\* The bgp version must come before the weight version so that both NVGEN

\* and normal processing happen correctly.

\*

\* Copyright (c) 1992-1999, 2001-2010, 2015-2016, 2019-2020 by cisco Systems, Inc.

\* All rights reserved.

/\*-----

\* \$Log: cfg\_router\_distance.h,v \$

\* Revision 3.2.60.1 1996/05/04 01:21:16 wilber

\* Branch: California\_branch

\*

\* Constrained Multicast Flooding

\* - Define MOSPF hello option bit.

\*

\* Name Access List

\*

\* Revision 3.2 1995/11/17 17:32:05 hampton

\* Remove old entries from the RCS header logs.

\*

\* Revision 3.1 1995/11/09 12:05:29 shaker

\* Bump version numbers from 2.x to 3.x.

\*  
\* Revision 2.1 1995/07/01 12:15:50 tli  
\* CSCdi36508: Rationalize parser file placement, part I  
\* Rationalize iprouting

\*  
\* Revision 2.1 1995/06/07 22:12:30 hampton  
\* Bump version numbers from 1.x to 2.x.

\*  
\*-----  
\* \$Endlog\$  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-  
tar/iprouting\_cmn/internal\_inc/cfg\_router\_distance.h  
No license file was found, but licenses were detected in source scan.

/\*  
\*-----  
\* protofltr\_debug.c - Debug functions for protocol filter manager  
\*  
\* Mercia Zheng, Jan 2006  
\*  
\* Copyright (c) 2006-2008 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/protofltr\_debug.c  
No license file was found, but licenses were detected in source scan.

/\*  
\*-----  
\* cfg\_router\_topology.h - router topology configuration mode command  
\*  
\* Sept 2004, Mercia Zheng  
\*  
\* Copyright (c) 2004-2005, 2007-2009, 2013 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/cfg\_router\_topology.h  
No license file was found, but licenses were detected in source scan.

/\* \$Id\$

```
* $Source$
*-----
* Registry for routing context for RP and LC common code.
*
* September 2009, Derek Yeung
*
* Copyright (c) 2009 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/include/routing_context_registry.h
No license file was found, but licenses were detected in source scan.
```

```
/*-----
* exec_routing_context.h
*
* This file defines the routing-context command syntax.
*
* March 2009, Derek Yeung
*
* Copyright (c) 2009-2010, 2015, 2020 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/exec_routing_context.h
No license file was found, but licenses were detected in source scan.
```

```
/* $Id$
* $Source$
*-----
* routing_context_registry.c
*
* September 2009, Derek Yeung
*
* Copyright (c) 2009 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
```

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/routing\_context\_registry.c

No license file was found, but licenses were detected in source scan.

/\* \$Id\$

\* \$Source\$

\*-----

\* Address-family command; enters Address Family mode.

\*

\* Sept 1998, Bob Thomas

\*

\* Copyright (c) 1998-1999, 2001-2010, 2012, 2018 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\* \$Log\$

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/cfg\_router\_af.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* cfg\_router\_topology\_exit.h - Exit from router topology sub mode.

\*

\* Sept 2004, Mercia Zheng

\*

\* Copyright (c) 2004, 2006-2009 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/cfg\_router\_topology\_exit.h

No license file was found, but licenses were detected in source scan.

/\* \$Id\$

\* \$Source\$

\*-----

\* protofltr.c -- Routing protocol filter manager support routines

\*

\* Jan 2006, Mercia Zheng

\*

\* Copyright (c) 2005-2011, 2020 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\* \$Log\$

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/protofltr.c

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* protofltr\_debug\_flags.h -- Protofltr manager debug flags declarations

\*

\* Jan 2006, Mercia Zheng

\*

\* Copyright (c) 2005-2008 by Cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/protofltr\_debug\_flags.h

No license file was found, but licenses were detected in source scan.

/\*-----

\* routemap\_internal.c -- Internal funtions of routemap code.

\*

\* May 2003, Tanya Shastri

\*

\* Copyright (c) 2003, 2005-2009, 2011-2019 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/routemap\_internal.c

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* policylist\_ionized.c - Routines to handle policy-list commands for

\* IONized processes.

\*

\* November 2003, Siva Yaragalla

\*

\* Copyright (c) 2003-2005, 2007-2008 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\*/opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/policylist\_ionized.c

No license file was found, but licenses were detected in source scan.

/\* \$Id: iprouting\_actions.h,v 3.2 1995/11/17 17:34:39 hampton Exp \$

/\* \$Source: /swtal/cherf.111/ios/sys/iprouting/iprouting\_actions.h,v \$

\*-----

\* IP routing specific parsing functions.

\*

\* August 1994, Bruce Cole

\*

\* Copyright (c) 1994, 2004-2008, 2015 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\* \$Log: iprouting\_actions.h,v \$

\* Revision 3.2 1995/11/17 17:34:39 hampton

\* Remove old entries from the RCS header logs.

\*

\* Revision 3.1 1995/11/09 12:08:30 shaker

\* Bump version numbers from 2.x to 3.x.

\*

\* Revision 2.1 1995/06/07 21:07:35 hampton

\* Bump version numbers from 1.x to 2.x.

\*

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\*/opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/iprouting\_actions.h

No license file was found, but licenses were detected in source scan.

/\* \$Id: exec\_debug\_ip\_routing.h,v 3.3.20.1 1996/06/27 04:40:57 mikel Exp \$

/\* \$Source: /release/112/cvs/Xsys/iprouting/exec\_debug\_ip\_routing.h,v \$

\*-----

\* IP routing debug commands

\*

\* May 1993, Robert Widmer

\*

\* Copyright (c) 1993-2003, 2005-2009, 2019 by cisco Systems, Inc.

\* All rights reserved.

\*

\*-----

\* \$Log: exec\_debug\_ip\_routing.h,v \$

```

* Revision 3.3.20.1 1996/06/27 04:40:57 mikel
* CSCdi37749: <debug ip eigrp> help wrong
* Branch: California_branch
* clean up ip-eigrp AS debugging
*
* Revision 3.3 1996/02/01 23:34:07 widmer
* CSCdi45325: Change Keyword/Set to use Keyword_Id macro
*
* Revision 3.2 1995/11/17 17:33:17 hampton
* Remove old entries from the RCS header logs.
*
* Revision 3.1 1995/11/09 12:07:09 shaker
* Bump version numbers from 2.x to 3.x.
*
* Revision 2.2 1995/11/08 21:06:22 shaker
* Merge Arkansas_branch into 11.1 mainline.
*
* Revision 2.1 1995/07/01 12:16:15 tli
* CSCdi36508: Rationalize parser file placement, part I
* Rationalize iprouting
*
* Revision 2.1 1995/06/07 22:18:58 hampton
* Bump version numbers from 1.x to 2.x.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/exec_debug_ip_routing.h
No license file was found, but licenses were detected in source scan.

```

```

/*
*-----
* msg_iproute.c - Message file for iproute facility
*
* July 17, 1990, Kevin Paul Herbert
*
* Copyright (c) 1990-2013, 2015-2017, 2019 by Cisco Systems, Inc.
* All rights reserved.
*-----
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/include/msg_iproute.rc
No license file was found, but licenses were detected in source scan.

```

```

/* $Id: cfg_routemap_exit.h,v 3.2.60.1 1996/08/12 16:03:34 widmer Exp $

```

```

* $Source: /release/112/cvs/Xsys/iprouting/cfg_routemap_exit.h,v $
*-----
* cfg_routemap_exit.h
*
* exit - exit from route-map configuration mode
*
* Copyright (c) 1992-1996, 2007-2009 by cisco Systems, Inc.
* All Rights Reserved
*-----
* $Log: cfg_routemap_exit.h,v $
* Revision 3.2.60.1 1996/08/12 16:03:34 widmer
* CSCdi65725: Create Eolns macro that defaults csb->which to 0
* Branch: California_branch
* Add Eolns and Nvgenns macro that default csb->which to 0
* Remove hidden keyword help strings
*
* Revision 3.2 1995/11/17 17:31:42 hampton
* Remove old entries from the RCS header logs.
*
* Revision 3.1 1995/11/09 12:05:03 shaker
* Bump version numbers from 2.x to 3.x.
*
* Revision 2.1 1995/07/01 12:15:44 tli
* CSCdi36508: Rationalize parser file placement, part I
* Rationalize iprouting
*
* Revision 2.1 1995/06/07 22:12:09 hampton
* Bump version numbers from 1.x to 2.x.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/cfg_routemap_exit.h
No license file was found, but licenses were detected in source scan.

```

```

/*
*-----
* routemap_track.c -- Route map support for tracking
*           Functions which run on RP (not VIP).
*
* March 2003 Shyan Wignarajah
*
* Copyright (c) 2003-2008, 2013-2014 by cisco Systems, Inc.
* All rights reserved.
*-----
*/

```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/routemap\_track.c

No license file was found, but licenses were detected in source scan.

/\* \$Id: iprouting\_setup.c,v 3.4.4.1 1996/06/28 01:21:03 snyder Exp \$

\* \$Source: /release/112/cvs/Xsys/iprouting/iprouting\_setup.c,v \$

\*-----

\* IP Routing setup commands

\*

\* May 1993, Robert Widmer

\*

\* Copyright (c) 1993-2002, 2007-2008, 2010 by cisco Systems, Inc.

\* All rights reserved.

\*

\*-----

\* \$Log: iprouting\_setup.c,v \$

\* Revision 3.4.4.1 1996/06/28 01:21:03 snyder

\* CSCdi61601: fix some char \* that should have been char [] in iprouting

\* Branch: California\_branch

\*

\* You get space back for the pointer

\* You get space back for each reference

\* You get bytes out of data space

\*

\* Revision 3.4 1996/03/09 22:56:04 widmer

\* CSCdi47890: HTTP server doesnt work

\* Add HTTP server

\*

\* Revision 3.3 1995/11/28 03:58:38 widmer

\* CSCdi44175: Add setup\_printf to replace sprintf in setup code

\*

\* Revision 3.2 1995/11/17 17:34:53 hampton

\* Remove old entries from the RCS header logs.

\*

\* Revision 3.1 1995/11/09 12:08:42 shaker

\* Bump version numbers from 2.x to 3.x.

\*

\* Revision 2.1 1995/06/07 21:07:55 hampton

\* Bump version numbers from 1.x to 2.x.

\*

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/iprouting\_setup.c

No license file was found, but licenses were detected in source scan.

```
/* $Id$
 * $Source$
 *-----
 * cfg_route_default.h
 *
 * September 2016, Yingzhen Qu
 *
 * Copyright (c) 2016 by cisco Systems, Inc.
 * All rights reserved.
 *-----
 * $Log$
 *-----
 * $Endlog$
 */
```

Found in path(s):

`/opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/cfg_route_default.h`

No license file was found, but licenses were detected in source scan.

```
/* $Id$
 * $Source$
 *-----
 * cfg_routemap_match_ip.h -- IP specific route-map clauses
 *
 * March 1995 Tony Li
 *
 * Copyright (c) 1995-1998, 2000-2002, 2004-2005, 2007-2010, 2014 by cisco Systems, Inc.
 * All rights reserved.
 *-----
 * $Log$
 *-----
 * $Endlog$
 */
```

Found in path(s):

`/opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/cfg_routemap_match_ip.h`

No license file was found, but licenses were detected in source scan.

```
/*-----
 * routemap_api.h -- Dynamic routemap API definitions.
 *
 * May 2003, Tanya Shastri
 *
 * Copyright (c) 2003, 2005-2009, 2011, 2013, 2015, 2018-2019 by cisco Systems, Inc.
 * All rights reserved.
 *-----
```

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/routemap\_api.h  
No license file was found, but licenses were detected in source scan.

/\* \$Id\$

\* \$Source\$

\*-----

\* iprouting\_init\_ionized.c - ION specific IP Routing Protocol support.

\*

\* September 2001, Chandra Appanna

\*

\* Copyright (c) 2001-2012 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\* \$Log\$

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/iprouting\_init\_ionized.c  
No license file was found, but licenses were detected in source scan.

/\*

\*

\*-----

\* Generic route tag list support.

\*

\* June 2011, Karthik Subramaniam

\*

\* Copyright (c) 1997-2008, 2010-2012 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/routetag\_list.h  
No license file was found, but licenses were detected in source scan.

/\* \$Id\$

\* \$Source\$

\*-----

\* IP routing clear commands

\*

\* May 1993, Robert Widmer

\*  
\* Copyright (c) 1993-1999, 2001-2002, 2004-2010 by cisco Systems, Inc.  
\* All rights reserved.

\*  
\*-----  
\* \$Log\$  
\*-----  
\* \$Endlog\$  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/exec\_clear\_ip\_routing.h  
No license file was found, but licenses were detected in source scan.

/\* \$Id: cfg\_router\_metric.h,v 3.2 1995/11/17 17:32:13 hampton Exp \$  
\* \$Source: /swtal/cherf.111/ios/sys/iprouting/cfg\_router\_metric.h,v \$  
\*-----

\* C F G \_ R O U T E R \_ M E T R I C . H

\*  
\* Copyright (c) 1992-2002, 2004, 2006-2009 by cisco Systems, Inc.  
\* All Rights Reserved

\*-----

\* \$Log: cfg\_router\_metric.h,v \$  
\* Revision 3.2 1995/11/17 17:32:13 hampton  
\* Remove old entries from the RCS header logs.  
\*

\* Revision 3.1 1995/11/09 12:05:41 shaker  
\* Bump version numbers from 2.x to 3.x.  
\*

\* Revision 2.1 1995/07/01 12:15:54 tli  
\* CSCdi36508: Rationalize parser file placement, part I  
\* Rationalize iprouting  
\*

\* Revision 2.1 1995/06/07 22:12:46 hampton  
\* Bump version numbers from 1.x to 2.x.  
\*

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/cfg\_router\_metric.h  
No license file was found, but licenses were detected in source scan.

/\* \$Id: cfg\_router\_timers.h,v 3.2.60.1 1996/04/15 21:17:46 bcole Exp \$  
\* \$Source: /release/112/cvs/Xsys/iprouting/cfg\_router\_timers.h,v \$  
\*-----

\* C F G \_ R O U T E R \_ T I M E R S . H

```

*
* Copyright (c) 1992-1999, 2002, 2004-2011, 2018 by cisco Systems, Inc.
* All Rights Reserved
*-----
* $Log: cfg_router_timers.h,v $
* Revision 3.2.60.1 1996/04/15 21:17:46 bcole
* CSCdi54649: IP Host Modularity, IP Automatic Stub Routing feature
* commit
* Branch: California_branch
*
* Revision 3.2 1995/11/17 17:32:28 hampton
* Remove old entries from the RCS header logs.
*
* Revision 3.1 1995/11/09 12:06:09 shaker
* Bump version numbers from 2.x to 3.x.
*
* Revision 2.1 1995/07/01 12:16:04 tli
* CSCdi36508: Rationalize parser file placement, part I
* Rationalize iprouting
*
* Revision 2.1 1995/06/07 22:13:13 hampton
* Bump version numbers from 1.x to 2.x.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/internal_inc/cfg_router_timers.h
No license file was found, but licenses were detected in source scan.

```

```

/* $Id
* $Source
*-----
* iprib_api_svr.c -- IP Routing Information Base (RIB) API definitions
*
* August-2001, Fan Kong
*
* Copyright (c) 2001-2012, 2019 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/iprib_api_svr.c

```

No license file was found, but licenses were detected in source scan.

```
/*
*-----
* CFG_ROUTER_BFD.H
*
* Copyright (c) 2004-2008, 2010-2011, 2015 by cisco Systems, Inc.
* All Rights Reserved
*-----
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/cfg\_router\_bfd.h

No license file was found, but licenses were detected in source scan.

```
/*-----
* router_topology_registry.h
*
* Router topology registry.
*
* Sept 2004, Mercia Zheng
*
* Copyright (c) 2004, 2007-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/router\_topology\_registry.h

No license file was found, but licenses were detected in source scan.

```
/* $Id$
* $Source$
*-----
* iprouting_debug.c -- Debugging routines for IP routing
*
* May 1993, John Bashinski
*
* Copyright (c) 1993-2010, 2019 by Cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/iprouting\_debug.c

No license file was found, but licenses were detected in source scan.

```
#
#-----
# iprouting_api.enum - IP Routing public API enum definitions
#
# August 2009, Prashant Srinivas
#
# Copyright (c) 2009-2010 by cisco Systems, Inc.
# All rights reserved.
#-----
#
```

BEGIN IPRROUTING\_API

```
#
# Enumeration of the possible reasons for disabling routing on an interface
#
# Note, string length of the LONG description, should be <= 16 chars,
#   and contain nothing but alfanumerical characters and _
#
ENUM routing_disable_flag_t
```

```
    ITEM ROUTING_DISABLE_FLAG_INT_IF
    LONG "Internal_IF"
    END ITEM
```

END ENUM

END

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/enum/iprouting\_api.enum

No license file was found, but licenses were detected in source scan.

```
/*
*-----
* route_map_ion.h - Route map support data structures specific to ION.
*
* January 2002, Siva Yaragalla
*
* Copyright (c) 2002-2009, 2011 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/route\_map\_ion.h  
No license file was found, but licenses were detected in source scan.

```
/*-----  
* route3_blob.c  
*  
* IOS and blob specific route3.c parser functions.  
*  
* March 2002, Victor Kamensky  
*  
* Copyright (c) 2002-2003, 2005, 2007-2008 by cisco Systems, Inc.  
* All rights reserved.  
*-----  
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/route3\_blob.c  
No license file was found, but licenses were detected in source scan.

```
/* $Id$  
* $Source$  
*-----  
* cfg_routemap_match.h  
*  
* Process route-map match subcommands.  
*  
* Copyright (c) 1992-1999, 2002-2005, 2007-2012, 2018 by cisco Systems, Inc.  
* All rights reserved.  
*-----  
* $Log$  
*-----  
* $Endlog$  
*/
```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/cfg\_routemap\_match.h  
No license file was found, but licenses were detected in source scan.

```
/* $Id: cfg_router.h,v 3.2.60.2 1996/08/12 16:03:38 widmer Exp $  
* $Source: /release/112/cvs/Xsys/iprouting/cfg_router.h,v $  
*-----  
* C F G _ R O U T E R . H  
*  
* Enter router subcommand mode  
*  
* Copyright (c) 1992-2002, 2005, 2007-2009, 2015, 2017-2018 by cisco Systems, Inc.  
* All rights reserved.  
*-----
```

```

* $Log: cfg_router.h,v $
* Revision 3.2.60.2 1996/08/12 16:03:38 widmer
* CSCdi65725: Create Eolns macro that defaults csb->which to 0
* Branch: California_branch
* Add Eolns and Nvgenns macro that default csb->which to 0
* Remove hidden keyword help strings
*
* Revision 3.2.60.1 1996/04/15 21:17:43 bcole
* CSCdi54649: IP Host Modularity, IP Automatic Stub Routing feature
* commit
* Branch: California_branch
*
* Revision 3.2 1995/11/17 17:31:56 hampton
* Remove old entries from the RCS header logs.
*
* Revision 3.1 1995/11/09 12:05:20 shaker
* Bump version numbers from 2.x to 3.x.
*
* Revision 2.1 1995/07/01 12:15:46 tli
* CSCdi36508: Rationalize parser file placement, part I
* Rationalize iprouting
*
* Revision 2.1 1995/06/07 22:12:17 hampton
* Bump version numbers from 1.x to 2.x.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/cfg_router.h
```

No license file was found, but licenses were detected in source scan.

```

/*-----
* routing_context.c
*
* This file has global definitions for routing context support
* common to blob and iprouting proceses.
*
* March 2009, Derek Yeung
*
* Copyright (c) 2009 by cisco Systems, Inc.
* All rights reserved.
*-----
*/

```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/routing_context.c
```

No license file was found, but licenses were detected in source scan.

```
/* $Id: cfg_routemap_match_policy.h,v 3.3 1995/11/28 19:50:34 widmer Exp $
* $Source: /swtal/cherf.111/ios/sys/iprouting/cfg_routemap_match_policy.h,v $
*-----
* cfg_routemap_match_policy.h -- Route map match clauses for policy
* routing.
*
* Mar 1995 Tony Li
*
* Copyright (c) 1995, 2001-2002, 2007-2009, 2014-2015 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log: cfg_routemap_match_policy.h,v $
* Revision 3.3 1995/11/28 19:50:34 widmer
* CSCdi44251: Replace Ifelse(csb->in_help)/Eval with Func
*
* Revision 3.2 1995/11/17 17:31:48 hampton
* Remove old entries from the RCS header logs.
*
* Revision 3.1 1995/11/09 12:05:10 shaker
* Bump version numbers from 2.x to 3.x.
*
* Revision 2.3 1995/06/21 18:16:00 widmer
* CSCdi36227: Fix parse chain alternates
*
* Revision 2.2 1995/06/15 15:18:44 widmer
* CSCdi35889: parser transition structures should be static
*
* Revision 2.1 1995/06/07 21:05:32 hampton
* Bump version numbers from 1.x to 2.x.
*
*-----
* $Endlog$
*/
```

Found in path(s):

```
*/opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/include/cfg_routemap_match_policy.h
```

No license file was found, but licenses were detected in source scan.

```
/*
*-----
* Generic tag list support.
*
* June 2011, Karthik Subramaniam
*
```

\* Copyright (c) 1997-2008, 2010-2012 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/routetag\_list.c

No license file was found, but licenses were detected in source scan.

/\*-----

\* route3\_parse.h

\*

\* Route parser functions declarations.

\*

\* March 2002, Victor Kamensky

\*

\* Copyright (c) 2002, 2005-2008 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/route3\_parse.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* route\_map\_nbcmn.c -- Route map support non-Blob common routines

\*

\* October 2001, Siva Yaragalla

\*

\* Copyright (c) 2001-2013, 2018, 2020 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/route\_map\_nbcmn.c

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* ip\_prefixlist\_chain.c - Parse chains for IP Prefix Lists

\*

\* August 2001, Siva Yaragalla

\*

\* Copyright (c) 2001-2008 by cisco Systems, Inc.

\* All rights reserved.

\*-----  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/ip\_prefixlist\_chain.c  
No license file was found, but licenses were detected in source scan.

/\*-----  
\* routing\_context.h - Routing Context library API  
\*  
\* March 2009, Derek Yeung  
\*  
\* Copyright (c) 2009 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/routing\_context.h  
No license file was found, but licenses were detected in source scan.

/\*-----  
\* route\_map\_registry.c  
\*  
\* July 2001, Siva Yaragalla  
\*  
\* Copyright (c) 2001, 2003, 2007-2008 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/route\_map\_registry.c  
No license file was found, but licenses were detected in source scan.

/\*-----  
\* routemap\_internal.h  
\*  
\* Route map support data structures.  
\* To be included only by routemap code.  
\*  
\* Copyright (c) 1986-2003, 2005-2009, 2011, 2013-2015, 2018 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/routemap\_internal.h

No license file was found, but licenses were detected in source scan.

/\* \$Id: ip\_routing.h,v 3.2 1995/11/17 17:34:12 hampton Exp \$

\* \$Source: /swtal/cherf.111/ios/sys/iprouting/ip\_routing.h,v \$

\*-----

\* ip\_routing.h -- Generic IP routing declarations

\*

\* Mar 1995 Tony Li

\*

\* Copyright (c) 1995, 1998, 2004, 2006-2008 by cisco Systems, Inc.

\* All rights reserved.

\*-----

\* \$Log: ip\_routing.h,v \$

\* Revision 3.2 1995/11/17 17:34:12 hampton

\* Remove old entries from the RCS header logs.

\*

\* Revision 3.1 1995/11/09 12:08:06 shaker

\* Bump version numbers from 2.x to 3.x.

\*

\* Revision 2.1 1995/06/07 21:07:05 hampton

\* Bump version numbers from 1.x to 2.x.

\*

\*-----

\* \$Endlog\$

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/ip\_routing.h

No license file was found, but licenses were detected in source scan.

/\*

\*-----

\* route\_capability.h

\*

\* August 2003, Peter Psenak

\*

\* Copyright (c) 2003-2004, 2007-2009, 2011, 2015 by Cisco Systems, Inc.

\* All rights reserved.

\*-----

\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/route\_capability.h

No license file was found, but licenses were detected in source scan.

/\* \$Id: cfg\_int\_ip2\_routing.h,v 3.2.60.1 1996/08/12 16:03:24 widmer Exp \$

\* \$Source: /release/112/cvs/Xsys/iprouting/cfg\_int\_ip2\_routing.h,v \$

\*-----  
\* cfg\_int\_ip2\_routing.h  
\*  
\* May 1994, Derek Yeung  
\*  
\* Copyright (c) 1993-1996, 1998-1999, 2007-2009 by cisco Systems, Inc.  
\* All rights reserved.  
\*  
\* IP routing interface commands that must be after the encapsulation command  
\* in NV order.  
\*-----

\* \$Log: cfg\_int\_ip2\_routing.h,v \$  
\* Revision 3.2.60.1 1996/08/12 16:03:24 widmer  
\* CSCdi65725: Create Eolns macro that defaults csb->which to 0  
\* Branch: California\_branch  
\* Add Eolns and Nvgenns macro that default csb->which to 0  
\* Remove hidden keyword help strings  
\*  
\* Revision 3.2 1995/11/17 17:31:23 hampton  
\* Remove old entries from the RCS header logs.  
\*  
\* Revision 3.1 1995/11/09 12:04:31 shaker  
\* Bump version numbers from 2.x to 3.x.  
\*  
\* Revision 2.2 1995/08/04 03:07:45 dstine  
\* CSCdi37681: Need event logging for EIGRP  
\*  
\* Revision 2.1 1995/07/01 12:15:32 tli  
\* CSCdi36508: Rationalize parser file placement, part I  
\* Rationalize iprouting  
\*  
\* Revision 2.1 1995/06/07 22:05:27 hampton  
\* Bump version numbers from 1.x to 2.x.  
\*  
\*-----  
\* \$Endlog\$  
\*/

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/cfg\_int\_ip2\_routing.h  
No license file was found, but licenses were detected in source scan.

/\* \$Id\$

\* \$Source\$

\*-----

\* cfg\_route\_map.h

\*

\* Enter route-map subcommand mode

```

*
* Copyright (c) 1992-1996, 2001-2002, 2007-2010, 2017 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/cfg_route_map.h
No license file was found, but licenses were detected in source scan.

```

```

/* $Id: cfg_routemap_set_ip_policy.h,v 3.3.52.1 1996/06/18 19:06:39 widmer Exp $
* $Source: /release/112/cvs/Xsys/iprouting/cfg_routemap_set_ip_policy.h,v $
*-----
* cfg_routemap_set_ip_policy.h -- IP policy specific route map clauses
*
* Mar 1995 Tony Li
*
* Copyright (c) 1995-1998, 2000, 2002, 2004, 2007-2009 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log: cfg_routemap_set_ip_policy.h,v $
* Revision 3.3.52.1 1996/06/18 19:06:39 widmer
* CSCdi59706: parser lets you set tos/precedence bits forever (input
* loop)
* Branch: California_branch
*
* Revision 3.3 1995/11/28 19:50:38 widmer
* CSCdi44251: Replace Ifelse(csb->in_help)/Eval with Func
*
* Revision 3.2 1995/11/17 17:31:53 hampton
* Remove old entries from the RCS header logs.
*
* Revision 3.1 1995/11/09 12:05:16 shaker
* Bump version numbers from 2.x to 3.x.
*
* Revision 2.5 1995/08/16 01:01:15 tli
* CSCdi38512: Policy: TOS and precedence long help says match instead of
* set
*
* Revision 2.4 1995/07/12 07:19:09 tli
* CSCdi36426: Policy routing will not disable on an interface
* - Policy routed packets were creating fastswitching cache entries.
* That's not till _next_ release.
* - Add counters to record packet and byte count on a per route map entry
* basis.

```

```

* - Marketing identified a catastrophic deficiency. Implemented "set ip
* tos" and "set ip precedence" to cover this deficiency.
*
* Revision 2.3 1995/06/21 18:16:02 widmer
* CSCdi36227: Fix parse chain alternates
*
* Revision 2.2 1995/06/15 15:18:47 widmer
* CSCdi35889: parser transition structures should be static
*
* Revision 2.1 1995/06/07 21:05:39 hampton
* Bump version numbers from 1.x to 2.x.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/include/cfg_routemap_set_ip_policy.h

```

No license file was found, but licenses were detected in source scan.

```

/* $Id: cfg_router_passive-interface.h,v 3.2.60.1 1996/08/12 16:03:49 widmer Exp $
* $Source: /release/112/cvs/Xsys/iprouting/cfg_router_passive-interface.h,v $
*-----
* C F G _ R O U T E R _ P A S S I V E _ I N T . H
*
* Copyright (c) 1992-1999, 2001-2010, 2018 by cisco Systems, Inc.
* All Rights Reserved
*-----
* $Log: cfg_router_passive-interface.h,v $
*-----
* $Endlog$
*/

```

Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/internal_inc/cfg_router_passive-
interface.h

```

No license file was found, but licenses were detected in source scan.

```

/* $Id: cfg_ip_prefixlist.h,v 3.1.2.2 1998/02/23 19:43:42 enkechen Exp $
* $Source: /release/111/cvs/Xsys/ip/cfg_ip_prefixlist.h,v $
*-----
* cfg_ip_prefix.h -- IP Prefix List Parser Commands
*
* June 1997, Enke Chen
*
* Copyright (c) 1997-2001, 2004, 2007-2008, 2019 by cisco Systems, Inc.
* All rights reserved.

```

```

*-----
* $Log: cfg_ip_prefixlist.h,v $
* Revision 3.1.2.2 1998/02/23 19:43:42 enkechen
* CSCdj75270: Prefix-list: optimization for downloading large lists
* Branch: FIB_branch
*
* Revision 3.1.2.1 1997/12/17 21:36:57 enkechen
* CSCdj61356: Prefix-list - facility for efficient route filtering
* Branch: FIB_branch
*
* Revision 3.1 1997/12/17 01:46:33 enkechen
* Start with the new file.
*
*-----
* $Endlog$
*/

```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/cfg_ip_prefixlist.h
```

No license file was found, but licenses were detected in source scan.

```

/*
*-----
* route_map_http_ion.c
*
* March, 2003 Phil Winterfield
*
* Copyright (c) 2003-2004, 2006-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/

```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/route_map_http_ion.c
```

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Found in path(s):

```

* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/include/reg/route_map_registry.reg
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/include/reg/router_topology_registry.reg
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/makefile
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/include/reg/ion_iprouting_cmd_registry.reg
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-

```

```
tar/iprouting_cmn/include/reg/router_af_actions_registry.reg
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/include/.signature/makefile
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-
tar/iprouting_cmn/include/reg/routing_context_registry.reg
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/include/reg/iprouting_registry.reg
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/include/reg/lfafr_registry.reg
No license file was found, but licenses were detected in source scan.
```

```
/*
*-----
* policylist_ios.c - IOS stubs for notification routines
*           in policylist code
*
* Jun 2005, Tony P. Ambalathingal
*
* Copyright (c) 2003, 2005, 2007-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/src/policylist_ios.c
No license file was found, but licenses were detected in source scan.
```

```
/* $Id$
* $Source$
*-----
* cfg_router_flash-threshold.h
*
* January 1998, 2001 Dawn Li
*
* Copyright (c) 1998-1999, 2001, 2007-2008 by cisco Systems, Inc.
* All rights reserved.
*-----
* $Log$
*-----
* $Endlog$
*/
```

Found in path(s):

```
* /opt/cola/permits/1130450046_1615190725.52/0/iproute-254-tar/iprouting_cmn/internal_inc/cfg_router_flash-
threshold.h
No license file was found, but licenses were detected in source scan.
```

```
/*
*-----
* ip_prefixlist_ion.h - IP Prefix Lists support for ION
*

```

\* June 2002, Siva Yaragalla  
\*  
\* Copyright (c) 2002, 2005, 2007-2017 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\*/

Found in path(s):  
\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/include/ip\_prefixlist\_ion.h  
No license file was found, but licenses were detected in source scan.

/\* \$Id\$  
\* \$Source\$  
\*-----  
\* router\_topology\_chain.c - Parser chains of router topology sub mode  
\* for multi-topology routing support  
\* Sept 2004, Mercia Zheng  
\*  
\* Copyright (c) 2004-2010, 2019 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\* \$Log\$  
\*-----  
\* \$Endlog\$  
\*/

Found in path(s):  
\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/router\_topology\_chain.c  
No license file was found, but licenses were detected in source scan.

/\* \$Id\$  
\* \$Source\$  
\*-----  
\* exec\_show\_ip\_extcommunity-list.h  
\*  
\* April 2000, Rex Fernando  
\*  
\* Copyright (c) 2000, 2002-2003, 2007-2008 by cisco Systems, Inc.  
\* All rights reserved.  
\*-----  
\* \$Endlog\$  
\*/

Found in path(s):  
\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/internal\_inc/exec\_show\_ip\_policylist.h  
No license file was found, but licenses were detected in source scan.

```

/*-----
* router_af_parse_blob.c
*
* Address family submode command - proxy EOLs
*
* May 2002, Victor Kamensky
*
* Copyright (c) 2002-2005, 2007-2009 by cisco Systems, Inc.
* All Rights Reserved
*-----
*/

```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/router\_af\_parse\_blob.c

No license file was found, but licenses were detected in source scan.

```

/*-----
* policylist_blob.c - Routines to handle policy-list commands.
*           Common for IOS and ION Blob.
*
* November 2003, Siva Yaragalla
*
* Copyright (c) 2003-2008, 2010 by cisco Systems, Inc.
* All rights reserved.
*-----
*/

```

Found in path(s):

\* /opt/cola/permits/1130450046\_1615190725.52/0/iproute-254-tar/iprouting\_cmn/src/policylist\_blob.c

# 1.16 nettle 3.6

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```
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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
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## 1.18 parted 3.3

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Version 3, 29 June 2007

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# 1.19 elfutils 0.180

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# 1.21 libdevmapper 1.02.165

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## 1.22 systemd 246

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## 1.23 glib 2.64.5

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## 1.24 libunistring 0.9.10

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Version 3, 29 June 2007

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## 1.26 netcat 0.7.1

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```

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## 1.30 diffutils 3.7

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man/fmtcheck.3bsd

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Files:

src/flopen.c

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src/fparseln.c

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man/readpassphrase.3bsd

man/strncpy.3bsd

man/strtonum.3bsd

src/arc4random.c

src/arc4random\_linux.h

src/arc4random\_openbsd.h

src/arc4random\_uniform.c

src/arc4random\_unix.h

src/arc4random\_win.h

src/closefrom.c

src/getentropy\_aix.c

src/getentropy\_bsd.c

src/getentropy\_hpux.c

src/getentropy\_hurd.c

src/getentropy\_linux.c

src/getentropy\_osx.c

src/getentropy\_solaris.c

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src/hash/md5.c

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## 1.33 curl 7.72.0

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Julian Seward, Cambridge, UK.

jseward@bzip.org

bzip2/libbzip2 version 1.0.4 of 20 December 2006

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## Constant-time SSSE3 AES core implementation.

## version 0.1

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## By Mike Hamburg (Stanford University), 2009

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## 1.36 selinux 2.9-5.el8

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## <summary>Polaris dbgd Policy Rules.</summary>

#####
## <summary>
##   Write dbgd /var/run socket file
## </summary>
## <param name="domain">
```

```

## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_dbgd_var_sock_write`,`
    gen_require(`
        type polaris_dbgd_t;
        type polaris_dbgd_var_run_t;
        type var_run_t;
    `)
    write_sock_files_pattern($1, var_run_t, polaris_dbgd_var_run_t)
    allow $1 polaris_dbgd_t:unix_stream_socket { connectto };
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdbgdb.if

No license file was found, but licenses were detected in source scan.

```

#
# July 2017, Victor Kamensky
#
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#

```

```

## <summary>Polaris cpp_stats Policy Rules.</summary>

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppstats.if

No license file was found, but licenses were detected in source scan.

```

#
# November 2020, Christine Hwang
#
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#

```

```

# Map GNSS TTY to correct device context
/dev/ttyS1          -c gen_context(system_u:object_r:polaris_cabo_gnss_device_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscabognss.fc

No license file was found, but licenses were detected in source scan.

```

#
# March 2017, Victor Kamensky

```

```

#
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# All rights reserved
#

policy_module(polarisnginx, 1.0);

gen_require(
    type polaris_nginx_t;
)

polaris_btrace_data_manage(polaris_nginx_t)
polaris_chasfs_manage(polaris_nginx_t)
polaris_tdlresolve_read(polaris_nginx_t)
polaris_tdlldb_list_dirs(polaris_nginx_t)
polaris_cpld_read(polaris_nginx_t)
polaris_lua_read(polaris_nginx_t)
polaris_flashlib_read(polaris_nginx_t)
polaris_crft_data_manage(polaris_nginx_t)

polaris_ripc_sman_ui_serv_connect(polaris_nginx_t)

polaris_lua_read(polaris_nginx_t)
polaris_disk_harddisk_read_lnk(polaris_nginx_t)

allow polaris_nginx_t self:tcp_socket { bind create listen accept setopt getopt shutdown};
allow polaris_nginx_t self:capability2 block_suspend;
allow polaris_nginx_t self:capability { setgid setuid sys_resource };

polaris_lfts_dev_use(polaris_nginx_t)
logging_send_syslog_msg(polaris_nginx_t)

corenet_tcp_connect_http_port(polaris_nginx_t)
corenet_tcp_bind_generic_node(polaris_nginx_t)
corenet_tcp_bind_http_port(polaris_nginx_t)
corenet_tcp_connect_pkiserver_port(polaris_nginx_t)
# FIXME: add interface to allow bind to port 1025-65535
corenet_tcp_bind_all_ports(polaris_nginx_t)
#Allow the nginx to search/read the web servers config files
apache_read_config(polaris_nginx_t)
apache_search_config(polaris_nginx_t)
# allow read httpd_sys_content_t (/var/www/...)
apache_read_sys_content(polaris_nginx_t)

gen_require(
    type httpd_var_run_t;
    type syslogd_var_run_t;
)

```

```
setattr_dirs_pattern(polaris_nginx_t, httpd_var_run_t, httpd_var_run_t)
manage_dirs_pattern(polaris_nginx_t, httpd_var_run_t, httpd_var_run_t)
manage_files_pattern(polaris_nginx_t, httpd_var_run_t, httpd_var_run_t)
manage_sock_files_pattern(polaris_nginx_t, httpd_var_run_t, httpd_var_run_t)
files_pid_filetrans(polaris_nginx_t, httpd_var_run_t, { file sock_file dir unix_stream_socket })
```

```
polaris_socketat_nsfs_read(polaris_nginx_t)
# socketat does setsockopt SO_VRF
allow polaris_nginx_t self:capability net_admin;
auth_use_nsswitch(polaris_nginx_t)
```

```
allow polaris_nginx_t tmp_t:dir create_dir_perms;
files_tmp_filetrans(polaris_nginx_t, httpd_log_t, file, "ngx_access.log")
files_tmp_filetrans(polaris_nginx_t, httpd_log_t, file, "ngx_error.log")
files_tmp_filetrans(polaris_nginx_t, httpd_log_t, file, "nginx.pid")
files_tmp_filetrans(polaris_nginx_t, httpd_log_t, file, "nginx.lock.accept")
files_tmp_filetrans(polaris_nginx_t, httpd_log_t, file, "nginx.lock.cookie_tbl")
files_tmp_filetrans(polaris_nginx_t, httpd_log_t, file, "nginx.lock.login_count")
filetrans_pattern(polaris_nginx_t, syslogd_var_run_t, httpd_log_t, file, "openresty.log")
filetrans_pattern(polaris_nginx_t, syslogd_var_run_t, httpd_log_t, file, "ngxcsrf.log")
filetrans_pattern(polaris_nginx_t, syslogd_var_run_t, httpd_log_t, file, "ngxtest.log")
create_dirs_pattern(polaris_nginx_t, httpd_log_t, httpd_log_t)
manage_files_pattern(polaris_nginx_t, httpd_log_t, httpd_log_t)
apache_read_log(polaris_nginx_t)
apache_write_log(polaris_nginx_t)
```

```
polaris_restconf_tmp_use(polaris_nginx_t)
dev_read_sysfs(polaris_nginx_t)
```

```
# dev/zram0 needs fs_t:filesystem getattr
#ifdef(^quake_platform,`
fs_getattr_xattr_fs(polaris_nginx_t)
`)
```

```
type polaris_nginx_tmp_t;
files_tmp_file(polaris_nginx_tmp_t)
manage_files_pattern(polaris_nginx_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)
manage_dirs_pattern(polaris_nginx_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, file, "nginx_aaa")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, file, "nginx_master")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, file, "nginx_session")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, file, "ciscosdwan.cfg")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "proxy_temp")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "client_temp")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "fastcgi_temp")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "scgi_temp")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "uwsgi_temp")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "pki")
```

```

files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "auth")

polaris_restconf_read(polaris_nginx_t)

#####
# webui_helper.sh/webui_helper_upgrade.sh
#####

polaris_process_domain_template(nginx_webui)
polaris_process_domain_template(nginx_webui_install)

polaris_nginx_exec_domain(polaris_nginx_webui_t, polaris_nginx_webui_exec_t)
polaris_nginx_exec_domain(polaris_nginx_webui_install_t, polaris_nginx_webui_install_exec_t)

corecmd_exec_bin(polaris_nginx_webui_t)
corecmd_exec_bin(polaris_nginx_webui_install_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_nginx_webui_t)
auth_use_nsswitch(polaris_nginx_webui_install_t)

#allow polaris_nginx_webui_t/polaris_nginx_webui_install_t access to nginx webui /tmp base folder
# /tmp/nginx/webui_tmp
manage_files_pattern(polaris_nginx_webui_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)
manage_files_pattern(polaris_nginx_webui_install_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)

#allow polaris_file_transfer_client_t to access nginx webui /tmp base folder
# /tmp/nginx/webui_tmp. We also need to allow chvrf to use the FIFO in cases
# where we use the VRF interface
gen_require(
    type polaris_file_transfer_client_t;
    type polaris_chvrf_t;
)
manage_files_pattern(polaris_file_transfer_client_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)
manage_fifo_files_pattern(polaris_file_transfer_client_t, polaris_nginx_t, polaris_nginx_t)
manage_fifo_files_pattern(polaris_chvrf_t, polaris_nginx_t, polaris_nginx_t)

#fts_client binary requires access to chassis, tdlresolve and cpld
polaris_tdlresolve_read(polaris_file_transfer_client_t)
polaris_chasfs_manage(polaris_file_transfer_client_t)
polaris_cpld_read(polaris_file_transfer_client_t, polaris_sysfs_cpld_t, polaris_sysfs_cpld_t)

gen_require(
    type polaris_file_transfer_client_exec_t;
)
polaris_bexecute_domain(polaris_file_transfer_client_t, polaris_file_transfer_client_exec_t)

type polaris_fts_client_tmp_t;

```

```

files_tmp_file(polaris_fts_client_tmp_t)
polaris_fts_client_tmp_manage(polaris_file_transfer_client_t)

# on ultra /var/www directory created by systemd unit that runs /mount_packages.sh
# under unconfined_service_t domain
gen_require(
    type unconfined_service_t;
)
files_var_filetrans(unconfined_service_t, httpd_sys_content_t, dir, "www")

allow polaris_nginx_t self:capability dac_override;

#iox local mgr in webui connects to caf service on port 8098
corenet_tcp_connect_polaris_caf_api_port(polaris_nginx_t)

# IOx downloads the application package using network protocol (e.g http)
gen_require(
    type fifo_var_run_t;
)
allow polaris_file_transfer_client_t fifo_var_run_t:fifo_file read;

# webui connects to dbm backend service on port 9090
corenet_tcp_connect_polaris_wnc_mgrd_port(polaris_nginx_t)

# webui connects to poljvm service on port 9093
corenet_tcp_connect_polaris_poljvm_websocket_port(polaris_nginx_t)

# remote docker workflow
corenet_tcp_connect_us_cli_port(polaris_nginx_t)

# webui sw mgmt app which does install and smu, invokes webui helper shell
# scripts which inturn invoke installer scripts. Hence need to provide transition
# rule to polaris_install_engine_t domain
polaris_install_engine_domtrans(polaris_nginx_webui_install_t)
polaris_install_show_domtrans(polaris_nginx_webui_install_t)

# Allow pipe operations during install command invocation
polaris_nginx_manage_fifo_files(polaris_bexecute_t)
polaris_nginx_manage_fifo_files(polaris_code_verify_t)
polaris_nginx_manage_fifo_files(polaris_install_engine_t)
polaris_nginx_manage_fifo_files(polaris_install_show_t)
polaris_nginx_manage_fifo_files(rsync_t)

# During install-add via WebUI, code_sign_verify generates a file:map denial
# "/usr/bin/code_sign_verify package
# /tmp/patch/smus/10_vwlc_apsp_ap3g3_17.6.bin/mount/C9800-CL-mono-patch.2021-01-11_11.31_radonep"
require {
    type etc_runtime_t;

```

```

}
allow polaris_code_verify_t etc_runtime_t:file map;

# Provide sys_resource capability to webui install scripts for sys_pipe calls.
allow polaris_nginx_webui_install_t self:capability sys_resource;

# nginx/webui File-manager app provides bootflash file-mgmt facility.
# as part of this it needs RW access to bootflash.
# TODO: Bug CSCvp83328 to isolate the access to another utility, which
# can have its own domain and nginx_t can transition to it.
polaris_bootflash_manage(polaris_nginx_t)

# allow nginx to manage core files
polaris_core_file_manage(polaris_nginx_t)

# luajit module for nginx triggers execmem denial due to mprotect call.
# TODO: cdets CSCvp70095 is used to track this vulnerability in
# current nginx component.
allow polaris_nginx_t self:process execmem;

# FIXME : allow shell/binary execution
# Elevated privelage needs to be addressed
# Tracked by Bugid : CSCvp93448
corecmd_exec_bin(polaris_nginx_t)
corecmd_exec_shell(polaris_nginx_t)

#FIXME
# Need to re-evaluate these privileges
#Tracked by Bugid : CSCvp92908, CSCvt81963(fts_client)
polaris_file_transfer_client_domtrans(polaris_nginx_webui_install_t)
# nginx need access btrace fifo file:
polaris_use_btrace_fifo(polaris_nginx_t)
gen_require(
    type proc_t;
)
manage_files_pattern(polaris_nginx_t, polaris_nginx_t,polaris_nginx_t)
allow polaris_nginx_t proc_t:filesystem { associate };
# nginx needs access to /dev/stdout which is owned by pman
allow polaris_nginx_t polaris_pman_t:fifo_file open;

#####
# aireos_translate_helper.sh
# Invokes a python library that converts aireos config to ewlc config.
#####
type polaris_aireos_translator_scripts_t;
files_type(polaris_aireos_translator_scripts_t)
polaris_process_domain_template(nginx_webui_aireos_translator)

```

```

polaris_nginx_exec_domain(polaris_nginx_webui_aireos_translator_t,
polaris_nginx_webui_aireos_translator_exec_t)
allow polaris_nginx_t polaris_aireos_translator_scripts_t:dir { getattr open read search };
allow polaris_nginx_t polaris_aireos_translator_scripts_t:file { getattr ioctl open read };
allow polaris_nginx_t polaris_nginx_webui_aireos_translator_exec_t:file ioctl;
allow polaris_nginx_t self:process setfscreate;
files_list_var(polaris_nginx_t)

#####
# ra_trace_webui_helper.sh
# Invokes mcp_trace_filter.sh to perform radio active tracing.
#####
polaris_process_domain_template(nginx_webui_trace_filter)
polaris_nginx_exec_domain(polaris_nginx_webui_trace_filter_t, polaris_nginx_webui_trace_filter_exec_t)
corecmd_exec_bin(polaris_nginx_webui_trace_filter_t)
manage_files_pattern(polaris_nginx_webui_trace_filter_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)
manage_dirs_pattern(polaris_nginx_webui_trace_filter_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)
auth_use_nsswitch(polaris_nginx_webui_trace_filter_t)
polaris_trace_filter_domtrans(polaris_nginx_webui_trace_filter_t)
polaris_nginx_manage_fifo_files(polaris_trace_filter_t)

#####
# nginx_helper.sh
#nginx show command helper run by pman invoking curl
#####
polaris_utility_domain_template(nginx_helper)
polaris_pman_entry(polaris_nginx_helper_t, polaris_nginx_helper_exec_t)

#allow execution of nginx_helper.sh
corecmd_exec_bin(polaris_nginx_helper_t)

#allow read of /etc/passwd
auth_use_nsswitch(polaris_nginx_helper_t)

#allow access to the tmp fifo file
polaris_use_btrace_fifo(polaris_nginx_helper_t)

# nginx_helper.sh reads from chasfs
polaris_chasfs_manage(polaris_nginx_helper_t)

gen_require(
    type polaris_curl_t;
)

# allow execution of /usr/bin/curl on the pkiserver port
polaris_curl_domtrans(polaris_nginx_helper_t)
corenet_tcp_connect_pkiserver_port(polaris_curl_t)

```

```
#allow curl to write into chasfs
polaris_chasfs_manage(polaris_curl_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisnginx.te
No license file was found, but licenses were detected in source scan.
```

```
#
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#
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#
```

```
## <summary>Polaris cpp_cdm Policy Rules.</summary>
```

```
#####
```

```
## <summary>
##   Allow access to semaphore with type polaris_cpp_cdm_t
## </summary>
```

```
## <param name="domain">
```

```
##   <summary>
```

```
##   Domain allowed access.
```

```
##   </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_cpp_cdm_sem_use`,`
    gen_require(`
        type polaris_cpp_cdm_t;
    `)
    allow $1 polaris_cpp_cdm_t:sem rw_sem_perms;
`)
```

```
#####
```

```
## <summary>
##   Allow access to shared memory with type polaris_cpp_cdm_t
## </summary>
```

```
## <param name="domain">
```

```
##   <summary>
```

```
##   Domain allowed access.
```

```
##   </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_cpp_cdm_shm_use`,`
    gen_require(`
        type polaris_cpp_cdm_t;
    `)
    allow $1 polaris_cpp_cdm_t:shm rw_shm_perms;
`)
```

)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppcdm.if

No license file was found, but licenses were detected in source scan.

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# April 2017, Victor Kamensky

#

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#

## <summary>Polaris dmi\_ndbmand Policy Rules.</summary>

#####

## <summary>

## Work with NDBLOAD\_LOCK\_PATH.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_ndbload\_lock\_use`,`

gen\_require(`

type polaris\_dmi\_ndbutil\_lock\_t;

type tmp\_t;

`)

manage\_files\_pattern(\$1, tmp\_t, polaris\_dmi\_ndbutil\_lock\_t)

files\_tmp\_filetrans(\$1, polaris\_dmi\_ndbutil\_lock\_t, file, ".l.ndbutil-load")

files\_tmp\_filetrans(\$1, polaris\_dmi\_ndbutil\_lock\_t, file, ".l.ndbutil-use")

`)

#####

## <summary>

## Manage polaris\_ndbmand\_ndbutil\_t files

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_ndbmand\_ndbutil\_manage`,`

gen\_require(`

type polaris\_ndbmand\_ndbutil\_t;

```
        type polaris_confnd_ndbutil_lock_t;
    ')
    manage_files_pattern($1, polaris_confnd_ndbutil_lock_t, polaris_ndbmand_ndbutil_t)
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmindbmand.if
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
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#
## <summary>Polaris sif_mgr Policy Rules.</summary>
```

```
#####
## <summary>
##   Allow the specified domain able to read sif_mgr /tmp files.
## </summary>
## <param name="type">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <param name="object">
##   <summary>
##     File name in /tmp that the sif_mgr domain creates and other domains
##     access.
##   </summary>
## </param>
#
interface(`polaris_sif_mgr_tmp_files_read`,`
    gen_require(`
        type polaris_sif_mgr_tmp_t;
    `)

    read_files_pattern($1, polaris_sif_mgr_tmp_t, polaris_sif_mgr_tmp_t)
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissifmgr.if
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
```

```

#
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#

## <summary>Polaris Chasfs Policy Rules.</summary>

#####
# Chasfs policy
#####

#####
## <summary>
##   Manage chasfs files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface('polaris_chasfs_manage',`
  gen_require(
    type polaris_chasfs_t;
  )
  manage_dirs_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
  manage_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
  manage_lnk_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
  manage_fifo_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
  manage_sock_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)

  allow $1 polaris_chasfs_t:{file dir} watch;

  # chasfs contains a lot of weird permission files
  allow $1 self:capability dac_read_search;
)

#####
## <summary>
##   Read chasfs files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>

```

```

#
interface(`polaris_chasfs_read`,`
gen_require(`
type polaris_chasfs_t;
`)
list_dirs_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
read_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
read_lnk_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
read_fifo_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
read_sock_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)

allow $1 polaris_chasfs_t:{file dir} watch;

# chasfs contains a lot of weird permission files
allow $1 self:capability dac_read_search;
)

#####
## <summary>
##   Manage chasync file(user_input_custom.xml)
## </summary>
## <param name="domain">
##   <summary>
##     getattr allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_chasync_files_manage`,`
gen_require(`
type polaris_chasync_files_t;
`)
manage_files_pattern($1, polaris_chasync_files_t, polaris_chasync_files_t)
)

#####
## <summary>
##   Watch read chasfs directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_chasfs_watch_read`,`
gen_require(`

```

```
    type polaris_chasfs_t;
)
allow $1 polaris_chasfs_t:dir watch_reads;
)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarischasfs.if
No license file was found, but licenses were detected in source scan.
```

```
#
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#
```

```
/dev/dev_lfts -c gen_context(system_u:object_r:polaris_lfts_device_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarislfts.fc
No license file was found, but licenses were detected in source scan.
```

```
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#
```

```
## <summary>Polaris GR Manager Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisgrmgr.if
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
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#
```

```
policy_module(polarisngwc, 1.0);
```

```
# chdrvmmmap device (MMAP Driver for ASIC Memory mapping)
type polaris_chdrvmmmap_device_t;
dev_node(polaris_chdrvmmmap_device_t)
```

```

# gettysburg_fpga device (/dev/gettysburg_dev1)
type polaris_gettysburg_fpga_device_t;
dev_node(polaris_gettysburg_fpga_device_t)

# dplr io memory mapping driver /dev/cisco/dplriomem
type polaris_dplr_iomem_mmapdrv_device_t;
dev_node(polaris_dplr_iomem_mmapdrv_device_t)

# /dev/shm/ngwc_shm shared memory
type polaris_ngwc_shm_t;
files_type(polaris_ngwc_shm_t)

# /dev/shm/ngwc_scc_shm shared memory
type polaris_ngwc_scc_shm_t;
files_type(polaris_ngwc_scc_shm_t)

# /dev/shm/iomd_to_fed_ptp_offload shared memory
type polaris_ngwc_itfpo_t;
files_type(polaris_ngwc_itfpo_t)

# /dev/shm/sdm shared memory
type polaris_sdm_shm_t;
files_type(polaris_sdm_shm_t)

# /dev/shm/sem.i2c_sem00N quake sempaphor
type polaris_quake_i2c_t;
files_type(polaris_quake_i2c_t)

#FPGA io memory mapping driver /dev/cisco/fpga_iomem
type polaris_fpga_iomem_mmapfpga_device_t;
dev_node(polaris_fpga_iomem_mmapfpga_device_t)

# Mapping permission for /dev/shm/<name>
#ifdef(^quake_platform',`
gen_require(`
    type systemd_tmpfiles_t;
    `)
mmap_files_pattern(systemd_tmpfiles_t, polaris_quake_i2c_t, polaris_quake_i2c_t)
`)

# In combined image we have several policies and we choose
# one to use in run-time, but file system is shared and
# labeled with different file_context files, so it is
# possible that we may have some labels that other policy
# does not understand for now just hard missing entries
#ifdef(^nyquist_platform',`
type polaris_cm_cc_exec_t;
files_type(polaris_cm_cc_exec_t)

```

```

type polaris_cm_fp_exec_t;
files_type(polaris_cm_fp_exec_t)
type polaris_flashcheck_exec_t;
files_type(polaris_flashcheck_exec_t)
type polaris_emd_exec_t;
files_type(polaris_emd_exec_t)
type polaris_ngwc_ishow_exec_t;
files_type(polaris_ngwc_ishow_exec_t)

# Adding here as this unmount command is specific to Nyquist platform.
# /bin/cat9k_ssd_auth_cmds.sh
polaris_utility_domain_template(ssd_unmount)
corecmd_exec_bin(polaris_ssd_unmount_t)
storage_getattr_fixed_disk_dev(polaris_ssd_unmount_t)
fstools_domtrans(polaris_ssd_unmount_t)
mount_domtrans(polaris_ssd_unmount_t)
polaris_use_btrace_fifo(polaris_ssd_unmount_t)

#allow to read /etc/passwd
auth_use_nsswitch(polaris_ssd_unmount_t)
polaris_chasfs_read(polaris_ssd_unmount_t)
polaris_cpld_read(polaris_ssd_unmount_t)

#Read /tmp/sw/boot files
polaris_boot_tmp_read(polaris_ssd_unmount_t)
# Allow read to btrace tmp files
polaris_btrace_tmppub_read(polaris_ssd_unmount_t)
# Allow getattr to tmpfs
fs_getattr_tmpfs(polaris_ssd_unmount_t)
# Allow read to ssd auth tmp files /tmp/ssd_blk_device created by udev
polaris_read_ssd_tmp_files(polaris_ssd_unmount_t)

# allow creation/access of temporary files created by bash such as
# /tmp/sh-thd-1499428203 etc
type polaris_ssd_unmount_tmp_t;
files_tmp_file(polaris_ssd_unmount_tmp_t)
files_tmp_filetrans(polaris_ssd_unmount_t, polaris_ssd_unmount_tmp_t, file)
manage_files_pattern(polaris_ssd_unmount_t, polaris_ssd_unmount_tmp_t, polaris_ssd_unmount_tmp_t)
allow polaris_ssd_unmount_t polaris_ssd_unmount_tmp_t:file { unlink };

#Allow nfs dir/file read
rpc_manage_nfs_state_data_dir(polaris_ssd_unmount_t)
rpc_manage_nfs_state_data(polaris_ssd_unmount_t)
#Allow read access to files on nfsd file system
fs_read_nfsd_files(polaris_ssd_unmount_t)
kernel_rw_rpc_sysctls(polaris_ssd_unmount_t)
fs_getattr_xattr_fs(polaris_ssd_unmount_t)

```

```

# allow create/sendto/connect operations for logger
allow polaris_ssd_unmount_t self:unix_dgram_socket sendto;
allow polaris_ssd_unmount_t self:unix_dgram_socket create_socket_perms;
logging_create_devlog_dev(polaris_ssd_unmount_t)
logging_send_syslog_msg(polaris_ssd_unmount_t)
polaris_persistent_getattr(polaris_ssd_unmount_t)
#allow dir:search getattr read for udev tmp files
#allow file:write open for udev tmp files
polaris_udev_tmp_manage(polaris_ssd_unmount_t)
gen_require(
    type rsync_exec_t;
    type rsync_port_t;
)
#allow tcp_socket:name_connect for rsync_port_t
#polaris_ssd_unmount_t has superset privileges of rsync, so its good
#to run rsync in unmount domain. This is not the case everywhere. Please use
#corenet_tcp_connect_rsync_port if rsync needs to be run in its own domain
allow polaris_ssd_unmount_t rsync_port_t:tcp_socket name_connect;
#allow file:get_attr exec read open map execute_no_trans for rsync_exec_t
allow polaris_ssd_unmount_t rsync_exec_t:file { execute execute_no_trans getattr map open read };
#allow dir:getattr for removable_t
polaris_getattr_removable(polaris_ssd_unmount_t)
)
#ifdef(`passport_platform',`
type polaris_auto_upgrade_server_rp_exec_t;
files_type(polaris_auto_upgrade_server_rp_exec_t)
type polaris_bt_logger_exec_t;
files_type(polaris_bt_logger_exec_t)
type polaris_cmm_exec_t;
files_type(polaris_cmm_exec_t)
type polaris_ngwc_plfm_mgr_exec_t;
files_type(polaris_ngwc_plfm_mgr_exec_t)
type polaris_sif_mgr_exec_t;
files_type(polaris_sif_mgr_exec_t)
type polaris_torch_exec_t;
files_type(polaris_torch_exec_t)
type polaris_xcvr_test_exec_t;
files_type(polaris_xcvr_test_exec_t)
type polaris_faked_exec_t;
files_type(polaris_faked_exec_t)
type polaris_emd_exec_t;
files_type(polaris_emd_exec_t)
type polaris_ngwc_ishow_exec_t;
files_type(polaris_ngwc_ishow_exec_t)
type polaris_gr_mgr_exec_t;
files_type(polaris_gr_mgr_exec_t)
type polaris_ioxss_rp_exec_t;
files_type(polaris_ioxss_rp_exec_t)
)

```

```

)
ifdef(`starfleet_platform',`
type polaris_xcvr_test_exec_t;
files_type(polaris_xcvr_test_exec_t)
type polaris_auto_upgrade_server_rp_exec_t;
files_type(polaris_auto_upgrade_server_rp_exec_t)
type polaris_bt_logger_exec_t;
files_type(polaris_bt_logger_exec_t)
type polaris_cmm_exec_t;
files_type(polaris_cmm_exec_t)
type polaris_ngwc_plfm_mgr_exec_t;
files_type(polaris_ngwc_plfm_mgr_exec_t)
type polaris_sif_mgr_exec_t;
files_type(polaris_sif_mgr_exec_t);
type polaris_torch_exec_t;
files_type(polaris_torch_exec_t);
)

type polaris_disk_ucode0_t;
files_type(polaris_disk_ucode0_t);

type polaris_nplum_power_file_t;
polaris_pfile_type(polaris_nplum_power_file_t)

#permission for /u0
optional_policy(
    gen_require(
        type polaris_periodic_t;
    )
    polaris_disk_ucode0_read_lnk(polaris_periodic_t)
)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwc.te
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#
# February 2020, Victor Kamensky
#
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#

## <summary>Polaris cfmgr Policy Rules.</summary>

#####
## <summary>
##   Write cfmgr /var/run socket file

```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cfgmgr_var_sock_write`,`
    gen_require(`
        type polaris_cfgmgr_t;
        type polaris_cfgmgr_var_run_t;
        type var_run_t;
    `)
    write_sock_files_pattern($1, var_run_t, polaris_cfgmgr_var_run_t)
    allow $1 polaris_cfgmgr_t:unix_stream_socket { connectto };
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscfgmgr.if

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```

#
# March 2017, Victor Kamensky
#
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#

```

```

policy_module(polarisstackmgr, 1.0);

```

```

gen_require(`
    type polaris_stack_mgr_t;
`)
polaris_btrace_data_manage(polaris_stack_mgr_t)
polaris_crft_data_manage(polaris_stack_mgr_t)
polaris_chasfs_manage(polaris_stack_mgr_t)
polaris_tdlresolve_read(polaris_stack_mgr_t)
polaris_tdlldb_list_dirs(polaris_stack_mgr_t)
polaris_cpld_read(polaris_stack_mgr_t)
polaris_lua_read(polaris_stack_mgr_t)
polaris_flashlib_read(polaris_stack_mgr_t)

polaris_rpc_sman_ui_serv_connect(polaris_stack_mgr_t)

polaris_db_tdlldb_dir_use(polaris_stack_mgr_t)

# allow to send message to /dev/log
logging_send_syslog_msg(polaris_stack_mgr_t)

```

```

allow polaris_stack_mgr_t self:capability { dac_override };

polaris_dyncfg_tmp_read(polaris_stack_mgr_t)

corecmd_exec_bin(polaris_stack_mgr_t)
corecmd_exec_shell(polaris_stack_mgr_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_stack_mgr_t)

# read /proc/cmdline
kernel_read_system_state(polaris_stack_mgr_t)

# open /dev/ttyS0 console in stack_console_write_init
term_use_unallocated_ttys(polaris_stack_mgr_t)

# on ngwc/vwlc FIPS code reads /tmp/hw_entropy
polaris_hw_entropy_use(polaris_stack_mgr_t)

#stackmgr runs mcp_trace_request.sh
polaris_trace_request_domtrans(polaris_stack_mgr_t)

#stack_mgr needs to be able to access /tmp/issu_stk/prst_sync_rld_info_prsd
polaris_issu_stack_tmp_manage(polaris_stack_mgr_t)

# may use mcp_chvrf.sh to access other nodes in system.
# Note that we do not actually need to transition to the chvrf domain, however
# a file descriptor leak can occur and the domain transition permission macro
# expands to allow polaris_chvrf_t to access the fifo
polaris_chvrf_domtrans(polaris_stack_mgr_t)

#Allow read on bootflash to be able to read reload_history
polaris_bootflash_read(polaris_stack_mgr_t)

# stackmgr tmp files
type polaris_stack_mgr_tmp_t;
files_tmp_file(polaris_stack_mgr_tmp_t)
files_tmp_filetrans(polaris_stack_mgr_t, polaris_stack_mgr_tmp_t, file, "ngwc_reload_reason")
manage_files_pattern(polaris_stack_mgr_t, polaris_stack_mgr_tmp_t, polaris_stack_mgr_tmp_t)

allow polaris_stack_mgr_t self:capability sys_nice;
allow polaris_stack_mgr_t self:process setsched;

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisstackmgr.te

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```
#
# January 2018, Manohar Hungund
#
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#
```

```
# polarisoctdplogrp file contexts place holder
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisoctdplogrp.fc
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
# February 2020, Victor Kamensky
#
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#
```

```
## <summary>Polaris cedge_start Policy Rules.</summary>
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscedgestart.if
```

```
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```

```
dnl
```

```
dnl April 2018, Victor Kamensky
```

```
dnl
```

```
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
```

```
dnl All rights reserved
```

```
dnl
```

```
define(^ polaris_mqipc_service_server_aux',`dnl
```

```
type $1;
```

```
polaris_mqipc_type($1)
```

```
polaris_mqipc_$2_create_name($3)')
```

```
define(^ polaris_mqipc_service_server',`dnl
```

```
polaris_mqipc_service_server_aux(mqipc_label($1), mqipc_stem($1), process_label($2))dnl
```

```
')
```

```
define(^ polaris_mqipc_service_client_aux',`dnl
```

```
polaris_mqipc_$2_use($3)')
```

```
define(^ polaris_mqipc_service_client',`dnl
```

```
polaris_mqipc_service_client_aux(mqipc_label($1), mqipc_stem($1), process_label($2))dnl
```

```
')
```

```
define(`polaris_mqipc_service_server_elastic_client`,`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_mqipc\_te.m4

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```
#  
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#  
  
## <summary>Polaris polarisqfp Policy Rules.</summary>
```

```
#####  
## <summary>  
## Work (read, write, ioctl) with /dev/netmap device  
## </summary>  
## <param name="domain">  
## <summary>  
## Domain allowed access.  
## </summary>  
## </param>  
#
```

```
interface(`polaris_netmap_dev_use`,`  
gen_require(`  
type device_t;  
type polaris_netmap_device_t;  
)  
write_chr_files_pattern($1, device_t, polaris_netmap_device_t)  
read_chr_files_pattern($1, device_t, polaris_netmap_device_t)  
allow $1 polaris_netmap_device_t:chr_file map;  
)
```

```
#####  
## <summary>  
## Work (read, write, ioctl) with /dev/svc_eng_puntNN devices  
## </summary>  
## <param name="domain">  
## <summary>  
## Domain allowed access.  
## </summary>  
## </param>  
#  
interface(`polaris_svc_eng_punt_dev_use`,`  
gen_require(`  
type device_t;
```

```

type polaris_sep_device_t;
)
write_chr_files_pattern($1, device_t, polaris_sep_device_t)
read_chr_files_pattern($1, device_t, polaris_sep_device_t)
)

#####
## <summary>
## Allow access to semaphore with type polaris_qfp_t
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_qfp_sem_use`,
gen_require(
type polaris_qfp_t;
)
allow $1 polaris_qfp_t:sem rw_sem_perms;
)

#####
## <summary>
## Send messages to qfp unix datagram sockets.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_qfp_dgram_send`,
gen_require(
type polaris_qfp_t;
)

allow $1 polaris_qfp_t:unix_dgram_socket sendto;
)

# CSR & C8KV infiniband devices in Azure
interface(`polaris_infiniband_dev_use`,
gen_require(
type device_t;
type polaris_infiniband_device_t;
)
write_chr_files_pattern($1, device_t, polaris_infiniband_device_t)

```

```

    read_chr_files_pattern($1, device_t, polaris_infiniband_device_t)
    allow $1 polaris_infiniband_device_t:chr_file map;
)

#####
## <summary>
##   Execute iodbd.sh script in the polaris_iodbd_t domain.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_iodbd_domtrans`,`
    gen_require(`
        type polaris_iodbd_t, polaris_iodbd_exec_t;
    `)

    corecmd_search_bin($1)
    domtrans_pattern($1, polaris_iodbd_exec_t, polaris_iodbd_t)
)

#####
## <summary>
##   Manage files and directoris under /tmp/iodb
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_iodb_tmp_manage`,`
    gen_require(`
        type polaris_iodb_tmp_t;
    `)

    manage_files_pattern($1, polaris_iodb_tmp_t,polaris_iodb_tmp_t)
    manage_dirs_pattern($1, polaris_iodb_tmp_t, polaris_iodb_tmp_t)

    fs_getattr_tmpfs($1)
)

#####
## <summary>
##   Manage files and directoris under /tmp/memif

```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_qfp_memif_manage`,`
    gen_require(`
        type polaris_qfp_memif_t;
    `)
    manage_files_pattern($1, polaris_qfp_memif_t, polaris_qfp_memif_t)
    manage_sock_files_pattern($1, polaris_qfp_memif_t, polaris_qfp_memif_t)
    gen_require(`
        type tmp_t;
    `)
    manage_dirs_pattern($1, { tmp_t polaris_qfp_memif_t }, polaris_qfp_memif_t)
    allow $1 polaris_qfp_memif_t:file map;
`)

```

#####

```

## <summary>
##   polaris_qfp_log_manage
## </summary>
## <param name="filename">
##   <summary>
##     Name of the file being managed.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_qfp_log_manage`,`
    type polaris_qfp_var_log_t;
    logging_log_file(polaris_qfp_var_log_t)
    logging_log_filetrans(polaris_qfp_t, polaris_qfp_var_log_t, file, $1)
    manage_files_pattern(polaris_qfp_t, var_log_t, polaris_qfp_var_log_t)
`)

```

#####

```

## <summary>
##   Work (read, write, ioctl) with /dev/icp_adf_ctl and
## /dev/icp_dev_mem devices
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>

```

```

## </param>
#
interface(`polaris_icp_dev_use',`
gen_require(`
    type device_t;
    type polaris_icp_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_icp_device_t)
    read_chr_files_pattern($1, device_t, polaris_icp_device_t)
    allow $1 polaris_icp_device_t:chr_file map;
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisqfp.if

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```

#
# March 2017, Victor Kamensky
#
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#

```

```

/usr/binos/bin/*.linux_iosd.*ms -- gen_context(system_u:object_r:polaris_iosd_exec_t,s0)
/usr/binos/bin/mcpcc-lc-ms -- gen_context(system_u:object_r:polaris_iosd_exec_t,s0)

```

```

/tmp/boottime          gen_context(system_u:object_r:polaris_iosd_tmp_files_t,s0)
/tmp/booted            gen_context(system_u:object_r:polaris_iosd_tmp_files_t,s0)
/tmp/restconf(/.*)?   gen_context(system_u:object_r:polaris_restconf_tmp_t,s0)

```

```

/tmp/netio0(/.*)?     gen_context(system_u:object_r:polaris_iosd_tmp_files_t,s0)
/tmp/nginx.conf       gen_context(system_u:object_r:httpd_config_t,s0)

```

```

/bootflash/.geo(/.*)? gen_context(system_u:object_r:polaris_geodb_files_t,s0)
/harddisk/.geo(/.*)?  gen_context(system_u:object_r:polaris_geodb_files_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisiosd.fc

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```

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# March 2017, Victor Kamensky
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#

```

## <summary>Polaris cli\_agent Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscliagent.if

No license file was found, but licenses were detected in source scan.

#

# August 2017, Shawn Lu

#

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#

# polarisrogued file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrogued.fc

No license file was found, but licenses were detected in source scan.

#

# July 2017, Victor Kamensky

#

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#

## <summary>Polaris MCP Platform Policy Rules.</summary>

#####

## <summary>

## Work (read, write, ioctl) with /dev/scooby

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_scooby\_dev\_use`,`

gen\_require(`

type device\_t;

type polaris\_scooby\_device\_t;

`)

write\_chr\_files\_pattern(\$1, device\_t, polaris\_scooby\_device\_t)

read\_chr\_files\_pattern(\$1, device\_t, polaris\_scooby\_device\_t)

`)

#####

## <summary>

```

## Work (read, write, ioctl) with /dev/spa[0123]
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_spa_dev_use',`
gen_require(`
    type device_t;
    type polaris_spa_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_spa_device_t)
    read_chr_files_pattern($1, device_t, polaris_spa_device_t)
    allow $1 polaris_spa_device_t:chr_file map;
`)

#####
## <summary>
## Work (read, write, ioctl) with /dev/htdp[0-9]*
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_htdp_dev_use',`
gen_require(`
    type device_t;
    type polaris_htdp_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_htdp_device_t)
    read_chr_files_pattern($1, device_t, polaris_htdp_device_t)
`)

#####
## <summary>
## Work (read, write, ioctl) with /sys/devices/virtual/sys_platform
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_sysfs_platform_dev_use',`

```

```

gen_require(
    type polaris_sysfs_platform_t;
)
    manage_files_pattern($1, polaris_sysfs_platform_t, polaris_sysfs_platform_t)
)

```

```
#####
```

```

## <summary>
##   Work (read, write, ioctl) with /dev/ds31408
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface( polaris_ds31408_dev_use,`
    gen_require(
        type device_t;
        type polaris_ds31408_device_t;
    )
    rw_chr_files_pattern($1, device_t, polaris_ds31408_device_t)
)

```

```
#####
```

```

## <summary>
##   Allow access to /dev/cbdma
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface( polaris_cbdma_dev_use,`
    gen_require(
        type device_t;
        type polaris_cbdma_device_t;
    )
    write_chr_files_pattern($1, device_t, polaris_cbdma_device_t)
    read_chr_files_pattern($1, device_t, polaris_cbdma_device_t)
    allow $1 polaris_cbdma_device_t:chr_file map;
)

```

```
#####
```

```

## <summary>
##   Allow access to /dev/cpp_htdp
## </summary>
## <param name="domain">

```

```

## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_cpp_htdp_dev_use`,`
    gen_require(`
        type polaris_cpp_htdp_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_cpp_htdp_device_t)
    read_chr_files_pattern($1, device_t, polaris_cpp_htdp_device_t)
    allow $1 polaris_cpp_htdp_device_t:chr_file map;
`)

```

#####

```

## <summary>
## Allow access to /dev/n2_device
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_n2_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_n2_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_n2_device_t)
    read_chr_files_pattern($1, device_t, polaris_n2_device_t)
`)

```

#####

```

## <summary>
## Allow access to /dev/cy2213
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_cy2213_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_cy2213_device_t;
    `)

```

```
write_chr_files_pattern($1, device_t, polaris_cy2213_device_t)
read_chr_files_pattern($1, device_t, polaris_cy2213_device_t)
')
```

```
#####
```

```
## <summary>
## Allow access to /dev/vega
## </summary>
```

```
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
```

```
#
```

```
interface(`polaris_vega_dev_use`,`
gen_require(`
type device_t;
type polaris_vega_device_t;
`)
write_chr_files_pattern($1, device_t, polaris_vega_device_t)
read_chr_files_pattern($1, device_t, polaris_vega_device_t)
')
```

```
#####
```

```
## <summary>
## Work (read, write, ioctl) with /dev/dash_fpga device
## </summary>
```

```
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
```

```
#
```

```
interface(`polaris_dash_dev_mcp_use`,`
gen_require(`
type device_t;
type polaris_dash_device_t;
`)
write_chr_files_pattern($1, device_t, polaris_dash_device_t)
read_chr_files_pattern($1, device_t, polaris_dash_device_t)
allow $1 polaris_dash_device_t:chr_file map;
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismcp.if

No license file was found, but licenses were detected in source scan.

dnl

```
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl Crankshaft (Overlord, Utah and Fugazi) Platform Max Bay Limits
max_bay_map_set(`rp', `per_bay', 3)
max_bay_map_set(`cc', `per_bay', 3)
max_bay_map_set(`fp', `per_bay', 3)

max_bay_ripc_map_set(`rp', `per_bay', 3)
max_bay_ripc_map_set(`cc', `per_bay', 3)
max_bay_ripc_map_set(`fp', `per_bay', 3)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/mcpcmaps.m4
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
# Copyright (c) 2016-2021 by Cisco Systems, Inc.
# All rights reserved
#
```

```
policy_module(polarisiosd, 1.0);
```

```
gen_require(`
    type polaris_iosd_t;
`)
```

```
#####
# mqipc manual, one that missing in platform tdl file
#####
```

```
ifdef(`nyquist_platform',`
gen_require(`
    type polaris_bt_logger_iosd_mqipc_t;
`)
# iosd may start first and create this mqipc channel
polaris_mqipc_create_name(polaris_iosd_t, polaris_bt_logger_iosd_mqipc_t, bt_logger_iosd)
`)
```

```
polaris_btrace_data_manage_all(polaris_iosd_t)
polaris_chasfs_manage(polaris_iosd_t)
polaris_tdlresolve_read(polaris_iosd_t)
polaris_tdlldb_list_dirs(polaris_iosd_t)
polaris_cpuld_read(polaris_iosd_t)
```

```

polaris_lua_read(polaris_iosd_t)
polaris_flashlib_read(polaris_iosd_t)
polaris_crft_data_manage_all(polaris_iosd_t)
optional_policy(
polaris_gnmib_gnoi_images_manage(polaris_iosd_t)
')

polaris_ripc_sman_ui_serv_connect(polaris_iosd_t)

polaris_db_tdlldb_dir_use(polaris_iosd_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_iosd_t)

# allow iosd read/write via hostname <>
systemd_hostnamed_manage_config(polaris_iosd_t)

# creates /etc/netns/1/resolv.conf via ip domain-name <> command
# creates /etc/netns/vrf.VRFNAME via ip vfr VRFNAME command
# creates /etc/netns/vrf.VRFNAME/resolv.conf via ip
# domain-name vrf VRFNAME <> command
gen_require(
    type net_conf_t;
)
files_etc_filetrans(polaris_iosd_t, net_conf_t, file, "resolv.conf")
files_etc_filetrans(polaris_iosd_t, net_conf_t, file, "hosts")
files_etc_filetrans(polaris_iosd_t, net_conf_t, dir, "netns")
sysnet_manage_config(polaris_iosd_t)
sysnet_manage_config_dirs(polaris_iosd_t)

# for pluggable FS, allow iosd to access files on them.
polaris_getattr_removable(polaris_iosd_t)
polaris_removable_manage(polaris_iosd_t)
fs_read_removable_symlinks(polaris_iosd_t)

polaris_lsmapi_dev_use(polaris_iosd_t)
polaris_lsmapi_sysctl_read(polaris_iosd_t)
polaris_cfg_data_manage(polaris_iosd_t)
polaris_proc_rmonbifo_read(polaris_iosd_t)

polaris_icc_broken_relocations(polaris_iosd_t)

allow polaris_iosd_t self:capability { sys_nice chown fsetid sys_rawio dac_override dac_read_search ipc_lock };

gen_require(
    type httpd_config_t;
    type tmp_t;
)

```

```

# iosd creates /tmp/nginx.conf file
manage_files_pattern(polaris_iosd_t, tmp_t, httpd_config_t)
# transition nginx.conf into httpd_config_t
files_tmp_filetrans(polaris_iosd_t, httpd_config_t, file, "nginx.conf")
# RW access to /usr/binos/conf/nginx-conf/servers (utd feature)
manage_dirs_pattern(polaris_iosd_t, httpd_config_t, httpd_config_t)

#iosd create /tmp/nginx/cert/ca.cert
polaris_nginx_tmp_manage(polaris_iosd_t)

# !!!LOOK AT ME!!! - we allow iosd to read raw memory
# dev_read_raw_memory(polaris_iosd_t)

polaris_flashlib_write(polaris_iosd_t)
polaris_nvram_manage(polaris_iosd_t)
polaris_persistent_manage(polaris_iosd_t)

# smu management in iosd (linked in via libbcrdu.so) accesses
# files created by the installer under /tmp/patch
polaris_install_tmp_read(polaris_iosd_t)

optional_policy(`
polaris_cpp_tmp_ifdev_use(polaris_iosd_t)
`)

polaris_dyncfg_tmp_read(polaris_iosd_t)

# lsmpi_fetch_linux_ifindex tries to ioctl(skfd, SIOCGIFINDEX, &ifr) on
# non existent ethN interface, as result kernel triggers attempt to
# load kernel module that would correspond to such interface. Deny
# and don't audit iosd_t attempt to load kernel modules.
# LOOK AT ME: in long term we don't want iosd even try to load modules
# and we would actually would want to report and fail such
kernel_dontaudit_request_load_module(polaris_iosd_t)

# iosd calls nice function to change fast path priority (mcp_fastpath_thread_func)
allow polaris_iosd_t self:process setsched;

ifdef(`crankshaft_family',`
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
`)

ifdef(`mcp_family',`
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
allow polaris_iosd_t polaris_iosd_t:tun_socket relabelfrom;

```

```

)

# on ultra iosd is figuring out parameters of interfaces of underlying
# hypervisors kvm, vmware, etc. See vxe_gethd_ifdb_scan
#ifdef(`crankshaft_family',`
dev_rw_sysfs(polaris_iosd_t)
polaris_disk_objstore_manage(polaris_iosd_t)
)
#ifdef(`vxe_family',`
dev_read_sysfs(polaris_iosd_t)
polaris_disk_objstore_manage(polaris_iosd_t)
polaris_objstore_sem_use(polaris_iosd_t)
)
#ifdef(`vwlc_platform',`
polaris_disk_objstore_manage(polaris_iosd_t)
optional_policy(`
    polaris_vwlc_grub_efi_use(polaris_iosd_t)
)
)
#ifdef(`wlc_family',`
dev_read_sysfs(polaris_iosd_t)
polaris_tlscd_uds_manage(polaris_iosd_t)
gen_require(`
    type polaris_tlscd_t;
)
allow polaris_iosd_t polaris_tlscd_t:unix_dgram_socket sendto;
)
# on 1ng mcpsc-lc-ms reads /sys/devices/system/cpu/online
#ifdef(`mcp_family',`
dev_read_sysfs(polaris_iosd_t)
)
# neptune need to figure fan type by reading
# /sys/bus/platform/devices/nios/n2h_fan_ctrl_fan_tray_status
#ifdef(`neptune_platform',`
dev_read_sysfs(polaris_iosd_t)
)
# radium need to figure fan type by reading
# /sys/bus/platform/devices/nios/n2h_fan_ctrl_fan_tray_status
#ifdef(`radium_platform',`
dev_read_sysfs(polaris_iosd_t)
)
# __get_nprocs opens /sys/devices/system/cpu/online
#ifdef(`quake_platform',`
dev_read_sysfs(polaris_iosd_t)
)
# __get_nprocs opens /sys/devices/system/cpu/online
#ifdef(`supernova_platform',`
dev_read_sysfs(polaris_iosd_t)
)

```

```

)

# work with /tmp/boottime, /tmp/booted files: create/write
type polaris_iosd_tmp_files_t;
files_tmp_file(polaris_iosd_tmp_files_t)
files_tmp_filetrans(polaris_iosd_t, polaris_iosd_tmp_files_t, file, "boottime")
files_tmp_filetrans(polaris_iosd_t, polaris_iosd_tmp_files_t, file, "booted")
create_files_pattern(polaris_iosd_t, polaris_iosd_tmp_files_t, polaris_iosd_tmp_files_t)

#allow polaris_iosd_t polaris_udev_tmp_files_t:dir { getattr open read search };
#allow polaris_iosd_t polaris_udev_tmp_files_t:file { open, read, write };
# LOOK AT ME (need to review write access with iosd team)
polaris_udev_tmp_manage(polaris_iosd_t)

# work with /tmp/restconf
type polaris_restconf_tmp_t;
files_tmp_file(polaris_restconf_tmp_t)
polaris_restconf_tmp_use(polaris_iosd_t)

files_tmp_filetrans(polaris_iosd_t, polaris_restconf_tmp_t, dir, "restconf")
filetrans_pattern(polaris_iosd_t, polaris_restconf_tmp_t, polaris_restconf_tmp_t, file)

# work with /tmp/netio0
files_tmp_filetrans(polaris_iosd_t, polaris_iosd_tmp_files_t, dir, "netio0")
# sockets and dirs created under /tmp/netio0
manage_dirs_pattern(polaris_iosd_t, polaris_iosd_tmp_files_t, polaris_iosd_tmp_files_t)
manage_sock_files_pattern(polaris_iosd_t, polaris_iosd_tmp_files_t, polaris_iosd_tmp_files_t)
allow polaris_iosd_t self:unix_dgram_socket create_socket_perms;

gen_require(
    type inetd_child_t;
)
# sendto permission for /tmp/netio0/ttyC100
allow polaris_iosd_t inetd_child_t:unix_dgram_socket sendto;

polaris_socketat_nsfs_read(polaris_iosd_t)

# onep uses TIPC sockets see onep_tipc_transport_start
allow polaris_iosd_t self:socket { bind create listen accept getattr read write ioctl getopt setopt };

# mcp_eobc_create_socket creates UDP socket for eobc
corenet_udp_bind_polaris_iosd_eobc_port(polaris_iosd_t)
gen_require(
    type node_t;
)
allow polaris_iosd_t node_t:udp_socket node_bind;
allow polaris_iosd_t self:udp_socket { bind create ioctl setopt read write };

```

```

# direct access to serial TTY devices like /dev/ttyS1
term_use_unallocated_ttys(polaris_iosd_t)

# on ultra cvac_load_config function tried to access cdrom0:/iosxe_config.txt
# and if exists read
#ifdef(^vxe_family',`
fs_read_iso9660_files(polaris_iosd_t)
`)
#ifdef(^wlc_family',`
fs_read_iso9660_files(polaris_iosd_t)
`)

# ifs_get_free_bytes invokes mcp_fs_statfs and eventually mcp_wrapper_statvfs
# with "/bootflash"...this needs attr access for "/"
fs_getattr_xattr_fs(polaris_iosd_t)

# iosd works with cpp /dev/shm//cpp_ifdev_shmem shared mmory
optional_policy(`
polaris_cpp_tmpfs_ifdev_rw(polaris_iosd_t)
`)

# iosd reads/writes into grubenv for confreg
optional_policy(`
polaris_grub_efi_use(polaris_iosd_t)
`)

# when /bootflash or /harddisk are 100% full
allow polaris_iosd_t self:capability sys_resource;

# mcp_set_clock wants to call settimeofday
allow polaris_iosd_t self:capability sys_time;

# Need this for bluetooth to work. HCI library uses this
allow polaris_iosd_t self:capability net_raw;

#ifdef(^mcp_family',`
polaris_obfl_data_read(polaris_iosd_t)
`)

# iosd uses quack on mcp and crankshaft and ngwc
#ifdef(^mcp_family',`
polaris_quack_dev_use(polaris_iosd_t)
`)
#ifdef(^crankshaft_family',`
polaris_quack_dev_use(polaris_iosd_t)
`)
#ifdef(^ngwc_family',`
polaris_quack_dev_use(polaris_iosd_t)
`)

```

```

)
#ifdef(^qwlc_platform',`
polaris_quack_dev_use(polaris_iosd_t)
)
#ifdef(^katar_platform',`
polaris_quack_dev_use(polaris_iosd_t)
)

#ifdef(^mcp_family',`
polaris_spa_dev_use(polaris_iosd_t)
polaris_sysfs_platform_dev_use(polaris_iosd_t)
)

# on lng write/ioctl into /dev/cpld-ha
# on vwlc ha scenario, iosd needs write access to /dev/cpld-ha
optional_policy(`
polaris_cpld_dev_use(polaris_iosd_t)
)

# deals with /dev/shm files semaphors; like uuid_sem semaphore
# created by btrace_get_uuid function
type polaris_iosd_tmpfs_t;
files_tmpfs_file(polaris_iosd_tmpfs_t)
fs_tmpfs_filetrans(polaris_iosd_t, polaris_iosd_tmpfs_t, file)
manage_files_pattern(polaris_iosd_t, tmpfs_t, polaris_iosd_tmpfs_t)

optional_policy(`
polaris_iodb_tmp_manage(polaris_iosd_t)
)

# on ngwc FIPS code reads /tmp/hw_entropy
# seems like iosd can delete the file as well
polaris_hw_entropy_create(polaris_iosd_t)

optional_policy(`
#on macallan iosd needs to access /dev/cpld
polaris_cpld_dev_read(polaris_iosd_t)
)

# on tsn iosd needs write access to
# sys/devices/platform/cpld/reg_rp_reset_button_status
# sys/devices/platform/cpn-110-master DSR/DTR status
#ifdef(^crankshaft_family',`
type polaris_quake_i2c_t;

polaris_cpld_write(polaris_iosd_t)
polaris_ggpio_dev_read_write(polaris_iosd_t)

```

```

polaris_quake_i2c_manage(polaris_iosd_t)
')

ifdef(^katar_platform',`
polaris_cpld_write(polaris_iosd_t)
')

# on tsn iosd needs access to /sys/devices/platform/moka_fpga
# /sys/devices/platform/moka_fpga/led_status
optional_policy(`
polaris_mokafpga_rw(polaris_iosd_t)
')

# iosd reads /tmp/iosd_level
polaris_lm_tmp_read(polaris_iosd_t)

# iosd needs manage_dirs, manage_files and manage_lnk
# permissions at "/tmp/ufs/lic0/<remote_ip>/*"
optional_policy(`
polaris_ncd_tmp_manage(polaris_iosd_t)
')

# access NFS mounted directories from other nodes or members
fs_getattr_nfs(polaris_iosd_t)

# mcp/mcprp/if_unix_se.c code works with /sys/devices/virtual/contdev
# files and /proc/net/dev
polaris_manage_contdev_dev(polaris_iosd_t)
kernel_read_network_state(polaris_iosd_t)

# iosd creates /tmp/iox_xml.dat file
optional_policy(`
polaris_iox_manage_tmp_files(polaris_iosd_t)
')

polaris_caf_var_run_files_manage(polaris_iosd_t)
container_read_lib_files(polaris_iosd_t)

# work with files like /tmp/rp/.shell_exec.5B1BF1D7648E21AEE3000002
type polaris_iosd2iox_tmp_t;
files_tmp_file(polaris_iosd2iox_tmp_t)
files_tmp_filetrans(polaris_iosd_t, polaris_iosd2iox_tmp_t, file)
polaris_iosd2iox_tmp_manage(polaris_iosd_t)
# work with response
optional_policy(`
    polaris_iox2iosd_tmp_manage(polaris_iosd_t)
')

```

```

polaris_sandbox_file_dir_list(polaris_iosd_t)

# lfts 2.0 iosd provides route information to kernel. it talks
# using generic netlink family socket. See iosd bsock_sar_netlink_process
# process
allow polaris_iosd_t self:netlink_generic_socket create_socket_perms;
allow polaris_iosd_t self:netlink_socket create_socket_perms;

# LOOK AT ME
# on nyquist iosd accesses files like lic0-2:/sanosync.data.readLock
# from saLockCheck function and it happens just right after lic0-2 was
# mounted over NFSv4. It seems that labels from remote node did not
# take an effect yet. For now allow access to dir and files that
# are not yet labeled.
ifdef(`nyquist_platform',`
files_manage_isid_type_dirs(polaris_iosd_t)
files_manage_isid_type_files(polaris_iosd_t)
')

ifdef(`ngwc_family',`
polaris_getattr_filesystem_disk_ucode(polaris_iosd_t)
#policy needed for accessing sys/bus/usb/drivers/usb/*/authorized
dev_rw_sysfs(polaris_iosd_t)
')

ifdef(`passport_platform',`
polaris_cm_rp_tmp_manage(polaris_iosd_t)
')

polaris_lfts_dev_use(polaris_iosd_t)

# /dev/shm/vrf_shm access for show command
polaris_vrf_shm_manage(polaris_iosd_t)

# /dev/shm/sdm access
optional_policy(`
polaris_sdm_shm_manage(polaris_iosd_t)
')

# iosd needs access to logging facility
logging_send_syslog_msg(polaris_iosd_t)

#iosd need access to /webui/*.odm files
polaris_read_webui_files(polaris_iosd_t)

# allow getting binos networking stats AF_NETLINK
allow polaris_iosd_t self:netlink_route_socket rw_netlink_socket_perms;

```

```

# confd needs to talk with IOSd via real linux udp snmp socket
allow polaris_iosd_t self:udp_socket { create_socket_perms recv_msg send_msg };
corenet_udp_bind_snmp_port(polaris_iosd_t)

# PLEASE LOOK AT code should not use sysv IPC ARIs,
# instead POSIX variants must be used. Remove after
# code changed in proper way
# allow access sysv semaphor created by qfp process
ifdef(`vxe_family',`
polaris_qfp_sem_use(polaris_iosd_t)
')
ifdef(`wlc_family',`
polaris_qfp_sem_use(polaris_iosd_t)
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
')

# lsmpi replacement punt/inject over domain sockets
ifdef(`vxe_family',`
polaris_pi_uds_manage(polaris_iosd_t)
polaris_qfp_dgram_send(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
ifconfig_attach_tun_iface(polaris_iosd_t)
')

# CSR when operating in VGA mode uses /dev/tty0 as the console for the system
# (including IOSD).IOSD setup scripts pass in the tty device(s) to use in the
# REAL_CONSOLE and REAL_AUX environment variables. IOSD configures the tty
# for its operation and hence need the capability.
allow polaris_iosd_t self:capability sys_tty_config;

# LOOK AT ME: hot patch upon a reboot requires execmem operation - which
# currently is not allowed. Remove the following policy when CSCvq59763
# has been completed.
allow polaris_iosd_t self:process execmem;

# /dev/epaN on qwlc/asr1k(mcp)
optional_policy(`
polaris_epa_dev_use(polaris_iosd_t)
')

# /dev/qae_mem device access on overlord
optional_policy(`
polaris_qae_dev_use(polaris_iosd_t)
')

# ioucon binary invoked on standby console attach.
polaris_ioucon_dgram_send(polaris_iosd_t)

```

```

# usb device requires read permissions.
kernel_read_debugfs(polaris_iosd_t)

# iosd requires access to /tmp/sv
#ifdef(^ngwc_family',`
polaris_sv_tmp_use(polaris_iosd_t)
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
`)

polaris_i2c_use(polaris_iosd_t)

# on CSR AWS deployment iosd needs read access to /dev/console
term_read_console(polaris_iosd_t)

# On vxe platforms the cloudint config is stored in /varied. We need
# to be able to read it.
#ifdef(^vxe_family',`
polaris_disk_varied_read(polaris_iosd_t)
`)

# In stacked and ha setup secondary SUP bootflash and hardisk
# are mounted on active and is accessed by iosd.
polaris_getattr_bootflash(polaris_iosd_t)
polaris_getattr_harddisk(polaris_iosd_t)

# read access to /dev/random
dev_read_rand(polaris_iosd_t)

# Allow access of /tmp/maroon_stats files
polaris_maroon_data_manage_all(polaris_iosd_t)

#access to /dev/bp_async device on nanook platform
optional_policy(^
polaris_bp_async_dev_use(polaris_iosd_t)
`)

#Permission for access file attribute to list the file info
polaris_caf_tmp_files_getattr(polaris_iosd_t)

#DB persistence
polaris_tldbpersist_setup(polaris_iosd_t)
polaris_tmp_tlddb_persist_setup(polaris_iosd_t)

# IOSCC needs access to /mnt/firmware for intelligent spa during bootup
polaris_firmware_read(polaris_iosd_t)

```

```

# On Sparrow platform: IOSd requires access to /dev/remap_mem0
# and /dev/usb_console for OOB management
# Also allows access to /dev/sparrow_psu and /dev/net/tun
# /dev/shm/sem._dev_i2c_0 sempaphor
#ifdef(`sparrow_platform',`
gen_require(`
    type polaris_cm_cc_tmpfs_t;
`)
polaris_remap_mem_dev_use(polaris_iosd_t)
term_use_usb_ttys(polaris_iosd_t)
polaris_sparrow_psu_dev_use(polaris_iosd_t)
polaris_i2c_sem_manage(polaris_iosd_t)
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
mmap_files_pattern(polaris_iosd_t, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
`)

# On Blackheart platform: /dev/shm/sem._dev_i2c_0 sempaphor
# Allow access to /tmp/udev/etc/udev/msata/udev-info and /dev/net/tun
# Allow access to /dev/remap_mem0 for alarm port
#ifdef(`blackheart_platform',`
gen_require(`
    type polaris_cm_cc_tmpfs_t;
`)
polaris_udev_access(polaris_iosd_t)
polaris_remap_mem_dev_use(polaris_iosd_t)
polaris_i2c_sem_manage(polaris_iosd_t)
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
mmap_files_pattern(polaris_iosd_t, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
`)

# handle /tmp/rp/.iosp_client_app token
type polaris_iosp_client_app_token_t;
files_tmp_file(polaris_iosp_client_app_token_t)
files_tmp_filetrans(polaris_iosd_t, polaris_iosp_client_app_token_t, file, ".iosp_client_app")
manage_files_pattern(polaris_iosd_t, polaris_iosp_client_app_token_t, polaris_iosp_client_app_token_t)

# handle /tmp/rp/.iosp_client_dmi token
type polaris_iosp_client_dmi_token_t;
files_tmp_file(polaris_iosp_client_dmi_token_t)
files_tmp_filetrans(polaris_iosd_t, polaris_iosp_client_dmi_token_t, file, ".iosp_client_dmi")
manage_files_pattern(polaris_iosd_t, polaris_iosp_client_dmi_token_t, polaris_iosp_client_dmi_token_t)

# handle /tmp/rp/.iosp_dmiauthd token
type polaris_dmiauthd_token_t;
files_tmp_file(polaris_dmiauthd_token_t)
files_tmp_filetrans(polaris_iosd_t, polaris_dmiauthd_token_t, file, ".iosp_dmiauthd")

```

```

manage_files_pattern(polaris_iosd_t, polaris_dmiauthd_token_t, polaris_dmiauthd_token_t)

# handle /tmp/rp/.iosp_gnmib token
type polaris_gnmib_token_t;
files_tmp_file(polaris_gnmib_token_t)
files_tmp_filetrans(polaris_iosd_t, polaris_gnmib_token_t, file, ".iosp_gnmib")
manage_files_pattern(polaris_iosd_t, polaris_gnmib_token_t, polaris_gnmib_token_t)

polaris_udev_tmp_watch(polaris_iosd_t)

# Interfaces needed for Aventus platform, allow access to
# /dev/shm/sem._dev_i2c_0 sempaphor
# /dev/usb_console for OOB management
# /dev/net/tun
# brctl process needs access to fifo_file
ifdef(^aventus_platform',`
gen_require(`
    type brctl_t;
    type polaris_pman_t;
    type polaris_cm_cc_tmpfs_t;
    type ifconfig_t;
    type polaris_i2c_device_t;
`)
polaris_i2c_sem_manage(polaris_iosd_t)
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
term_use_usb_ttys(polaris_iosd_t)
allow brctl_t polaris_pman_t:fifo_file append;
mmap_files_pattern(polaris_iosd_t, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
allow ifconfig_t polaris_i2c_device_t:chr_file { read write };
`)

# allow access and modify files in /tftp/inv directory
# TODO Need to revisit this for further analysis
ifdef(^mcp_family',`
gen_require(`
    type tftpd_dir_rw_t;
`)
read_files_pattern(polaris_iosd_t, tftpd_dir_rw_t, tftpd_dir_rw_t)
`)

#allow access and modify awips file in /bootflash
gen_require(`
type polaris_awips_signature_file_t;
`)
filetrans_pattern(polaris_iosd_t, polaris_disk_bootflash_t, polaris_awips_signature_file_t, file, "awips.json")
allow polaris_iosd_t polaris_awips_signature_file_t:file { write create read open getattr unlink};

```

```

# handle geodb file access
type polaris_geodb_files_t;
polaris_disk_type(polaris_geodb_files_t)
filetrans_pattern(polaris_iosd_t, polaris_disk_bootflash_t, polaris_geodb_files_t, dir, ".geo")
filetrans_pattern(polaris_iosd_t, polaris_disk_harddisk_t, polaris_geodb_files_t, dir, ".geo")
polaris_geodb_files_manage(polaris_iosd_t)

# handle /var/ip_local_port_range
type polaris_ip_linux_port_var_t;
files_tmp_file(polaris_ip_linux_port_var_t)
files_var_filetrans(polaris_iosd_t, polaris_ip_linux_port_var_t, file, "ip_local_port_range")

# linux_iosd-imag access to file /var/ip_local_port_range
manage_files_pattern(polaris_iosd_t, var_t, polaris_ip_linux_port_var_t)

# Allow access to /bootflash/certs
polaris_wlc_ap_cert_manage(polaris_iosd_t)

# commad "ls" on /var/ip_local_port_range
gen_require(
    type polaris_shell_t;
)
allow polaris_shell_t polaris_ip_linux_port_var_t:file getattr;

# handling /boot/vcpu_template.txt or /csl_p_0/vcpu_template.txt file
# created by iosd by platform resource config command
type polaris_iosd_vcpu_t;
files_type(polaris_iosd_vcpu_t)
gen_require(
    type polaris_disk_csl_p_t;
    type polaris_disk_varied_t;
)
filetrans_pattern(polaris_iosd_t, { polaris_disk_csl_p_t polaris_disk_varied_t }, polaris_iosd_vcpu_t, file,
"vcpu_template.txt")
manage_files_pattern(polaris_iosd_t, { polaris_disk_csl_p_t polaris_disk_varied_t }, polaris_iosd_vcpu_t)

# allow open/read/search cgroup files like /sys/fs/cgroup/cpu,cpuacct/machine
fs_read_cgroup_files(polaris_iosd_t)
fs_search_cgroup_dirs(polaris_iosd_t)
# for Dynamic Core Allocation IOSd needs write access to cpu sets/shares
ifdef(`crankshaft_family',`
fs_write_cgroup_files(polaris_iosd_t)
)

# sdwan_admintech_generate() creates admintech and admintech_trace files
gen_require(
    type polaris_admin_tech_data_t;
)

```

```

polaris_bootflash_filetrans(polaris_iods_t, polaris_admin_tech_data_t, file, "admintech")
polaris_bootflash_filetrans(polaris_iods_t, polaris_admin_tech_data_t, file, "admintech_trace")
filetrans_pattern(polaris_iods_t, polaris_chasfs_t, polaris_admin_tech_data_t, file, "ios_admintech_done")
filetrans_pattern(polaris_iods_t, polaris_chasfs_t, polaris_admin_tech_data_t, file, "ios_admintech_request")
polaris_admin_tech_data_manage(polaris_iods_t)
# with "/bootflash"...this needs attr to access for logfile
polaris_user_file_getattr(polaris_iods_t)
allow polaris_iods_t polaris_user_file_t:file { open unlink };
#=====
# petra platform
ifdef(^petra_platform',`
# iosd need access to petra fpga
polaris_iots_fpga_dev_use(polaris_iods_t)
# iosd need access to memory devices
polaris_iots_tm_dev_use(polaris_iods_t)
#allow map permission for /dev/shm/TM_A53_APIS
allow polaris_iods_t polaris_iods_tmpfs_t:file map;
#allow access to polaris_cm_rp_t sem
polaris_cm_rp_sem_use(polaris_iods_t)
#allow access to userio
dev_rw_userio_dev(polaris_iods_t)
allow polaris_iods_t userio_device_t:chr_file { map };
#iosd need access to sysfs
dev_rw_sysfs(polaris_iods_t)
allow polaris_iods_t sysfs_t:file { create map };
dev_manage_sysfs_dirs(polaris_iods_t)
# iosd need access to sdflash files image is stored
polaris_swipedrive_file_manage(polaris_iods_t)
polaris_getattr_swipedrive(polaris_iods_t)
#iosd need access to mmcblk0p3
gen_require(
    type polaris_disk_recovery_t;
)
allow polaris_iods_t polaris_disk_recovery_t:filesystem getattr;
#iosd need access to mmcblk0p2
polaris_getattr_filesystem_disk_ucode(polaris_iods_t)
# iosd need access to /dev/mvDmaDrv
polaris_mvDmaDrv_dev_use(polaris_iods_t)
# iosd need access to /dev/mvIntDrv
polaris_mvIntDrv_dev_use(polaris_iods_t)
#iosd need permission for LED
polaris_led_dev_use(polaris_iods_t)
#iosd need access to rawip socket by initscripts/rc.d/init.d/iptables
allow polaris_iods_t self:rawip_socket create_socket_perms;
#iosd needs access to /opt/cisco/caf/config/system-config.ini
polaris_caf_files_read(polaris_iods_t)
#iosd need permission to /dev/rtc0 done via imsp_update_sw_hwclock()
dev_rw_realtime_clock(polaris_iods_t)

```

```

)
# work with /tmp/usb-disable: create/write
type polaris_iosd_usb_disable_tmp_t;
files_tmp_file(polaris_iosd_usb_disable_tmp_t);
polaris_iosd_usb_disable_tmp_manage(polaris_iosd_t)

ifdef(`ngwc_family',`
# SELINUX Mismatch warning when doing power redundancy configuration commands
# Allow access /bootflash/nplasm-power
polaris_nplasm_power_manage(polaris_iosd_t)
`)

optional_policy(`
  polaris_efi_files_list_dirs(polaris_iosd_t)
`)

# work with /dev/shm/mq.-iosd_to_timingd
type polaris_iosd_timing_mqipc_t;
polaris_mqipc_type(polaris_iosd_timing_mqipc_t)

polaris_mqipc_create_name(polaris_iosd_t, polaris_iosd_timing_mqipc_t, iosd_to_timingd)

# watch /tmp
allow polaris_iosd_t tmp_t:dir watch;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisiosd.te
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#
# January 2018, Manohar Hungund
#
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#

## <summary>Polaris oct_dp_log_rp Policy Rules.</summary>

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisoctdplogrp.if
No license file was found, but licenses were detected in source scan.

#
# February 2020, Victor Kamensky
#
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#

```

```

## <summary>Polaris cedge Policy Rules.</summary>

#####
## <summary>
##   Manage /tmp/xml files and directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cedge_xml_tmp_manage`,`
    gen_require(`
        type polaris_cedge_xml_tmp_t;
    `)
    manage_dirs_pattern($1, polaris_cedge_xml_tmp_t, polaris_cedge_xml_tmp_t)
    manage_files_pattern($1, polaris_cedge_xml_tmp_t, polaris_cedge_xml_tmp_t)
    files_tmp_filetrans($1, polaris_cedge_xml_tmp_t, dir, "xml")

    allow $1 polaris_cedge_xml_tmp_t:dir { watch mounon };
    allow $1 polaris_cedge_xml_tmp_t:file map;
)

#####
## <summary>
##   Manage /tmp/tmp files and directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cedge_tmp_manage`,`
    gen_require(`
        type polaris_cedge_tmp_t;
    `)
    manage_dirs_pattern($1, polaris_cedge_tmp_t, polaris_cedge_tmp_t)
    manage_files_pattern($1, polaris_cedge_tmp_t, polaris_cedge_tmp_t)
    files_tmp_filetrans($1, polaris_cedge_tmp_t, dir, "tmp")

)

#####
## <summary>
##   Manage /etc/viptela files and directories

```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cedge_etc_manage`,`
    gen_require(`
        type polaris_cedge_etc_t;
    `)
    manage_dirs_pattern($1, polaris_cedge_etc_t, polaris_cedge_etc_t)
    manage_files_pattern($1, polaris_cedge_etc_t, polaris_cedge_etc_t)
    manage_lnk_files_pattern($1, polaris_cedge_etc_t, polaris_cedge_etc_t)
    files_etc_filetrans($1, polaris_cedge_etc_t, dir, "viptela")
`)

```

```
#####
```

```

## <summary>
##   Read /etc/viptela files and directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cedge_etc_read`,`
    gen_require(`
        type polaris_cedge_etc_t;
    `)
    search_dirs_pattern($1, polaris_cedge_etc_t, polaris_cedge_etc_t)
    read_files_pattern($1, polaris_cedge_etc_t, polaris_cedge_etc_t)
    read_lnk_files_pattern($1, polaris_cedge_etc_t, polaris_cedge_etc_t)
    files_etc_filetrans($1, polaris_cedge_etc_t, dir, "viptela")
`)

```

```
#####
```

```

## <summary>
##   Watch cedge_etc directories and files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#

```

```

interface(`polaris_cedge_etc_watch`,`
gen_require(
  type polaris_cedge_etc_t;
)
  allow $1 polaris_cedge_etc_t:{ dir file } watch;
)

#####
## <summary>
##   Read access /var/run/netns/* performed from vip_util_set_ns
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cedge_set_ns`,`
  init_read_state($1)
  fs_read_nsfs_files($1)
  sysnet_manage_ifconfig_run($1)
)

#####
## <summary>
##   Read access /proc/1/ns/net performed from vip_util_reset_ns
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cedge_reset_ns`,`
  init_read_state($1)
)

#####
## <summary>
##   Manage /dev/shm viptela files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cedge_tmpfs_manage`,`

```

```

gen_require(
    type polaris_cedge_tmpfs_t;
    type tmpfs_t;
)
fs_tmpfs_filetrans($1, polaris_cedge_tmpfs_t, file)
manage_files_pattern($1, tmpfs_t, polaris_cedge_tmpfs_t)
allow $1 polaris_cedge_tmpfs_t:file map;
)

#####
## <summary>
##   Manage /tmp/.econfd2sysmgr-ipc files and directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_econfd2sysmgr_tmp_manage',`
    gen_require(
        type polaris_econfd2sysmgr_tmp_t;
    )
    manage_dirs_pattern($1, polaris_econfd2sysmgr_tmp_t, polaris_econfd2sysmgr_tmp_t)
    manage_files_pattern($1, polaris_econfd2sysmgr_tmp_t, polaris_econfd2sysmgr_tmp_t)
    files_tmp_filetrans($1, polaris_econfd2sysmgr_tmp_t, dir, ".econfd2sysmgr-ipc")
    allow $1 polaris_econfd2sysmgr_tmp_t:dir watch;
)

#####
## <summary>
##   Manage /tmp/* labeled with polaris_vconfd_cert_tmp_t
##     for vconfd_script_upload_root_ca.crt_chain.sh to access
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_vconfd_cert_tmp_manage',`
    gen_require(
        type polaris_vconfd_cert_tmp_t;
    )
    manage_dirs_pattern($1, polaris_vconfd_cert_tmp_t, polaris_vconfd_cert_tmp_t)
    manage_files_pattern($1, polaris_vconfd_cert_tmp_t, polaris_vconfd_cert_tmp_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscedge.if

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```
#
# March 2017, Victor Kamensky
#
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#

## <summary>Polaris cpp_driver Policy Rules.</summary>

#####
## <summary>
##   Allow access to semaphore with type polaris_cpp_driver_t
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cpp_driver_sem_use',`
    gen_require(`
        type polaris_cpp_driver_t;
    `)
    allow $1 polaris_cpp_driver_t:sem rw_sem_perms;
)`

#####
## <summary>
##   Allow access to shared memory with type polaris_cpp_driver_t
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cpp_driver_shm_use',`
    gen_require(`
        type polaris_cpp_driver_t;
    `)
    allow $1 polaris_cpp_driver_t:shm rw_shm_perms;
)`
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppdriver.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

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#

## <summary>Polaris polarisautoupgrade Policy Rules.</summary>

#####

## <summary>

## Execute auto-upgrade scripts in their own domain

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

## <rolecap/>

#

interface(`polaris\_autoupgrade\_domtrans`,`

gen\_require(`

type polaris\_autoupgrade\_t;

type polaris\_autoupgrade\_exec\_t;

`)

domtrans\_pattern(\$1, polaris\_autoupgrade\_exec\_t, polaris\_autoupgrade\_t)

')

#####

## <summary>

## Manage tmp files created by autoupgrade.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

## <rolecap/>

#

interface(`polaris\_autoupgrade\_tmp\_manage`,`

gen\_require(`

type polaris\_autoupgrade\_tmp\_t;

`)

```
manage_files_pattern($1, polaris_autoupgrade_tmp_t, polaris_autoupgrade_tmp_t)
manage_lnk_files_pattern($1, polaris_autoupgrade_tmp_t, polaris_autoupgrade_tmp_t)
manage_fifo_files_pattern($1, polaris_autoupgrade_tmp_t, polaris_autoupgrade_tmp_t)
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisautoupgrade.if
No license file was found, but licenses were detected in source scan.
```

```
#
# October 2019, Patrick O'Halloran
#
# Copyright (c) 2019-2020 by Cisco Systems, Inc.
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#
## <summary>Polaris CRFT Policy Rules.</summary>
```

```
#####
# CRFT policy
#####
```

```
#####
## <summary>
## Allow read-only access to CRFT generated files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <param name="file_type">
## <summary>
## File type of crft that corresponds to given domain.
## </summary>
## </param>
## <rolebase/>
#
```

```
interface(`polaris_crft_data_read`,
gen_require(`
type polaris_crft_data_t;
type polaris_crft_request_t;
type polaris_crft_request_crft_t;
`
)
```

```
read_lnk_files_pattern($1, polaris_crft_data_t, polaris_crft_data_t)
polaris_disk_bootflash_read_lnk($1)
polaris_disk_harddisk_read_lnk($1)
```

```

    read_files_pattern($1, polaris_crft_request_crft_t, polaris_crft_request_crft_t)
    allow $1 polaris_crft_request_t:fifo_file { ioctl write };
)

#####
## <summary>
##   Manage crft persistent files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_crft_data_manage`,`
    gen_require(`
        type polaris_crft_data_t;
    `)

    manage_dirs_pattern($1, polaris_crft_data_t, polaris_crft_data_t)
    manage_lnk_files_pattern($1, polaris_crft_data_t, polaris_crft_data_t)
    manage_files_pattern($1, polaris_crft_data_t, polaris_crft_data_t)
    # Note: Based on dicussion with SELinux team, we need to call this
    # out specifically here for lnk file access, as:
    # - NGWC /harddisk -(symlink)-> /misc/scratch -(symlink)-> /mnt/sda3/user
    polaris_disk_bootflash_read_lnk($1)
    polaris_disk_harddisk_read_lnk($1)
    allow $1 polaris_crft_data_t:file map;
)

#####
## <summary>
##   Manage crft files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_crft_data_manage_all`,`
    polaris_crft_data_manage($1)

    gen_require(`
        attribute polaris_crft_data_domain;
        type polaris_crft_data_t;

```

```

)

manage_files_pattern($1, polaris_crft_data_t, polaris_crft_data_domain)
manage_lnk_files_pattern($1, polaris_crft_data_t, polaris_crft_data_domain)
allow $1 polaris_crft_data_domain:file map;
)

```

```

#####
## <summary>
## Make the specified type usable as crft data file type.
## </summary>
## <param name="type">
## <summary>
## Type to be used for files.
## </summary>
## </param>
#
interface(`polaris_crft_data_type`,`
    files_type($1)
    polaris_pfile_type($1)
    gen_require(`
        attribute polaris_crft_data_domain;
    `)
    typeattribute $1 polaris_crft_data_domain;
)

```

```

#####
## <summary>
## Process to manage its own crft files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <param name="file_type">
## <summary>
## File type of crft that corresponds to given domain.
## </summary>
## </param>
## <rolebase/>
#
interface(`polaris_crft_data_client`,`
    gen_require(`
        type polaris_crft_data_t;
    `)

    manage_dirs_pattern($1, polaris_crft_data_t, $2)

```

```
manage_files_pattern($1, polaris_crft_data_t, $2)
manage_lnk_files_pattern($1, polaris_crft_data_t, $2)
filetrans_pattern($1, polaris_crft_data_t, $2, file)
allow $1 $2:file map;
')
```

```
#####
```

```
## <summary>
##   Process to manage its own crft files
## </summary>
## <param name="domain_stem">
##   <summary>
##     Steam of domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_crft_data_client_template`,
  gen_require(`
    attribute polaris_crft_data_domain;
    type polaris_crft_data_t;
  `)
)
```

```
type polaris_$1_crft_t;
polaris_crft_data_type(polaris_$1_crft_t)
polaris_crft_data_client(polaris_$1_t, polaris_$1_crft_t)
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscrft.if

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```
#
# March 2017, Victor Kamensky
#
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# All rights reserved
#
```

```
/usr/cpp/bin/cpp_ha_top_level_server -- gen_context(system_u:object_r:polaris_cpp_ha_exec_t,s0)
/usr/cpp/bin/cpp_ha_top_level_server_ledp -- gen_context(system_u:object_r:polaris_cpp_ha_exec_t,s0)
/usr/cpp/bin/cpp_ha_top_level_server_us_ledp -- gen_context(system_u:object_r:polaris_cpp_ha_exec_t,s0)
/usr/cpp/bin/cpp_ha_top_level_server_vwlc -- gen_context(system_u:object_r:polaris_cpp_ha_exec_t,s0)
/usr/cpp/bin/cpp_ha_top_level_server_vwlc_ledp -- gen_context(system_u:object_r:polaris_cpp_ha_exec_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppha.fc

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```
#
# March 2017, Victor Kamensky
#
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#

policy_module(polariscfg, 1.0);

#####
# Cfg files policy
#####

type polaris_cfg_data_t;
files_type(polaris_cfg_data_t)

gen_require(
    attribute polaris_extended_domain;
)

files_tmp_filetrans(polaris_extended_domain, polaris_cfg_data_t, dir, "cfg")

#####
# cfg_sync.sh policy
#####

polaris_utility_domain_template(cfg_sync)

polaris_bexecute_domain(polaris_cfg_sync_t, polaris_cfg_sync_exec_t)

polaris_boot_tmp_read(polaris_cfg_sync_t)
polaris_btrace_data_manage(polaris_cfg_sync_t)
polaris_chasfs_read(polaris_cfg_sync_t)
polaris_cpld_read(polaris_cfg_sync_t)
polaris_use_btrace_fifo(polaris_cfg_sync_t)

corecmd_exec_bin(polaris_cfg_sync_t)
auth_use_nsswitch(polaris_cfg_sync_t)

polaris_bootflash_read(polaris_cfg_sync_t)
polaris_nvram_manage(polaris_cfg_sync_t)
telnet_use_ptys(polaris_cfg_sync_t)

gen_require(
    type rsync_t;
)
```

```
rsync_entry_domtrans(polaris_cfg_sync_t, rsync_t)
allow rsync_t polaris_cfg_sync_t:process sigchld;
# file descriptor leak when rsync is called
allow rsync_t polaris_cfg_sync_t:fifo_file { write getattr };
```

```
logging_send_syslog_msg(polaris_cfg_sync_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscfg.te
```

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```
dnl
```

```
dnl April 2018, Victor Kamensky
```

```
dnl
```

```
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
```

```
dnl All rights reserved
```

```
dnl
```

```
# polarisvxeipcbaseauto file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_base_fc.m4
```

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```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2016-2020 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
## <summary>Polaris cm_fp Policy Rules.</summary>
```

```
#####
```

```
## <summary>
```

```
## Execute cmand_fp in the polaris_cm_fp_t domain.
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed to transition.
```

```
## </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_cm_fp_domtrans',`
```

```
gen_require(`
```

```
type polaris_cm_fp_t, polaris_cm_fp_exec_t;
```

```
`)
```

```
corecmd_search_bin($1)
```

```

domtrans_pattern($1, polaris_cm_fp_exec_t, polaris_cm_fp_t)
')

#####
## <summary>
## Allow the specified domain to manage cm_fp_tmp files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_cm_fp_tmp_manage',`
    gen_require(`
        type polaris_cm_fp_tmp_t;
        type tmp_t;
    `)

    manage_files_pattern($1, { polaris_cm_fp_tmp_t tmp_t }, polaris_cm_fp_tmp_t)
')

#####
## <summary>
## Create objects in /tmp with a polaris_cm_fp_tmp_t
## type using a type_transition.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_cm_fp_tmp_filetrans',`
    gen_require(`
        type polaris_cm_fp_tmp_t;
    `)

    files_tmp_filetrans($1, polaris_cm_fp_tmp_t, file, "octeon-remote-lock-pci:0")
')

#####
## <summary>
## Allow access to semaphore with type polaris_cm_fp_t
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>

```

```

## </param>
#
interface(`polaris_cm_fp_sem_use`,`
    gen_require(`
        type polaris_cm_fp_t;
    `)
    allow $1 polaris_cm_fp_t:sem rw_sem_perms;
`)

#####
## <summary>
##   Allow access to shared memory with type polaris_cm_fp_t
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cm_fp_shm_use`,`
    gen_require(`
        type polaris_cm_fp_t;
    `)
    allow $1 polaris_cm_fp_t:shm rw_shm_perms;
`)

#####
## <summary>
##   Allow access to /dev/hkp with type polaris_cm_fp_t
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_hkp_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_hkp_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_hkp_device_t)
    read_chr_files_pattern($1, device_t, polaris_hkp_device_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscmfp.if

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```
#  
# August 2017, Shawn Lu  
#  
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#
```

```
# polarisifmgr file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrifmgr.fc
```

No license file was found, but licenses were detected in source scan.

```
#  
# August 2017, Victor Kamensky  
#  
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# All rights reserved  
#
```

```
## <summary>Polaris crankshaft Platform Policy Rules.</summary>
```

```
#####
```

```
## <summary>
```

```
## Work (read, write, ioctl) with /dev/linux-(user|kernel)-bde devices
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_bde_dev_use',`
```

```
gen_require(`
```

```
    type device_t;
```

```
    type polaris_bde_device_t;
```

```
`)
```

```
    write_chr_files_pattern($1, device_t, polaris_bde_device_t)
```

```
    read_chr_files_pattern($1, device_t, polaris_bde_device_t)
```

```
    allow $1 polaris_bde_device_t:chr_file map;
```

```
`)
```

```
#####
```

```
## <summary>
```

```
## Work (read, write, ioctl) with /dev/dash_fpga device
```

```
## </summary>
```

```

## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_dash_dev_use`,`
gen_require(`
    type device_t;
    type polaris_dash_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_dash_device_t)
    read_chr_files_pattern($1, device_t, polaris_dash_device_t)
    allow $1 polaris_dash_device_t:chr_file map;
`)

#####
## <summary>
##   Work (read, write, ioctl) with /dev/huron_fpga device
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_huron_dev_use`,`
gen_require(`
    type device_t;
    type polaris_huron_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_huron_device_t)
    read_chr_files_pattern($1, device_t, polaris_huron_device_t)
    allow $1 polaris_huron_device_t:chr_file map;
`)

#####
## <summary>
##   Work (read, write, ioctl) with /dev/dplr_sumatra
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_sumatra_doppler_dev_use`,`
gen_require(`

```

```

        type device_t;
        type polaris_sumatra_doppler_device_t;
    ')
    write_chr_files_pattern($1, device_t, polaris_sumatra_doppler_device_t)
    read_chr_files_pattern($1, device_t, polaris_sumatra_doppler_device_t)
    allow $1 polaris_sumatra_doppler_device_t:chr_file map;
')

```

```
#####
```

```

## <summary>
##   Work (open, read, write, ioctl) with /dev/sirius_fpga device
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_sirius_fpga_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_siriusfpga_device_t;
    `)
    rw_chr_files_pattern($1, device_t, polaris_siriusfpga_device_t);
)

```

```
#####
```

```

## <summary>
##   Work (read, write, ioctl) with /dev/nios device
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_nios_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_nios_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_nios_device_t)
    read_chr_files_pattern($1, device_t, polaris_nios_device_t)
)

```

```
#####
```

```

## <summary>
##   Work (read, write, ioctl) with /dev/qaemem device

```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_qae_dev_use`,`
gen_require(`
    type device_t;
    type polaris_qae_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_qae_device_t)
    read_chr_files_pattern($1, device_t, polaris_qae_device_t)
`)

#####
## <summary>
##   Read mokafpga files in /sys/devices/platform directory
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_mokafpga_read`,`
gen_require(`
    type polaris_sysfs_mokafpga_t;
    type sysfs_t;
`)
    read_files_pattern($1, polaris_sysfs_mokafpga_t, polaris_sysfs_mokafpga_t)
    list_dirs_pattern($1, polaris_sysfs_mokafpga_t, polaris_sysfs_mokafpga_t)
`)

#####
## <summary>
##   Read/Write mokafpga files in /sys/devices/platform directory
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_mokafpga_rw`,`
gen_require(`
    type polaris_sysfs_mokafpga_t;

```

```

        type sysfs_t;
    ')
    rw_files_pattern($1, polaris_sysfs_mokafpga_t, polaris_sysfs_mokafpga_t)
    list_dirs_pattern($1, polaris_sysfs_mokafpga_t, polaris_sysfs_mokafpga_t)
')

```

```
#####
```

```

## <summary>
##   Work (read, write, ioctl) with /dev/moka_fpga
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_mokafpga_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_mokafpga_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_mokafpga_device_t)
    read_chr_files_pattern($1, device_t, polaris_mokafpga_device_t)
)

```

```
#####
```

```

## <summary>
##   Work (read, write, ioctl) with /dev/nim_dm_0_1 and
## /dev/nim_dm devices
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_nim_dm_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_nim_dm_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_nim_dm_device_t)
    read_chr_files_pattern($1, device_t, polaris_nim_dm_device_t)
    allow $1 polaris_nim_dm_device_t:chr_file map;
    allow $1 device_t:chr_file map;
)

```

```
#####
## <summary>
##   Execute a domain transition to run load_usbnet.sh.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_load_usbnet_domtrans`,`
    gen_require(`
        type polaris_load_usbnet_t, polaris_load_usbnet_exec_t;
    `)

    domtrans_pattern($1, polaris_load_usbnet_exec_t, polaris_load_usbnet_t)
`)

```

```
#####
## <summary>
##   Label and allow access to i2c semaphore files.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_i2c_sem_manage`,`
    gen_require(`
        type tmpfs_t;
        type polaris_cm_cc_tmpfs_t;
    `)

    manage_files_pattern($1, tmpfs_t, polaris_cm_cc_tmpfs_t)
    mmap_files_pattern($1, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
`)

```

```
#####
## <summary>
##   Work (read, write, ioctl) with /dev/bp_async device
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_bp_async_dev_use`,`

```

```

gen_require(
    type device_t;
    type polaris_bp_async_device_t;
)
write_chr_files_pattern($1, device_t, polaris_bp_async_device_t)
read_chr_files_pattern($1, device_t, polaris_bp_async_device_t)
allow $1 polaris_bp_async_device_t:chr_file map;
)

#####
## <summary>
##   Label and allow access to i2c semaphore files.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_udev_access',`
    gen_require(
        type tmpfs_t;
        type polaris_udev_tmp_files_t;
    )
    manage_files_pattern($1, tmpfs_t, polaris_udev_tmp_files_t)
)

## <summary>
## Work (read, write, ioctl) with /dev/sparrow_psu device
## </summary>
## <param name="domain">
## <summary>
##   Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_sparrow_psu_dev_use',`
    gen_require(
        type device_t;
        type polaris_sparrow_psu_device_t;
    )
    write_chr_files_pattern($1, device_t, polaris_sparrow_psu_device_t)
    read_chr_files_pattern($1, device_t, polaris_sparrow_psu_device_t)
)

#####
## <summary>
## Work (read, write, ioctl) with /dev/nutella_fpga device

```

```

## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_nutella_fpga_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_nutella_fpga_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_nutella_fpga_device_t)
    read_chr_files_pattern($1, device_t, polaris_nutella_fpga_device_t)
`)

#####
## <summary>
## Read and write to qcqmi devices.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_qcqmi_dev_use`,`
    gen_require(`
        type device_t, qcqmi_device_t;
    `)

    rw_chr_files_pattern($1, device_t, qcqmi_device_t)
`)

#####
## <summary>
## Work (read, write, ioctl) with /dev/sm_nim_adpt device files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_sm_nim_adpt_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_sm_nim_adpt_device_t;

```

```

)

write_chr_files_pattern($1, device_t, polaris_sm_nim_adpt_device_t)
read_chr_files_pattern($1, device_t, polaris_sm_nim_adpt_device_t)
allow $1 polaris_sm_nim_adpt_device_t:chr_file map;
)

#####
## <summary>
##   Work (read, write, ioctl) with /dev/dio-*
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_dio_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_dio_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_dio_device_t)
    read_chr_files_pattern($1, device_t, polaris_dio_device_t)
    allow $1 polaris_dio_device_t:chr_file map;
)

#####
## <summary>
##   Read /dev/dio-*
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_dio_dev_read`,`
    gen_require(`
        type device_t;
        type polaris_dio_device_t;
    `)
    read_chr_files_pattern($1, device_t, polaris_dio_device_t)
)

#####
## <summary>
##   Work (read, write, ioctl) with /dev/ttyNMEA* and /dev/ttyTunNMEA*

```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_tty_NMEA_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_tty_NMEA_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_tty_NMEA_device_t)
    read_chr_files_pattern($1, device_t, polaris_tty_NMEA_device_t)
    allow $1 polaris_tty_NMEA_device_t:chr_file map;
)

```

#####

```

## <summary>
##   Read /dev/ttyNMEA* and /dev/ttyTunNMEA*
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_tty_NMEA_dev_read`,`
    gen_require(`
        type device_t;
        type polaris_tty_NMEA_device_t;
    `)
    read_chr_files_pattern($1, device_t, polaris_tty_NMEA_device_t)
)

```

#####

```

## <summary>
##   Work (read, write, ioctl) with /dev/nim_phy
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_nim_phy_dev_use`,`
    gen_require(`
        type device_t;
    `)

```

```
type polaris_nim_phy_device_t;
)
    rw_chr_files_pattern($1, device_t, polaris_nim_phy_device_t)
    allow $1 polaris_nim_phy_device_t:chr_file map;
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscrankshaft.if

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dnl

dnl July 2020, Victor Kamensky

dnl

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dnl

dnl c8kv Platform Max Bay Limits

max\_bay\_map\_set(`rp', `per\_bay', 0)

max\_bay\_map\_set(`cc', `per\_bay', 3)

max\_bay\_map\_set(`fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(`rp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(`cc', `per\_bay', 3)

max\_bay\_ripc\_map\_set(`fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(`rp', `global', 0)

max\_bay\_ripc\_map\_set(`cc', `global', 3)

max\_bay\_ripc\_map\_set(`fp', `global', 0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/c8kvmaps.m4

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#

# August 2017, Victor Kamensky

#

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#

# /bootflash labels

/bootflash(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_bootflash\_t,s0)

/bootflash/.ssh(/.\*)? gen\_context(system\_u:object\_r:ssh\_home\_t,s0)

/bootflash/.ssh/ssh\_host.\*\_key\pub gen\_context(system\_u:object\_r:sshd\_key\_t,s0)

/bootflash/.ssh/ssh\_host.\*\_key gen\_context(system\_u:object\_r:sshd\_key\_t,s0)

/bootflash/tracelogs(/.\*)? gen\_context(system\_u:object\_r:polaris\_btrace\_data\_t,s0)

/bootflash/tan(/.\*)? gen\_context(system\_u:object\_r:polaris\_btrace\_data\_t,s0)

/bootflash/core(/.\*)? gen\_context(system\_u:object\_r:polaris\_core\_file\_t,s0)

```

/bootflash/debug.conf          gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/bootflash/packages.conf      gen_context(system_u:object_r:polaris_packages_conf_t,s0)

# /objstore/.swtam for hybrid TAM access
/objstore(/.*)?              gen_context(system_u:object_r:polaris_disk_objstore_t,s0)

/csl_p_0(/.*)?              gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/csl_p_1(/.*)?              gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/csl_s_0(/.*)?              gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)
/csl_s_1(/.*)?              gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)
/obfl(/.*)?                  gen_context(system_u:object_r:polaris_obfl_data_t,s0)

# not really a license file stored by iosd during platform resource config command
/csl_p_0/vcpu_template.txt    gen_context(system_u:object_r:polaris_iosd_vcpu_t,s0)

# nvram devices
/dev/bootflash2 -b           gen_context(system_u:object_r:polaris_nvram_file_t,s0)
/dev/bootflash3 -b           gen_context(system_u:object_r:polaris_nvram_file_t,s0)
/dev/sda2 -b                 gen_context(system_u:object_r:polaris_nvram_file_t,s0)
/dev/sda3 -b                 gen_context(system_u:object_r:polaris_nvram_file_t,s0)

/dev/linux-user-bde -c gen_context(system_u:object_r:polaris_bde_device_t,s0)
/dev/linux-kernel-bde -c gen_context(system_u:object_r:polaris_bde_device_t,s0)

/dev/dash_fpga -c gen_context(system_u:object_r:polaris_dash_device_t,s0)
/dev/dash_fpga_cc0 -c gen_context(system_u:object_r:polaris_dash_device_t,s0)
/dev/dash_fpga_cc1 -c gen_context(system_u:object_r:polaris_dash_device_t,s0)
/dev/dash_fpga_cc2 -c gen_context(system_u:object_r:polaris_dash_device_t,s0)
/dev/dash_fpga_cc3 -c gen_context(system_u:object_r:polaris_dash_device_t,s0)
/dev/dash_fpga_nios -c gen_context(system_u:object_r:polaris_dash_device_t,s0)

/dev/huron_fpga -c gen_context(system_u:object_r:polaris_huron_device_t,s0)
/dev/dplr_sumatra -c gen_context(system_u:object_r:polaris_sumatra_doppler_device_t,s0)

/dev/nios -c gen_context(system_u:object_r:polaris_nios_device_t,s0)

/dev/qaе_mem -c gen_context(system_u:object_r:polaris_qae_device_t,s0)

/dev/icp_adf_gige_wd -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev0_csr -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev0_ring -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev_mem -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev_mem_page -c gen_context(system_u:object_r:polaris_icp_device_t,s0)

# moka fpga
/dev/moka_fpga -c gen_context(system_u:object_r:polaris_mokafpga_device_t,s0)
/dev/moka_fpga_cc -c gen_context(system_u:object_r:polaris_mokafpga_device_t,s0)

```

```

# for load usbnet module
/usr/bin/os/conf/load_usbnet.sh -- gen_context(system_u:object_r:polaris_load_usbnet_exec_t,s0)

/dev/nim_dm -c gen_context(system_u:object_r:polaris_nim_dm_device_t,s0)
/dev/nim_dm_0_1 -c gen_context(system_u:object_r:polaris_nim_dm_device_t,s0)

/dev/nim_phy -c gen_context(system_u:object_r:polaris_nim_phy_device_t,s0)

# file-system on blackheart/sparrow
# /crashinfo is symbolic link to /flash1
/crashinfo          gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)

# /flash is symbolic link to /flash1
/flash              gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

# /flash0 NVRAM
/flash0(/.*)?      gen_context(system_u:object_r:polaris_nvram_file_t,s0)

# /flash1 Bootflash
/flash1(/.*)?      gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/flash1/tracelogs(/.*)?      gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/flash1/.geo(/.*)?      gen_context(system_u:object_r:polaris_geodb_files_t,s0)
/flash1/.USWAP(/.*)?      gen_context(system_u:object_r:polaris_uswap_files_t,s0)
/flash1/.dbpersist(/.*)?      gen_context(system_u:object_r:polaris_disk_dbm_t,s0)
/flash1/debug.conf --      gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/flash1/packages.conf      gen_context(system_u:object_r:polaris_packages_conf_t,s0)
/flash1/core(/.*)?      gen_context(system_u:object_r:polaris_core_file_t,s0)
/flash1/.rollback_timer(/.*)?      gen_context(system_u:object_r:polaris_rbtimer_bootflash_t,s0)
/flash1/.installer(/.*)?      gen_context(system_u:object_r:polaris_disk_install_t,s0)
/flash1/.ssh(/.*)?      gen_context(system_u:object_r:ssh_home_t,s0)
/flash1/.ssh/ssh_host.*_key\,pub      gen_context(system_u:object_r:sshd_key_t,s0)
/flash1/.ssh/ssh_host.*_key      gen_context(system_u:object_r:sshd_key_t,s0)

# /flash3 OBFL
/flash3(/.*)?      gen_context(system_u:object_r:polaris_obfl_data_t,s0)
/flash3/OBFL(/.*)?      gen_context(system_u:object_r:polaris_obfl_data_t,s0)

#harddisk
/vol/harddisk(/.*)?      gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)
/mnt/msata(/.*)?      gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)

# for usage by IOx
/vol/usb1(/.*)?      gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)

/dev/shm/sem\._dev_i2c_0      gen_context(system_u:object_r:polaris_cm_cc_tmpfs_t,s0)
/dev/shm/sem\._dev_i2c_1      gen_context(system_u:object_r:polaris_cm_cc_tmpfs_t,s0)
/dev/shm/sem\._dev_i2c_2      gen_context(system_u:object_r:polaris_cm_cc_tmpfs_t,s0)

```

```

/tmp/udev/etc/udev/msata/udev-info gen_context(system_u:object_r:polaris_udev_tmp_files_t,s0)

# Nvram symlink on Aventus platform
/aventus_config/nvram gen_context(system_u:object_r:polaris_nvram_file_t,s0)

# Nvram symlink on Cabo platform
/cabo_config/nvram gen_context(system_u:object_r:polaris_nvram_file_t,s0)

# Device applicable to Betelgeuse platform
/dev/sirius_fpga gen_context(system_u:object_r:polaris_siriusfpga_device_t,s0)

# Device applicable to Nanook platform
/dev/bp_async -c gen_context(system_u:object_r:polaris_bp_async_device_t,s0)

# Device applicable to Sparrow platform
/dev/remap_mem0 -c gen_context(system_u:object_r:polaris_remap_mem_device_t,s0)
/dev/sparrow_psu -c gen_context(system_u:object_r:polaris_sparrow_psu_device_t,s0)
/dev/dio-upstream -c gen_context(system_u:object_r:polaris_dio_device_t,s0)
/dev/dio-[1-4] -c gen_context(system_u:object_r:polaris_dio_device_t,s0)
/dev/ttyNMEA[0-1] -c gen_context(system_u:object_r:polaris_tty_NMEA_device_t,s0)
/dev/ttyTunNMEA[0-1] -c gen_context(system_u:object_r:polaris_tty_NMEA_device_t,s0)

# Device applicable to Nutella platform
/dev/nutella_fpga -c gen_context(system_u:object_r:polaris_nutella_fpga_device_t,s0)

#Only qcqmi0 and qcqmi1 are generated for Telit/SWI modems
/dev/qcqmi0 -c gen_context(system_u:object_r:qcqmi_device_t,s0)
/dev/qcqmi1 -c gen_context(system_u:object_r:qcqmi_device_t,s0)

#SM NIM Adpater Switzer-CC device files
/dev/sm_nim_adpt_fpga_1 -c gen_context(system_u:object_r:polaris_sm_nim_adpt_device_t,s0)
/dev/sm_nim_adpt_nim_oir_1_0 -c gen_context(system_u:object_r:polaris_sm_nim_adpt_device_t,s0)
/dev/sm_nim_adpt_nim_oir_1_1 -c gen_context(system_u:object_r:polaris_sm_nim_adpt_device_t,s0)
/dev/sm_nim_adpt_fpga_2 -c gen_context(system_u:object_r:polaris_sm_nim_adpt_device_t,s0)
/dev/sm_nim_adpt_nim_oir_2_0 -c gen_context(system_u:object_r:polaris_sm_nim_adpt_device_t,s0)
/dev/sm_nim_adpt_nim_oir_2_1 -c gen_context(system_u:object_r:polaris_sm_nim_adpt_device_t,s0)

# CLI: show platform hardware msata
/usr/binos/bin/msata_info.sh -- gen_context(system_u:object_r:polaris_msata_info_exec_t,s0)
/tmp/sata_status -- gen_context(system_u:object_r:polaris_sata_status_tmp_t,s0)

# Memory blocks and gpp for Nutella platform
/dev/mmcblk0gp0p1 gen_context(system_u:object_r:polaris_nutella_gp0_t,s0)
/gpp gen_context(system_u:object_r:polaris_nutella_gpp_t,s0)

# CLI: show platform hardware slot p[x] fan eeprom
/usr/binos/conf/mcp_fan_eeprom_cmd.sh -- gen_context(system_u:object_r:polaris_smart_fan_exec_t,s0)

```

```
/var/run/cwan_ezmanage_cwan_server -- gen_context(system_u:object_r:polaris_cwan_svr_var_run_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscrankshaft.fc
```

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```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
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```

```
# All rights reserved
```

```
#
```

```
policy_module(polariscmfp, 1.0);
```

```
gen_require(^
```

```
    type polaris_cm_fp_t;
```

```
')
```

```
polaris_btrace_data_manage(polaris_cm_fp_t)
```

```
polaris_crft_data_manage(polaris_cm_fp_t)
```

```
polaris_chasfs_manage(polaris_cm_fp_t)
```

```
polaris_tdlresolve_read(polaris_cm_fp_t)
```

```
polaris_tdlldb_list_dirs(polaris_cm_fp_t)
```

```
polaris_cpld_read(polaris_cm_fp_t)
```

```
polaris_flashlib_read(polaris_cm_fp_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_cm_fp_t)
```

```
polaris_cpld_dev_use(polaris_cm_fp_t)
```

```
polaris_proc_rmonbifo_read(polaris_cm_fp_t)
```

```
polaris_obfl_data_read(polaris_cm_fp_t)
```

```
polaris_persistent_list_dirs(polaris_cm_fp_t)
```

```
polaris_chasync_files_manage(polaris_cm_fp_t)
```

```
# cman_fp creates /tmp/cpp_anon_db file, instead of adding it to polaris_cpp_domain
```

```
# let us just grant access to cpp tmp files
```

```
polaris_cpp_tmp_files_use(polaris_cm_fp_t, "cpp_anon_db")
```

```
# on 1ng works with /dev/cpp
```

```
polaris_cpp_dev_use(polaris_cm_fp_t)
```

```
# work with /dev/i2c devices
```

```
polaris_i2c_use(polaris_cm_fp_t)
```

```
# on ultra read eeprom through i2c
```

```
# type=AVC msg=audit(1479556298.842:11): avc: denied { getattr } for pid=5464 comm="cman_fp"
```

```
path="/sys/devices/i2c-0/i2c-1/1-0056/eeprom" dev="sysfs" ino=25556
```

```

scontext=system_u:system_r:polaris_cm_fp_t:s0 tcontext=system_u:object_r:sysfs_t:s0 tclass=file
# type=AVC msg=audit(1479556298.842:12): avc: denied { read write } for pid=5464 comm="cman_fp"
name="eeprom" dev="sysfs" ino=25556 scontext=system_u:system_r:polaris_cm_fp_t:s0
tcontext=system_u:object_r:sysfs_t:s0 tclass=file
dev_rw_sysfs(polaris_cm_fp_t)

polaris_icc_broken_relocations(polaris_cm_fp_t)

allow polaris_cm_fp_t self:udp_socket { create ioctl };

# cman_fp can start dyncfg_setup.sh, allow its transition to dyncfg_t type
polaris_dyncfg_domtrans(polaris_cm_fp_t)

# on 1ng cman_fp write into /bootflash/crypto/octeon_pci_console_dev0_20170723_075412.log
polaris_bootflash_manage(polaris_cm_fp_t)

polaris_disk_harddisk_read_lnk(polaris_cm_fp_t)

# write to devices like this /proc/bus/pci/04/00.0
kernel_read_system_state(polaris_cm_fp_t)
kernel_write_proc_files(polaris_cm_fp_t)

# cm_fp tmp files like /tmp/octeon-remote-lock-pci:0
type polaris_cm_fp_tmp_t;
files_tmp_file(polaris_cm_fp_tmp_t)
polaris_cm_fp_tmp_filetrans(polaris_cm_fp_t)
polaris_cm_fp_tmp_manage(polaris_cm_fp_t)
# besides /tmp/octeon-remote-lock-pci:0 all other files in /tmp
# are ours
files_tmp_filetrans(polaris_cm_fp_t, polaris_cm_fp_tmp_t, file)

# LOOK AT ME: raw memory write access
#ifdef(^mcp_family',`
polaris_dev_mem_use(polaris_cm_fp_t)
`)

# LOOK AT ME: raw memory access in cavium vendor SDK
# related to octeon driver (BUG CSCvh55517)
#ifdef(^crankshaft_family',`
polaris_dev_mem_use(polaris_cm_fp_t)
`)

# LOOK AT ME: raw memory access in dopler SDK remove after
# CSCvm34516 is fixed using CSCvm34630
#ifdef(^starfleet_platform',`
polaris_dev_mem_use(polaris_cm_fp_t)
`)

```

```

# "show platform hardware slot F0 eobc interface standby rmon" leads to
# ioctl() call from cmlib_get_eobc_drv_info().
kernel_request_load_module(polaris_cm_fp_t)

# needed for "show platform hardware slot F0 eobc interface standby rmon"
kernel_read_network_state(polaris_cm_fp_t)

# on RP2/RP3 linecard cyan init happens within cm
#ifdef(^mcp_family',`
polaris_dyncfg_setup(polaris_cm_fp_t)
`)

allow polaris_cm_fp_t self:capability dac_override;

polaris_obfl_data_manage(polaris_cm_fp_t)

allow polaris_cm_fp_t self:netlink_route_socket rw_netlink_socket_perms;

#ifdef(^ngwc_family',`
# cmfp_asic_mmap_func() function in cmfp module uses
# /dev/chdrvmmmap for asic memory mapping
polaris_chdrvmmmap_dev_use(polaris_cm_fp_t)

# on macallan cman_fp needs access to /dev/cisco/dplriomem
# for mappin dplr io memory to application space.
polaris_dplr_iomem_mmapdrv_dev_use(polaris_cm_fp_t);

# on macallan iomd needs access to /dev/cisco/fpga_iomem
# for mapping FPGA io memory to application space.
polaris_fpga_iomem_mmapfpga_dev_use(polaris_cm_fp_t);
`)

optional_policy(`
# Allow /dev/dmammmap access
polaris_dmammmap_dev_use(polaris_cm_fp_t)
`)

# on starfleet need access to
# /sys/device/platform/cpld/reg_fan_control
polaris_cpld_write(polaris_cm_fp_t)

# /dev/shm/sdm access
optional_policy(`
polaris_sdm_shm_manage(polaris_cm_fp_t)
`)

logging_send_syslog_msg(polaris_cm_fp_t)

```

```

# /dev/epactrlN on qwlc
optional_policy(`
polaris_epa_dev_use(polaris_cm_fp_t)
`)

# /dev/astro on qwlc
optional_policy(`
polaris_astro_dev_use(polaris_cm_fp_t)
`)

# /dev/cpp_il on qwlc
optional_policy(`
polaris_cpp_il_dev_use(polaris_cm_fp_t)
`)

# on radium need to get model info
optional_policy(`
polaris_dash_dev_use(polaris_cm_fp_t)
`)

# on neptune, cavium library in o2_cavm_mem_map wants access to
# /sys/devices/pci0000:00/0000:00:01.0/0000:01:00.0/resource0
optional_policy(`
polaris_cpp_cavium_dma_map(polaris_cm_fp_t)
`)

# /dev/aikido access
polaris_aikido_dev_use(polaris_cm_fp_t)

optional_policy(`
# betelgeuse need access to /dev/sirius_fpga
polaris_sirius_fpga_dev_use(polaris_cm_fp_t)
`)

# access SERDES /tmp/serdes_asic_key_dir/*
optional_policy(`
polaris_serdes_asic_key_tmp_manage(polaris_cm_fp_t)
`)

type polaris_hkp_device_t;
dev_node(polaris_hkp_device_t)

# access /dev/iocp0
optional_policy(`
polaris_spa_dev_use(polaris_cm_fp_t)
`)

optional_policy(`

```

```
# access /dev/hkp
polaris_hkp_dev_use(polaris_cm_fp_t)

polaris_n2_dev_use(polaris_cm_fp_t)
polaris_cy2213_dev_use(polaris_cm_fp_t)
polaris_ddr_dev_use(polaris_cm_fp_t)
polaris_vega_dev_use(polaris_cm_fp_t)
')

polaris_firmware_read(polaris_cm_fp_t)

# allow access to /csl_p_0/vcpu_template.txt
polaris_iosd_vcpu_read(polaris_cm_fp_t)

# allow Cabo access to i2c semaphores
ifdef(^cabo_platform',`
polaris_i2c_sem_manage(polaris_cm_fp_t)
')

ifdef(^sumatra_platform',`
# access huron fpga on sumatra
polaris_huron_dev_use(polaris_cm_fp_t)
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscmfp.te
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```

```
#
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#
```

```
# polarisezmancc file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisezmancc.fc
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
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#
```

```
policy_module(polarisripc, 1.0);
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisripc.te
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
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```

```
# All rights reserved
```

```
#
```

```
# polarisripc file contexts place holder
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisripc.fc
```

```
No license file was found, but licenses were detected in source scan.
```

```
dnl
```

```
dnl April 2018, Victor Kamensky
```

```
dnl
```

```
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
```

```
dnl All rights reserved
```

```
dnl
```

```
divert(-1)
```

```
include(`polaris_process.m4')
```

```
include(`polaris_process_fc.m4')
```

```
include(`polaris_ipc_mqipc.m4')
```

```
include(`polaris_ipc_mqipc_fc.m4')
```

```
include(`polaris_ipc_ripc.m4')
```

```
include(`polaris_ipc_ripc_fc.m4')
```

```
include(`polaris_ipc_lipc.m4')
```

```
include(`polaris_ipc_lipc_fc.m4')
```

```
dnl Stub out non existent one
```

```
define(`polaris_websocket_service_server',`')
```

```
define(`polaris_cipc_service_server',`')
```

```
include(`polaris_max_scope.m4')
```

```
divert(0)dnl
```

```
#
```

```
# This is a generated file! Instead of modifying this file,
```

```
# modify proper platform TDL file.
```

```
#
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_fc.m4
```

```
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```

```
#
```

```
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```

```
#
```

```
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```

```
# All rights reserved
```

```
#
```

```
policy_module(polarisstorage, 1.0);
```

```
#####
```

```
# Persistent storage policy
```

```
#####
```

```
attribute polaris_disk;
```

```
# Default disk types
```

```
type polaris_disk_bootflash_t;
```

```
polaris_disk_type(polaris_disk_bootflash_t)
```

```
type polaris_disk_varied_t;
```

```
polaris_disk_type(polaris_disk_varied_t)
```

```
type polaris_disk_harddisk_t;
```

```
polaris_disk_type(polaris_disk_harddisk_t)
```

```
type polaris_disk_csl_p_t;
```

```
polaris_disk_type(polaris_disk_csl_p_t)
```

```
type polaris_disk_csl_s_t;
```

```
polaris_disk_type(polaris_disk_csl_s_t)
```

```
type polaris_disk_objstore_t;
```

```
polaris_disk_type(polaris_disk_objstore_t)
```

```
type polaris_disk_crashinfo_t;
```

```
polaris_disk_type(polaris_disk_crashinfo_t)
```

```
type polaris_disk_license_t;
```

```
polaris_disk_type(polaris_disk_license_t)
```

```
type polaris_disk_ucose_t;
```

```

polaris_disk_type(polaris_disk_ucode_t)

type polaris_disk_recovery_t;
polaris_disk_type(polaris_disk_recovery_t)

type polaris_disk_config_t;
polaris_disk_type(polaris_disk_config_t)

# Persistent files types
type polaris_system_report_t;
polaris_pfile_type(polaris_system_report_t)

type polaris_core_file_t;
polaris_pfile_type(polaris_core_file_t)

type polaris_debug_conf_t;
polaris_pfile_type(polaris_debug_conf_t)

type polaris_packages_conf_t;
polaris_pfile_type(polaris_packages_conf_t)

type polaris_grub_efi_t;
polaris_pfile_type(polaris_grub_efi_t)

# we label .ssh files residing on persistent storage as ssh_home_t
# and sshd_key_t
#
# below statement could/should be moved into ssh te file?
gen_require(
    type ssh_home_t;
    type sshd_key_t;
)
polaris_disk_type(ssh_home_t)
polaris_disk_type(sshd_key_t)

# handling /bootflash directory - created by systemd unit, note normally
# something will be mounted on top of it, but in some cases like RP2 line
# cards it will be ramfs directory.
gen_require(
    type root_t;
    type unconfined_service_t;
)
filetrans_pattern(unconfined_service_t, root_t, polaris_disk_bootflash_t, dir, "bootflash")

# nfsd accesses different persistent storage directories and it needs getattr
gen_require(
    type nfsd_t;
)

```

```

polaris_persistent_getattr(nfsd_t)

# on qwlc /misc/scratch symbolic link created by systemd-tmpfile, but then
# removed and recreated by harddisk mount systemd unit
gen_require(
    type unconfined_service_t;
    type mnt_t;
)
filetrans_pattern(unconfined_service_t, mnt_t, polaris_disk_bootflash_t, lnk_file, "scratch")

gen_require(
    type polaris_conf_t;
    type tmp_t;
)
filetrans_pattern(polaris_conf_t, tmp_t, polaris_packages_conf_t, file, "packages.conf")

# first time creation of /bootflash/core directory
gen_require(
    type initrc_t;
    type init_t;
)
filetrans_pattern({initrc_t init_t unconfined_service_t}, {polaris_disk_bootflash_t polaris_disk_harddisk_t} ,
polaris_core_file_t, dir, "core")

gen_require(
    type init_t;
)
files_tmp_filetrans(init_t, polaris_packages_conf_t, file, "packages.conf")

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisstorage.te

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```

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#

```

```

/usr/binos/conf/run_ioxn_gs_ha.sh -- gen_context(system_u:object_r:polaris_gsd_rp_exec_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisgsdrp.fc

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```

#
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```

```
#
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#

/usr/cpp/bin/cpp_sp_svr -- gen_context(system_u:object_r:polaris_cpp_sp_exec_t,s0)
/usr/cpp/bin/cpp_sp_svr_ledp -- gen_context(system_u:object_r:polaris_cpp_sp_exec_t,s0)
/usr/cpp/bin/cpp_sp_svr_us_ledp -- gen_context(system_u:object_r:polaris_cpp_sp_exec_t,s0)
/usr/cpp/bin/cpp_sp_svr_vwlc -- gen_context(system_u:object_r:polaris_cpp_sp_exec_t,s0)
/usr/cpp/bin/cpp_sp_svr_vwlc_ledp -- gen_context(system_u:object_r:polaris_cpp_sp_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscppsp.fc
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```

```
#
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#
```

```
## <summary>Polaris Btrace Policy Rules.</summary>
```

```
#####
# Btrace policy
#####
```

```
#####
```

```
## <summary>
##   Manage btrace auxiliary files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
```

```
interface(`polaris_btrace_data_manage',`
gen_require(`
type polaris_btrace_base_t;
type polaris_btrace_tmpfs_t;
type tmpfs_t;
`
)
```

```
manage_dirs_pattern($1, polaris_btrace_base_t, polaris_btrace_base_t)
```

```

# work with cache files and dirs under /tmp/tmppub, like /tmp/tmppub/libs_cache
polaris_btrace_tmppub_manage($1)

fs_tmpfs_filetrans($1, polaris_btrace_tmpfs_t, file, "oper_uid_shm")
manage_files_pattern($1, tmpfs_t, polaris_btrace_tmpfs_t)
allow $1 polaris_btrace_tmpfs_t:file map;
')

#####
## <summary>
##   Manage temporary (not yet persistent) btrace files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_btrace_data_manage_all`,`

    polaris_btrace_data_manage($1)

gen_require(`
    attribute polaris_btrace_data_domain;
type polaris_btrace_base_t;
`)

manage_files_pattern($1, polaris_btrace_base_t, polaris_btrace_data_domain)
manage_lnk_files_pattern($1, polaris_btrace_base_t, polaris_btrace_data_domain)
allow $1 polaris_btrace_data_domain:file map;

# create temporary files in trace directory
manage_files_pattern($1, polaris_btrace_base_t, polaris_btrace_base_t)
manage_lnk_files_pattern($1, polaris_btrace_base_t, polaris_btrace_base_t)

# watch btrace data directory for changes
allow $1 polaris_btrace_base_t:dir watch;
`)

#####
## <summary>
##   Manage btrace persitent files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>

```

```

## </param>
## <rolebase/>
#
interface(`polaris_btrace_persistent_data_manage`,`
gen_require(`
type polaris_btrace_data_t;
`)

manage_dirs_pattern($1, polaris_btrace_data_t, polaris_btrace_data_t)
manage_files_pattern($1, polaris_btrace_data_t, polaris_btrace_data_t)
`)

#####
## <summary>
## Read btrace persistent files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolebase/>
#
interface(`polaris_btrace_persistent_data_read`,`
gen_require(`
type polaris_btrace_data_t;
`)

search_dirs_pattern($1, polaris_btrace_data_t, polaris_btrace_data_t)
read_files_pattern($1, polaris_btrace_data_t, polaris_btrace_data_t)
`)

#####
## <summary>
## Search btrace persistent files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolebase/>
#
interface(`polaris_btrace_persistent_data_search`,`
gen_require(`
type polaris_btrace_data_t;
`)

```

```

        search_dirs_pattern($1, polaris_btrace_data_t, polaris_btrace_data_t)
    )

#####
## <summary>
##   Search tracelogs directions in bootflash, harddisk or crashinfo
## directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_btrace_search_tracelogs`,`
gen_require(`
    type polaris_disk_harddisk_t;
    type polaris_disk_bootflash_t;
    type polaris_disk_crashinfo_t;
)

        search_dirs_pattern($1, polaris_disk_harddisk_t, polaris_btrace_data_t)
        search_dirs_pattern($1, polaris_disk_bootflash_t, polaris_btrace_data_t)
        search_dirs_pattern($1, polaris_disk_crashinfo_t, polaris_btrace_data_t)
    )

#####
## <summary>
##   Manage btrace boot level config files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_btrace_lvl_config_manage`,`
gen_require(`
    type polaris_btrace_lvl_config_t;
    type polaris_btrace_data_t;
)

        manage_dirs_pattern($1, polaris_btrace_lvl_config_t, polaris_btrace_lvl_config_t)
        manage_files_pattern($1, polaris_btrace_lvl_config_t, polaris_btrace_lvl_config_t)
        filetrans_pattern($1, polaris_btrace_data_t, polaris_btrace_lvl_config_t, dir, "level_config")

```

```

    polaris_btrace_search_tracelogs($1)

    polaris_disk_bootflash_read_lnk($1)
    polaris_disk_harddisk_read_lnk($1)
    polaris_disk_crashinfo_read_lnk($1)
)

#####
## <summary>
##   Read ldb_tmp btrace meta data files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_btrace_ldb_tmp_read`,`
gen_require(`
type polaris_ldb_tmp_t;
`)

    read_files_pattern($1, polaris_ldb_tmp_t, polaris_ldb_tmp_t)
)

#####
## <summary>
## Read and write all btrace or pman fifo file, used as
##   standard input/output.
## </summary>
## <param name="domain">
## <summary>
##   Domain allowed access.
## </summary>
## </param>
## <rolecap/>
#
interface(`polaris_use_btrace_fifo`,`
gen_require(`
type polaris_fifo_stdout_t;
`)

    allow $1 polaris_fifo_stdout_t:fifo_file { rw_term_perms lock append create unlink getattr };

# For pmanlite, allow pmans grand-children to be able to operate on
# pipe created by pman.

```

```

polaris_use_pman_fifo($1)
')

#####
## <summary>
##   Execute create_luid_file_db in the its domain.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_create_ldb_domtrans`,`
    gen_require(`
        type polaris_create_ldb_t, polaris_create_ldb_exec_t;
    `)

    corecmd_search_bin($1)
    domtrans_pattern($1, polaris_create_ldb_exec_t, polaris_create_ldb_t)
)

#####
## <summary>
## Make the specified type usable as btrace data file type.
## </summary>
## <param name="type">
## <summary>
## Type to be used for files.
## </summary>
## </param>
#
interface(`polaris_btrace_data_type`,`
    files_type($1)
    gen_require(`
        attribute polaris_btrace_data_domain;
    `)
    typeattribute $1 polaris_btrace_data_domain;
)

#####
## <summary>
##   Process to manage its own btrace files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>

```

```

## </param>
## <param name="file_type">
##   <summary>
##     File type of btrace that corresponds to given domain.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_btrace_data_client`,`
gen_require(`
  type polaris_btrace_base_t;
`)

  manage_files_pattern($1, polaris_btrace_base_t, $2)
  manage_lnk_files_pattern($1, polaris_btrace_base_t, $2)
  filetrans_pattern($1, polaris_btrace_base_t, $2, { file lnk_file })

  # all clients check for /tmp/rp/trace/publish/timed/enabled control
  # file presense, created by btman, may need its own type
  gen_require(`
    type polaris_btman_bt_t;
  `)
  getattr_files_pattern($1, polaris_btrace_base_t, polaris_btman_bt_t)

  allow $1 $2:file map;
)

#####
## <summary>
##   Process to manage its own btrace files
## </summary>
## <param name="domain_stem">
##   <summary>
##     Steam of domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_btrace_data_client_template`,`
gen_require(`
  attribute polaris_btrace_data_domain;
  type polaris_btrace_base_t;
`)

  type polaris_$1_bt_t;
  polaris_btrace_data_type(polaris_$1_bt_t)

  polaris_btrace_data_client(polaris_$1_t, polaris_$1_bt_t)

```

)

```
#####
```

```
## <summary>
```

```
## Execute mcp_trace_request.sh in its domain.
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed to transition.
```

```
## </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_trace_request_domtrans`,`
```

```
gen_require(`
```

```
type polaris_trace_request_t, polaris_trace_request_exec_t;
```

```
`)
```

```
corecmd_search_bin($1)
```

```
domtrans_pattern($1, polaris_trace_request_exec_t, polaris_trace_request_t)
```

```
)
```

```
#####
```

```
## <summary>
```

```
## Watch btrace directories
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
## <rolebase/>
```

```
#
```

```
interface(`polaris_btrace_data_watch`,`
```

```
gen_require(`
```

```
type polaris_btrace_base_t;
```

```
type polaris_btrace_data_t;
```

```
`)
```

```
allow $1 polaris_btrace_base_t:dir watch;
```

```
allow $1 polaris_btrace_data_t:dir watch;
```

```
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtrace.if

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```
#
```

```
# July 2017, Victor Kamensky
```

```

#
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#

policy_module(polaristamsrp, 1.0);

gen_require(
    type polaris_tams_rp_t;
)

polaris_btrace_data_manage(polaris_tams_rp_t)
polaris_crft_data_manage(polaris_tams_rp_t)
polaris_chasfs_manage(polaris_tams_rp_t)
polaris_tdlresolve_read(polaris_tams_rp_t)
polaris_tdlldb_list_dirs(polaris_tams_rp_t)
polaris_flashlib_read(polaris_tams_rp_t)
polaris_cpld_read(polaris_tams_rp_t)

polaris_ripc_sman_ui_serv_connect(polaris_tams_rp_t)

# tams_tamc_tipc_listener_init function create tipc socket
allow polaris_tams_rp_t self:socket { bind create listen accept getattr read write };

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristamsrp.te
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#
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#
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#

policy_module(polarisiodm, 1.0);

gen_require(
    type polaris_iodm_t;
)

polaris_btrace_data_manage(polaris_iodm_t)
polaris_crft_data_manage(polaris_iodm_t)
polaris_chasfs_manage(polaris_iodm_t)
polaris_tdlresolve_read(polaris_iodm_t)
polaris_tdlldb_list_dirs(polaris_iodm_t)
polaris_cpld_read(polaris_iodm_t)
polaris_flashlib_read(polaris_iodm_t)

```

```

polaris_ripc_sman_ui_serv_connect(polaris_iomd_t)

polaris_db_tlddb_dir_use(polaris_iomd_t)

polaris_dyncfg_tmp_read(polaris_iomd_t)
optional_policy(`
polaris_spa_dev_use(polaris_iomd_t)
`)

# allow objstore access
polaris_disk_objstore_read(polaris_iomd_t)

polaris_ngio_dev_use(polaris_iomd_t)

# deals with /dev/shm files semaphors; like uuid_sem semaphore
# created by btrace_get_uuid function
type polaris_iomd_tmpfs_t;
files_tmpfs_file(polaris_iomd_tmpfs_t)
fs_tmpfs_filetrans(polaris_iomd_t, polaris_iomd_tmpfs_t, file)
manage_files_pattern(polaris_iomd_t, tmpfs_t, polaris_iomd_tmpfs_t)
# sem_open through where_is_shmfs does stat on /dev/shm
fs_getattr_tmpfs(polaris_iomd_t)

#allow /dev/i2c device file
polaris_i2c_use(polaris_iomd_t)

#ifdef(`ngwc_family',`
# On Macallan platforms the following api call from iomd process,
# ngmodslot_is_upper_sup_present() does a read access of /dev/cpld
polaris_cpld_dev_read(polaris_iomd_t)
polaris_cpld_dev_use(polaris_iomd_t)

#allow cpp tmp file
polaris_cpp_tmp_files_use(polaris_iomd_t)

# In Macallan cards which use Doppler ASIC,
# IOMD module uses ngmod_doppler_mmap() api to get hold of
# MMapped Asic address. As part of the operation it uses
# /dev/chdrvmmmap device.
polaris_chdrvmmmap_dev_use(polaris_iomd_t)

# IOMD module invokes ASIC Scan functionality
# and calls asic_register_intr_handler () , which
# needs to access the doppler MSI devices
# /dev/msi/Slot[0-9]*/Doppler[0-9]/Group[0-9]
polaris_dplr_dev_use(polaris_iomd_t)
# but above still not enough at some point

```

```

# device like /dev/msi/Slot8/Doppler0/Group0 still
# considered as device_t, not clear need to look a bit more
dev_rw_generic_chr_files(polaris_iomd_t)

# on macallan iomd needs access to /dev/cisco/dplriomem
# for mapping dplr io memory to application space.
polaris_dplr_iomem_mmapdrv_dev_use(polaris_iomd_t);

# IOMD calls ngmod_obfl_errmssg_app_init() to initialize
# OBFL.
polaris_obfl_data_manage(polaris_iomd_t)

# IOMD fast path code invokes ngmod_fastpath_thread_func(),
# which increases the scheduler priority.
allow polaris_iomd_t self:capability sys_nice;
allow polaris_iomd_t self:process setsched;

# on macallan iomd needs access to /dev/cisco/fpga_iomem
# for mapping FPGA io memory to application space.
polaris_fpga_iomem_mmapfpga_dev_use(polaris_iomd_t);

optional_policy(`
# ASIC related mmap code in IOMD needs to access PCI scan related
# rescan shm mutex
polaris_cm_cc_tmpfs_manage(polaris_iomd_t)
`)

# both utah and macallan text relocations in libcxx_common_os.so
#ifdef(`crankshaft_family',`
polaris_icc_broken_relocations(polaris_iomd_t)
# Nightwatch switch module needs to access the doppler devices
polaris_dplr_dev_use(polaris_iomd_t)
dev_rw_generic_chr_files(polaris_iomd_t)
allow polaris_iomd_t self:capability sys_nice;
allow polaris_iomd_t self:process setsched;
`)

optional_policy(`
# Allow /dev/dmammmap access
polaris_dmammmap_dev_use(polaris_iomd_t)
`)

optional_policy(`
# on starfleet access gettysburg_fpga
polaris_gettysburg_fpga_dev_use(polaris_iomd_t)
`)

```

```

type polaris_iomd_tmp_t;
files_tmp_file(polaris_iomd_tmp_t)
manage_dirs_pattern(polaris_iomd_t, polaris_iomd_tmp_t, polaris_iomd_tmp_t)
manage_files_pattern(polaris_iomd_t, polaris_iomd_tmp_t, polaris_iomd_tmp_t)
manage_fifo_files_pattern(polaris_iomd_t, polaris_iomd_tmp_t, polaris_iomd_tmp_t)

# on macallan MRVL88X5113_DRV_PRINT macro outputs into /tmp/mrvl88x5113.log file
files_tmp_filetrans(polaris_iomd_t, polaris_iomd_tmp_t, file, "mrvl88x5113.log")

logging_send_syslog_msg(polaris_iomd_t)

#ifdef(^ngwc_family',`
# from in115050_test_app_thread_create in
# drivers/userspace/inphi/dev_ephy_in115050/src/dev_ephy_in115050.c
# For macallan in115025_test_app_thread_create in
# drivers/userspace/inphi/dev_ephy_in115025/src/dev_ephy_in115025.c
files_tmp_filetrans(polaris_iomd_t, polaris_iomd_tmp_t, dir, "test_inphi")

# In case of starfleet fixed the following module creates folder in /tmp
# /drivers/userspace/mrvl_phy/dev_ephy_mrvl88ec808/src/dev_ephy_m88ec808.c
files_tmp_filetrans(polaris_iomd_t, polaris_iomd_tmp_t, dir, "test_mrvlphy")

#allow access to /tmp/serdes_asic_key_dir as this path is used both by
#cman_fp for programming DPP serdes and IOMD for programming n/w serdes
optional_policy(`
polaris_serdes_asic_key_tmp_manage(polaris_iomd_t)
')

#Doppler E mac creates lockfiles with names following
#the pattern /tmp/nug_asic_key_dir/nug_asic_key_[0-9]_[0-9]_[0-9]
files_tmp_filetrans(polaris_iomd_t, polaris_iomd_tmp_t, dir, "nug_asic_key_dir")

#Doppler ES mac creates lockfiles with names following
#the pattern /tmp/rmt_asic_key_dir/rmt_asic_key_[0-9]_[0-9]_[0-9]
files_tmp_filetrans(polaris_iomd_t, polaris_iomd_tmp_t, dir, "rmt_asic_key_dir")

# from etopus_spawn_serdes_tool_thread in
# binos/platforms/ngwc/doppler_sdk/drivers/serdes/Vendor/src/etopus_serdes.c
files_tmp_filetrans(polaris_iomd_t, polaris_iomd_tmp_t, dir, "test_etp")

#on starfleet access /dev/cpld, in iomd_starfleet_create_mmap()
polaris_cpld_dev_use(polaris_iomd_t)
')

optional_policy(`
polaris_ngwc_itfpo_manage(polaris_iomd_t)
')

```

```

# ngio device
type polaris_ngio_device_t;
dev_node(polaris_ngio_device_t)

#For NGIO modules iomd uses netlink socket (via backplane switch)
allow polaris_iomd_t self:netlink_socket { bind create };

ifdef(^sumatra_platform';
#on Sumatra access /dev/cpld from iomd
polaris_cpld_dev_use(polaris_iomd_t)
# LOOK AT ME: After direct usage of /dev/mem is removed (CSCvw80796)
polaris_dev_mem_use(polaris_iomd_t)
polaris_sumatra_doppler_dev_use(polaris_iomd_t)

#access SERDES /tmp/serdes_asic_key_dir/*
polaris_serdes_asic_key_tmp_manage(polaris_iomd_t)

# access /dev/huron_fpga
polaris_huron_dev_use(polaris_iomd_t)

# manage "sysctrl_i2c.lck"
gen_require(
    type polaris_cm_rp_tmp_t;
)
files_tmp_filetrans(polaris_iomd_t, polaris_cm_rp_tmp_t, file, "sysctrl_i2c.lck")
polaris_cm_rp_tmp_manage(polaris_iomd_t)

# comm="iomd" kmod="netdev-bp246"
kernel_request_load_module(polaris_iomd_t)

# work with /sys/devices/i2c-15/15-0076/...
dev_rw_sysfs(polaris_iomd_t)
)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisiomd.te
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dnl
dnl April 2018, Victor Kamensky
dnl
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dnl
define(^polaris_lipc_service_server_many',
    `ifelse($3, `,
        polaris_lipc_create_name(dollarsone, $1, "$2"),
        polaris_lipc_create_name(dollarsone, $1, "$2-b$3")

```

```
`ifelse($3, 0, `polaris_lipc_create_name(dollarone, $1, "$2"), `polaris_lipc_service_server_many($1, $2,
eval($3 - 1))')')
```

```
define(`polaris_lipc_service_server_aux',`dnl
#####
## <summary>
## Create $2 lipc chanell.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <infoflow type="none"/>
#
interface(`polaris_lipc_$1_create_name",`
gen_require(
    type $2;
)
    $3
")
```

```
#####
## <summary>
## Write $2 lipc chanell.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <param name="server">
## <summary>
## Domain of owner of lipc channel.
## </summary>
## </param>
## <infoflow type="none"/>
#
interface(`polaris_lipc_$1_write",`
gen_require(
    type $2;
)

    polaris_lipc_write(dollarone, $2, dollarstwo)
)
)
```

```
define(`polaris_lipc_service_server',`dnl
```

```
polaris_lipc_service_server_aux(lipc_stem($1), lipc_label($1),
    polaris_lipc_service_server_many(lipc_label($1), $5, max_scope_map($3, $4, $2)))
```

```
define(`polaris_lipc_service_client',`')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_lipc_if.m4
```

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```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
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```

```
# All rights reserved
```

```
#
```

```
policy_module(polarisncd, 1.0);
```

```
gen_require(`
    type polaris_ncd_t;
`)
```

```
# allow sntp transition in its own domain when started by ncd
```

```
ntp_domtrans_ntpdate(polaris_ncd_t)
```

```
corecmd_exec_bin(polaris_ncd_t)
```

```
corecmd_exec_shell(polaris_ncd_t)
```

```
# run ldd, which in turns execve "ld.so --verify"
```

```
libs_exec_ld_so(polaris_ncd_t)
```

```
# allow read of /etc/group and /etc/passwd
```

```
auth_use_nsswitch(polaris_ncd_t)
```

```
# allow to read /proc/meminfo
```

```
kernel_read_system_state(polaris_ncd_t)
```

```
# work with /tmp files (/tmp/ncd)
```

```
type polaris_ncd_tmp_t;
```

```
files_tmp_file(polaris_ncd_tmp_t)
```

```
manage_dirs_pattern(polaris_ncd_t, tmp_t, polaris_ncd_tmp_t)
```

```
manage_files_pattern(polaris_ncd_t, tmp_t, polaris_ncd_tmp_t)
```

```
manage_fifo_files_pattern(polaris_ncd_t, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
```

```
files_tmp_filetrans(polaris_ncd_t, polaris_ncd_tmp_t, file)
```

```
# create /tmp/ncd and /tmp/etc/ncd_work_dir directories
```

```
gen_require(`
    type polaris_etc_t;
```

```

')
manage_dirs_pattern(polaris_ncd_t, { tmp_t polaris_etc_t }, polaris_ncd_tmp_t)
files_tmp_filetrans(polaris_ncd_t, polaris_ncd_tmp_t, dir, "ncd")
# /tmp/etc/ncd_work_dir
filetrans_pattern(polaris_ncd_t, polaris_etc_t, polaris_ncd_tmp_t, dir, "ncd_work_dir")

# work with /tmp/ncd/inot_fifo
files_tmp_filetrans(polaris_ncd_t, polaris_ncd_tmp_t, fifo_file, "inot_fifo")
manage_fifo_files_pattern(polaris_ncd_t, tmp_t, polaris_ncd_tmp_t)

# allow snmp to read out fifo file
gen_require(
    type ntpd_t;
)
read_fifo_files_pattern(ntpd_t, polaris_ncd_tmp_t, polaris_ncd_tmp_t)

# work with /tmp/ufs directory. the ufs directory can be created
# by both polaris_ncd_t and udev_t subjects (depending upon platform
# logic)
gen_require(
    type udev_t;
    type unconfined_service_t;
)
files_tmp_filetrans( { polaris_ncd_t udev_t unconfined_service_t }, polaris_ncd_tmp_t, dir, "ufs")

polaris_btrace_data_manage(polaris_ncd_t)
polaris_chasfs_manage(polaris_ncd_t)
polaris_cpuld_read(polaris_ncd_t)
polaris_proc_rmonbifo_read(polaris_ncd_t)
polaris_rmonbifo_tmp_read(polaris_ncd_t)
polaris_boot_tmp_read(polaris_ncd_t)
polaris_disk_crashinfo_getattr(polaris_ncd_t)
polaris_disk_bootflash_read_Ink(polaris_ncd_t)
polaris_flashlib_lock(polaris_ncd_t)
polaris_flashlib_read(polaris_ncd_t)
polaris_read_debug_conf(polaris_ncd_t)
polaris_read_packages_conf(polaris_ncd_t)

brctl_domtrans(polaris_ncd_t)
sysnet_domtrans_ifconfig(polaris_ncd_t)

# ncd.sh invokes ifup which in turn is calling dhclient
sysnet_domtrans_dhcp(polaris_ncd_t)

type polaris_ncd_etc_t;
files_config_file(polaris_ncd_etc_t)
gen_require(
    attribute domain;

```

```

')
files_etc_filetrans(domain, polaris_ncd_etc_t, file, "mount_data")
manage_dirs_pattern(polaris_ncd_t, polaris_ncd_etc_t, polaris_ncd_etc_t)
manage_files_pattern(polaris_ncd_t, polaris_ncd_etc_t, polaris_ncd_etc_t)

# runs exportsfs command
rpc_read_exports(polaris_ncd_t)
rpc_write_exports(polaris_ncd_t)
rpc_manage_nfs_state_data_dir(polaris_ncd_t)
rpc_manage_nfs_state_data(polaris_ncd_t)
fs_rw_nfsd_fs(polaris_ncd_t)
kernel_rw_rpc_sysctls(polaris_ncd_t)
fs_getattr_xattr_fs(polaris_ncd_t)

# reloads xinetd@/tmp/etc/xinetd.conf.consolidated.service and
# systemctl reload xinetd_brelay@eobc.service
systemd_exec_systemctl(polaris_ncd_t)
systemd_reload_all_services(polaris_ncd_t)
systemd_status_all_unit_files(polaris_ncd_t)

polaris_chvrf_domtrans(polaris_ncd_t)
# ncd process calls ifconfig and route and mcp_chvrf
gen_require(
    type polaris_chvrf_t;
)
sysnet_domtrans_ifconfig(polaris_chvrf_t)
allow polaris_chvrf_t self:capability net_admin;
allow polaris_chvrf_t self:udp_socket { create ioctl };
allow polaris_ncd_t self:process setpgid;

polaris_persistent_getattr(polaris_ncd_t)

# access to /etc/sysconfig/network-scripts
sysnet_read_config(polaris_ncd_t)

fs_getattr_tmpfs(polaris_ncd_t)

# manage file under /tmp/etc/ncd_work_dir
gen_require(
    type initrc_tmp_t;
    type initrc_t;
)
filetrans_pattern(polaris_ncd_t, initrc_tmp_t, polaris_ncd_tmp_t, dir,"ncd_work_dir")
polaris_ncd_tmp_manage(polaris_ncd_t)
# /tmp/root/loopback is created by initrc_t,but managed by ncd.sh.
# dynamic label directory "/tmp/root/loopback" as polaris_ncd_tmp_t
files_tmp_filetrans(initrc_t, polaris_ncd_tmp_t, dir, "loopback")
# flashutil has wrong file permission

```

```

allow polaris_ncd_t self:capability { dac_override sys_resource };

# access to /tmp/etc/xinetd.conf.consolidated
init_read_script_tmp_files(polaris_ncd_t)

allow polaris_ncd_t self:capability net_admin;

# search/getattr of /tmp/udev/etc/udev
polaris_udev_tmp_list_dirs(polaris_ncd_t)

# ncd calls mount to handle nfs directories
mount_domtrans(polaris_ncd_t)

#rsync_exec(polaris_ncd_t)
gen_require(
    type rsync_t;
    type rsync_tmp_t;
)
rsync_entry_domtrans(polaris_ncd_t, rsync_t)
allow rsync_t polaris_ncd_t:process sigchld;
# file descriptor leak when rsync is called
allow rsync_t polaris_ncd_t:fifo_file write;
# PLEASE LOOK AT ME: probably /tmp/rp/active_epoch deserves its own type
# /tmp/rp/active_epoch on its way to /tmp/chassis/local/rp/chasfs/rp/0/0/epoch
manage_files_pattern(polaris_ncd_t, rsync_tmp_t, rsync_tmp_t)

# creates files under /tmp/udev/etc/udev/
polaris_udev_tmp_manage(polaris_ncd_t)
allow polaris_ncd_t self:process setfscreate;

# run /sbin/hwclock in its own domain
clock_domtrans(polaris_ncd_t)
# stdin file descriptor leak when hwclock started
gen_require(
    type hwclock_t;
)
allow hwclock_t polaris_ncd_tmp_t:fifo_file read;

#ifdef(`ngwc_family',`
polaris_getattr_filesystem_disk_ucode(polaris_ncd_t)
)

# update /tmp/etc/xinetd.conf.consolidated file
polaris_etc_append(polaris_ncd_t)

# ncd.sh adds entries to /etc/exports file
gen_require(
    type etc_t;

```

```

')
append_files_pattern(polaris_ncd_t, etc_t, etc_t)

# create and write into /tmp/unifiedfs/unifiedfs_log
manage_files_pattern(polaris_ncd_t, polaris_ufs_tmp_t, polaris_ufs_tmp_t)

polaris_ncd_rpcinfo_net(polaris_ncd_t)

# accessing /mnt/usb0
fs_search_removable(polaris_ncd_t)
polaris_getattr_removable(polaris_ncd_t)
polaris_getattr_removable(polaris_ufs_helper_t)

# ncd.sh calls ps command
# ps needs access to /sys/devices/system/cpu/online
# write/create to "/sys/module/nfs/parameters/nfs4_unique_id"
dev_rw_sysfs(polaris_ncd_t)
dev_manage_sysfs_dirs(polaris_ncd_t)
gen_require(
    type sysfs_t;
)
create_files_pattern(polaris_ncd_t, sysfs_t, sysfs_t)

# ps needs access to proc_t
kernel_read_system_state(polaris_ncd_t)
# ps needs access to state of all domains
domain_read_all_domains_state(polaris_ncd_t)

# send signal to ntpd
ntp_signal(polaris_ncd_t)

# ncd.sh executes hostname
hostname_exec(polaris_ncd_t)

# ncd.sh runs mcp_trace_request.sh
polaris_trace_request_domtrans(polaris_ncd_t)

# handling /usr/binos/conf/iosd_console_attach.sh

polaris_utility_domain_template(console_attach)

polaris_bexecute_domain(polaris_console_attach_t, polaris_console_attach_exec_t)

corecmd_exec_bin(polaris_console_attach_t)
auth_use_nsswitch(polaris_console_attach_t)

# execute ping over liin: usr/binos/conf/mcp_chvrf.sh liin /bin/ping -c 1 -w 300 192.168.1.6
polaris_chvrf_domtrans(polaris_console_attach_t)

```

```

# from chvrf.sh code executes ping command
gen_require(
    type polaris_chvrf_t;
)
netutils_domtrans_ping(polaris_chvrf_t)
# send sigchld when it is done
gen_require(
    type ping_t;
)
allow ping_t polaris_console_attach_t:process sigchld;

polaris_boot_tmp_read(polaris_console_attach_t)
polaris_btrace_data_manage(polaris_console_attach_t)
polaris_chasfs_read(polaris_console_attach_t)
polaris_cpld_read(polaris_console_attach_t)
polaris_disk_bootflash_search(polaris_console_attach_t)
polaris_disk_crashinfo_getattr(polaris_console_attach_t)
polaris_ncd_tmp_read(polaris_console_attach_t)
polaris_read_debug_conf(polaris_console_attach_t)
polaris_rmonbifo_tmp_read(polaris_console_attach_t)
polaris_use_btrace_fifo(polaris_console_attach_t)

# read /proc/cmdline
kernel_read_system_state(polaris_console_attach_t)

# read /tmp/myhostname file
polaris_hm_tmp_read(polaris_console_attach_t)

telnet_use_ptys(polaris_console_attach_t)

allow polaris_console_attach_t self:capability sys_resource;
allow polaris_console_attach_t self:process setrlimit;

# getty starts /usr/binos/conf/iosd_console_attach.sh through brelay
gen_require(
    type getty_t;
)
polaris_bconsole_domtrans(getty_t)

# console_attach.sh start btelnet.sh over chvrf and bexecute
gen_require(
    type polaris_bexecute_t;
)
allow polaris_bexecute_t polaris_console_attach_t:process sigchld;
corenet_tcp_connect_telnetd_port(polaris_bexecute_t)

# handling /usr/binos/conf/unifiedfs/unifiedfs_helper.sh

```

```

polaris_utility_domain_template(ufs_helper)

corecmd_exec_bin(polaris_ufs_helper_t)
auth_use_nsswitch(polaris_ufs_helper_t)

# rsync calls unifiedfs_helper.sh
gen_require(
    type rsync_t;
)
polaris_ufs_helper_domtrans(rsync_t);

# unifiedfs_helper.sh calls mount to handle nfs directories
mount_domtrans(polaris_ufs_helper_t)

# creates files under /tmp/udev/etc/udev/
polaris_udev_tmp_manage(polaris_ufs_helper_t)

polaris_disk_bootflash_search(polaris_ufs_helper_t)
polaris_ncd_tmp_manage(polaris_ufs_helper_t)
polaris_ncd_etc_read(polaris_ufs_helper_t)

# stat over /tmp/ufs/crashinfo/10.1.1.1
polaris_disk_crashinfo_getattr(polaris_ufs_helper_t)

# unifiedfs_helper.sh creates /tmp/unifiedfs and manages underlying dirs
type polaris_ufs_tmp_t;
files_tmp_file(polaris_ufs_tmp_t)
files_tmp_filetrans(polaris_ufs_helper_t, polaris_ufs_tmp_t, { file dir })
manage_dirs_pattern(polaris_ufs_helper_t, polaris_ufs_tmp_t, polaris_ufs_tmp_t)
manage_files_pattern(polaris_ufs_helper_t, polaris_ufs_tmp_t, polaris_ufs_tmp_t)
manage_lnk_files_pattern(polaris_ufs_helper_t, polaris_ufs_tmp_t, polaris_ufs_tmp_t)

# Required for /tmp/unifiedfs access on vWLC
ifdef(^vwlc_platform',`
files_tmp_filetrans(unconfined_service_t, polaris_ufs_tmp_t, dir, "unifiedfs")
`)

polaris_ncd_rpcinfo_net(polaris_ufs_helper_t)

polaris_persistent_getattr(polaris_ufs_helper_t)

# rm from coreutils-8.30 wants to know filesystem type
fs_getattr_tmpfs(polaris_ufs_helper_t)

# ncd.sh read,search,open, creates, add_name and writes to /proc/hanet/tun_local_ip
gen_require(
type polaris_hanet_proc_t;
type proc_t;

```

```
)  
manage_files_pattern(polaris_ncd_t, polaris_hanet_proc_t, polaris_hanet_proc_t)  
allow polaris_hanet_proc_t proc_t:filesystem associate;  
  
allow polaris_ufs_helper_t self:capability sys_resource;
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisncd.te  
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```

dnl

dnl May 2018, Manohar Hungund

dnl

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dnl

dnl Starfleet Platform Max Bay Limits

```
max_bay_map_set(rp, `per_bay', 0)
```

```
max_bay_map_set(cc, `per_bay', 5)
```

```
max_bay_map_set(fp, `per_bay', 5)
```

```
min_bay_ripc_map_set(rp, `per_bay', 0)
```

```
min_bay_ripc_map_set(cc, `per_bay', 1)
```

```
min_bay_ripc_map_set(fp, `per_bay', 0)
```

```
max_bay_ripc_map_set(rp, `per_bay', 2)
```

```
max_bay_ripc_map_set(cc, `per_bay', 6)
```

```
max_bay_ripc_map_set(fp, `per_bay', 1)
```

```
min_bay_ripc_map_set(rp, `global', 0)
```

```
min_bay_ripc_map_set(cc, `global', 1)
```

```
min_bay_ripc_map_set(fp, `global', 0)
```

```
max_bay_ripc_map_set(rp, `global', 2)
```

```
max_bay_ripc_map_set(cc, `global', 6)
```

```
max_bay_ripc_map_set(fp, `global', 1)
```

dnl in elastic scope each process has its own value

```
max_elastic_map_set(rp, `elastic', BPROC_ODM, 0)
```

```
max_elastic_map_set(cc, `elastic', BPROC_ODM, 0)
```

```
max_elastic_map_set(fp, `elasitc', BPROC_ODM, 0)
```

```
max_elastic_map_set(rp, `elastic', BPROC_WNCD, 0)
```

```
max_elastic_map_set(cc, `elastic', BPROC_WNCD, 0)
```

```
max_elastic_map_set(fp, `elastic', BPROC_WNCD, 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/starfleetmaps.m4
```

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```
#
# November 2020, Christine Hwang
#
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#

# Map BBU TTY to correct device context
/dev/ttyS2          -c gen_context(system_u:object_r:polaris_bbu_device_t,s0)
```

Found in path(s):  
\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbbu.fc  
No license file was found, but licenses were detected in source scan.

```
#
# February 2018, Manohar Hungund
#
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#
```

```
## <summary>Polaris ACT2 Chip Device Access Policy Rules.</summary>
```

```
#####
# ACT2 Chip Driver policy
#####
```

```
#####
```

```
## <summary>
##   Work (read, write, ioctl) with /dev/act2
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
```

```
interface(`polaris_act2_dev_use',`
gen_require(`
    type device_t;
    type polaris_act2_device_t;
`)
read_chr_files_pattern($1, device_t, polaris_act2_device_t)
write_chr_files_pattern($1, device_t, polaris_act2_device_t)
')
```

```

#####
## <summary>
##   Create /tmp/hw_entropy file. Certain platforms save
##   entropy from main board ACT-2 chip in this file.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_hw_entropy_create`,`
    gen_require(`
        type polaris_hw_entropy_t;
        type tmp_t;
    `)

    files_tmp_filetrans($1, polaris_hw_entropy_t, file, "hw_entropy")
    manage_files_pattern($1, tmp_t, polaris_hw_entropy_t)
)

#####
## <summary>
##   Use /tmp/hw_entropy file. For some reason, iosd opens file in rw mode,
##   not clear why it couldn't just read it.
##   Certain platforms save entropy from main board ACT-2 chip in this file.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_hw_entropy_use`,`
    gen_require(`
        type polaris_hw_entropy_t;
        type tmp_t;
    `)

    rw_files_pattern($1, tmp_t, polaris_hw_entropy_t)
)

#####
## <summary>
##   Read /tmp/hw_entropy file.
##   Certain platforms save entropy from main board ACT-2 chip in this file.
## </summary>
## <param name="domain">

```

```
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_hw_entropy_read`,`
    gen_require(`
        type polaris_hw_entropy_t;
    `)

    read_files_pattern($1, tmp_t, polaris_hw_entropy_t)
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisact2.if

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```
#
# April 2017, Victor Kamensky
#
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#
```

```
policy_module(polarisdmbmand, 1.0);
```

```
gen_require(`
    type polaris_dmi_ndbmand_t;
`)
```

```
polaris_btrace_data_manage(polaris_dmi_ndbmand_t)
polaris_crft_data_manage(polaris_dmi_ndbmand_t)
polaris_chasfs_manage(polaris_dmi_ndbmand_t)
polaris_tdlresolve_read(polaris_dmi_ndbmand_t)
polaris_tdlldb_list_dirs(polaris_dmi_ndbmand_t)
polaris_cpuld_read(polaris_dmi_ndbmand_t)
polaris_flashlib_read(polaris_dmi_ndbmand_t)
```

```
polaris_rpc_sman_ui_serv_connect(polaris_dmi_ndbmand_t)
```

```
polaris_db_tdlldb_dir_use(polaris_dmi_ndbmand_t)
```

```
# work with NDBLOAD_LOCK_PATH
type polaris_dmi_ndbutil_lock_t;
files_tmp_file(polaris_dmi_ndbutil_lock_t)
polaris_ndbload_lock_use(polaris_dmi_ndbmand_t)
```

```
optional_policy(`
```

```

# deals with /dev/shm/confd setup (schema and pid)
polaris_confd_shm_setup(polaris_dmi_ndbmand_t)
# and allow read shared schema
polaris_confd_shared_schema_read(polaris_dmi_ndbmand_t)
# read /proc/confd_pid/exe file
polaris_confd_read(polaris_dmi_ndbmand_t)
')

allow polaris_dmi_ndbmand_t self:capability { dac_override dac_read_search sys_resource };

logging_send_syslog_msg(polaris_dmi_ndbmand_t)

# create ndbutil directory under /var/lock
polaris_confd_ndbutil_create(polaris_dmi_ndbmand_t)

polaris_ndbutil_lock_template(polaris_dmi_ndbmand_t, ndbmand, ".l.schema_use.ndbmand")

polaris_confd_shared_schema_watch(polaris_dmi_ndbmand_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmindbmand.te
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#
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#

policy_module(polarisomp, 1.0);

gen_require(^
    type polaris_omp_t;
)
polaris_chasfs_manage(polaris_omp_t)
polaris_cpld_read(polaris_omp_t)
polaris_flashlib_read(polaris_omp_t)
polaris_tdlresolve_read(polaris_omp_t)

polaris_ripc_sman_ui_serv_connect(polaris_omp_t)

polaris_db_tdlb_dir_use(polaris_omp_t)

logging_send_syslog_msg(polaris_omp_t)

# vconfd_load_shared_schemas
polaris_confd_shared_schema_read(polaris_omp_t)

```

```

# omp_daemon_init calls posix_sysconf
dev_read_sysfs(polaris_omp_t)

# reads /sys/fs/cgroup/cpuset/iosxe_control_processes/cpuset.cpus
fs_read_cgroup_files(polaris_omp_t)

# vip_util_set_fd_limits set files limits
allow polaris_omp_t self:process setrlimit;

# omp connects to omp listener tcp port 17900
corenet_tcp_connect_polaris_omp_port(polaris_omp_t)
# vip_util_reset_ns opens /proc/1/ns/net
polaris_cedge_reset_ns(polaris_omp_t)
# vip_util_set_ns opens /var/run/netns/*
polaris_cedge_set_ns(polaris_omp_t)

#omp_peer_active_connect() binds to OMP address
corenet_tcp_bind_generic_node(polaris_omp_t)
allow polaris_omp_t self:tcp_socket { bind connect create getopt setopt };

# omp starts worker thread under CPU affinity
allow polaris_omp_t self:process setsched;

# connects to ttm unix domain socket in msgq_connect_timer
polaris_ttm_var_sock_write(polaris_omp_t)
# connects to ftm unix domain socket in msgq_connect_timer
polaris_ftm_var_sock_write(polaris_omp_t)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisomp.te
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```

```

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#

```

```

## <summary>Polaris htx Policy Rules.</summary>

```

```

#####
## <summary>
##   Manage polaris_htx_iox_tmp_t in /tmp/HTX-IOX.
## </summary>
## <param name="domain">
##   <summary>

```

```

## Domain allowed access.
## </summary>
## </param>
interface(`polaris_htx_iox_tmp_manage',`
    gen_require(`
        type polaris_htx_iox_tmp_t;

    `)
    manage_files_pattern($1, polaris_htx_iox_tmp_t, polaris_htx_iox_tmp_t)
    manage_sock_files_pattern($1, polaris_htx_iox_tmp_t, polaris_htx_iox_tmp_t)
    manage_dirs_pattern($1, polaris_htx_iox_tmp_t, polaris_htx_iox_tmp_t)

    allow $1 polaris_htx_iox_tmp_t:dir watch;

    allow $1 polaris_htx_iox_tmp_t:file map;
)

```

```
#####
```

```

## <summary>
## Send messages to htx unix datagram sockets.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_htx_dgram_send',`
    gen_require(`
        type polaris_htx_t;
    `)

    allow $1 polaris_htx_t:unix_dgram_socket sendto;
)

```

```
#####
```

```

## <summary>
## Work (read, write, ioctl) with /dev/sppi_memif device
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_spپی_memif_dev_use',`
    gen_require(`
        type device_t;
    `)

```

```
        type polaris_sppi_memif_device_t;
    )
    write_chr_files_pattern($1, device_t, polaris_sppi_memif_device_t)
    read_chr_files_pattern($1, device_t, polaris_sppi_memif_device_t)
)
```

```
#####
```

```
## <summary>
```

```
##   Work with /tmp/HTX-IOX/.
```

```
## </summary>
```

```
## <param name="domain">
```

```
##   <summary>
```

```
##   Domain allowed access.
```

```
##   </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_htx_use_client_socket`,`
```

```
    gen_require(`
```

```
        type polaris_htx_t;
```

```
    `)
```

```
    allow $1 polaris_htx_t:unix_stream_socket connectto;
```

```
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarishtx.if

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```
#
```

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```
#
```

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```
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```

```
#
```

```
policy_module(polarisesgtamcfg, 1.0);
```

```
gen_require(`
```

```
    type polaris_esg_tam_cfg_t;
```

```
`)
```

```
polaris_btrace_data_manage(polaris_esg_tam_cfg_t)
```

```
polaris_chasfs_manage(polaris_esg_tam_cfg_t)
```

```
polaris_tdlresolve_read(polaris_esg_tam_cfg_t)
```

```
polaris_tdlldb_list_dirs(polaris_esg_tam_cfg_t)
```

```
polaris_flashlib_read(polaris_esg_tam_cfg_t)
```

```
polaris_cpld_read(polaris_esg_tam_cfg_t)
```

```
allow polaris_esg_tam_cfg_t self:capability net_admin;
```

```
# handle /tmp/tam_cfg_done
type polaris_tam_tmp_t;
files_tmp_file(polaris_tam_tmp_t)
files_tmp_filetrans(polaris_esg_tam_cfg_t, polaris_tam_tmp_t, dir, "tam_cfg_done")
manage_files_pattern(polaris_esg_tam_cfg_t, polaris_tam_tmp_t, polaris_tam_tmp_t)
gen_require(
    type tmp_t;
)
manage_dirs_pattern(polaris_esg_tam_cfg_t, tmp_t, polaris_tam_tmp_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisesgtamcfg.te

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```
#
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#
```

```
policy_module(polarisfmanfp, 1.0);
```

```
gen_require(
    type polaris_fman_fp_t;
)
```

```
polaris_btrace_data_manage(polaris_fman_fp_t)
polaris_crft_data_manage(polaris_fman_fp_t)
polaris_chasfs_manage(polaris_fman_fp_t)
polaris_tdlresolve_read(polaris_fman_fp_t)
polaris_tdlldb_list_dirs(polaris_fman_fp_t)
polaris_cpld_read(polaris_fman_fp_t)
polaris_lua_read(polaris_fman_fp_t)
polaris_flashlib_read(polaris_fman_fp_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_fman_fp_t)
```

```
# allow to send message to /dev/log
logging_send_syslog_msg(polaris_fman_fp_t)
```

```
#####
# mqipc manual, one that missing in platform tdl file
#####
```

```
# mq.-iosd-thr-fmanrp-R0:0
# mq.-iosd-thr-fmanrp-1:R0:0
```

```
type polaris_iosd_thr_fmanrp_mqipc_t;  
polaris_mqipc_type(polaris_iosd_thr_fmanrp_mqipc_t)
```

```
# mq.-mobilityd-thr-fmanrp-1:R0:0  
type polaris_mobilityd_thr_fmanrp_mqipc_t;  
polaris_mqipc_type(polaris_mobilityd_thr_fmanrp_mqipc_t)
```

```
# mq.-smd-thr-fmanrp-1:R0:0  
type polaris_smd_thr_fmanrp_mqipc_t;  
polaris_mqipc_type(polaris_smd_thr_fmanrp_mqipc_t)
```

```
# mq.-wncd_0-thr-fmanrp-1:R0:0  
type polaris_wncd_thr_fmanrp_mqipc_t;  
polaris_mqipc_type(polaris_wncd_thr_fmanrp_mqipc_t)
```

```
# mq.-wncmgrp_0-thr-fmanrp-1:R0:0  
type polaris_wncmgrp_thr_fmanrp_mqipc_t;  
polaris_mqipc_type(polaris_wncmgrp_thr_fmanrp_mqipc_t)
```

```
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-R0:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-1:R0:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-2:R0:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-3:R0:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-4:R0:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-5:R0:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-6:R0:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-7:R0:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-8:R0:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-R1:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-1:R1:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-2:R1:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-3:R1:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-4:R1:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-5:R1:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-6:R1:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-7:R1:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_iosd_thr_fmanrp_mqipc_t, iosd-thr-fmanrp-8:R1:0)
```

```
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_mobilityd_thr_fmanrp_mqipc_t, mobilityd-thr-fmanrp-  
R0:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_mobilityd_thr_fmanrp_mqipc_t, mobilityd-thr-fmanrp-  
1:R0:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_mobilityd_thr_fmanrp_mqipc_t, mobilityd-thr-fmanrp-  
2:R0:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_mobilityd_thr_fmanrp_mqipc_t, mobilityd-thr-fmanrp-  
3:R0:0)  
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_mobilityd_thr_fmanrp_mqipc_t, mobilityd-thr-fmanrp-  
4:R0:0)
```

polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_mobilityd\_thr\_fmanrp\_mqipc\_t, mobilityd-thr-fmanrp-5:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_mobilityd\_thr\_fmanrp\_mqipc\_t, mobilityd-thr-fmanrp-6:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_mobilityd\_thr\_fmanrp\_mqipc\_t, mobilityd-thr-fmanrp-7:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_mobilityd\_thr\_fmanrp\_mqipc\_t, mobilityd-thr-fmanrp-8:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_mobilityd\_thr\_fmanrp\_mqipc\_t, mobilityd-thr-fmanrp-R1:0)

polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_smd\_thr\_fmanrp\_mqipc\_t, smd-thr-fmanrp-R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_smd\_thr\_fmanrp\_mqipc\_t, smd-thr-fmanrp-1:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_smd\_thr\_fmanrp\_mqipc\_t, smd-thr-fmanrp-2:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_smd\_thr\_fmanrp\_mqipc\_t, smd-thr-fmanrp-3:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_smd\_thr\_fmanrp\_mqipc\_t, smd-thr-fmanrp-4:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_smd\_thr\_fmanrp\_mqipc\_t, smd-thr-fmanrp-5:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_smd\_thr\_fmanrp\_mqipc\_t, smd-thr-fmanrp-6:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_smd\_thr\_fmanrp\_mqipc\_t, smd-thr-fmanrp-7:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_smd\_thr\_fmanrp\_mqipc\_t, smd-thr-fmanrp-8:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_smd\_thr\_fmanrp\_mqipc\_t, smd-thr-fmanrp-R1:0)

polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncmgrd\_thr\_fmanrp\_mqipc\_t, wncmgrd-thr-fmanrp-R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncmgrd\_thr\_fmanrp\_mqipc\_t, wncmgrd-thr-fmanrp-1:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncmgrd\_thr\_fmanrp\_mqipc\_t, wncmgrd-thr-fmanrp-2:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncmgrd\_thr\_fmanrp\_mqipc\_t, wncmgrd-thr-fmanrp-3:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncmgrd\_thr\_fmanrp\_mqipc\_t, wncmgrd-thr-fmanrp-4:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncmgrd\_thr\_fmanrp\_mqipc\_t, wncmgrd-thr-fmanrp-5:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncmgrd\_thr\_fmanrp\_mqipc\_t, wncmgrd-thr-fmanrp-6:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncmgrd\_thr\_fmanrp\_mqipc\_t, wncmgrd-thr-fmanrp-7:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncmgrd\_thr\_fmanrp\_mqipc\_t, wncmgrd-thr-fmanrp-8:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncmgrd\_thr\_fmanrp\_mqipc\_t, wncmgrd-thr-fmanrp-R1:0)

polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncd\_thr\_fmanrp\_mqipc\_t, wncd\_0-thr-fmanrp-R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncd\_thr\_fmanrp\_mqipc\_t, wncd\_0-thr-fmanrp-1:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncd\_thr\_fmanrp\_mqipc\_t, wncd\_0-thr-fmanrp-2:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncd\_thr\_fmanrp\_mqipc\_t, wncd\_0-thr-fmanrp-3:R0:0)  
polaris\_mqipc\_create\_name(polaris\_fman\_fp\_t, polaris\_wncd\_thr\_fmanrp\_mqipc\_t, wncd\_0-thr-fmanrp-4:R0:0)

```
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_0-thr-fmanrp-5:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_0-thr-fmanrp-6:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_0-thr-fmanrp-7:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_0-thr-fmanrp-8:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_0-thr-fmanrp-R1:0)
```

```
optional_policy(`
```

```
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_1-thr-fmanrp-R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_1-thr-fmanrp-1:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_1-thr-fmanrp-2:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_2-thr-fmanrp-1:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_2-thr-fmanrp-2:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_3-thr-fmanrp-1:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_3-thr-fmanrp-2:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_4-thr-fmanrp-1:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_4-thr-fmanrp-2:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_5-thr-fmanrp-1:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_5-thr-fmanrp-2:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_6-thr-fmanrp-1:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_6-thr-fmanrp-2:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_7-thr-fmanrp-1:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_7-thr-fmanrp-2:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_1-thr-fmanrp-R1:0)
`)
```

```
polaris_cpld_dev_use(polaris_fman_fp_t)
```

```
# cpp bleeds into switching platforms through fman_fp and fed
```

```
# apparently even on nyquist fed creates /tmp/cpp_anon_db
```

```
polaris_cpp_process(polaris_fman_fp_t)
```

```
polaris_cpp_tmp_files_use(polaris_fman_fp_t)
```

```
optional_policy(`
```

```
polaris_cpp_dev_use(polaris_fman_fp_t)
```

```
polaris_cpp_cavium_sdk_ipc_use(polaris_fman_fp_t)
```

```
`)
```

```
polaris_persistent_manage(polaris_fman_fp_t)
```

```
polaris_icc_broken_relocations(polaris_fman_fp_t)
```

```
allow polaris_fman_fp_t self:capability dac_override;
```

```
allow polaris_fman_fp_t self:capability2 block_suspend;
```

```
# when /bootflash or /harddisk are 100% full
```

```
allow polaris_fman_fp_t self:capability sys_resource;
```

```
# write to devices like this /proc/bus/pci/04/00.0
```

```
kernel_read_system_state(polaris_fman_fp_t)
```

```
kernel_write_proc_files(polaris_fman_fp_t)
```

```

ifdef(^mcp_family',`
polaris_cm_fp_tmp_filetrans(polaris_fman_fp_t)
polaris_cm_fp_tmp_manage(polaris_fman_fp_t)
`)

# LOOK AT ME: raw memory write access
ifdef(^mcp_family',`
polaris_dev_mem_use(polaris_fman_fp_t)
`)

# LOOK AT ME: raw memory access in cavium vendor SDK
# related to octeon driver (BUG CSCvh58515)
ifdef(^crankshaft_family',`
polaris_dev_mem_use(polaris_fman_fp_t)
`)

polaris_dyncfg_tmp_read(polaris_fman_fp_t)

# /dev/qae_mem device access on overlord
optional_policy(`
polaris_qae_dev_use(polaris_fman_fp_t)
`)

# access to /dev/icp_XXX device on crankshaft platforms
optional_policy(`
    polaris_icp_dev_use(polaris_fman_fp_t)
`)

# on qwlc work with /tmp/octeon-remote-lock-pci:0
ifdef(^qwlc_platform',`
polaris_cm_fp_tmp_manage(polaris_fman_fp_t)
`)

ifdef(^katar_platform',`
polaris_cm_fp_tmp_manage(polaris_fman_fp_t)
`)

optional_policy(`
#fman-fp creates tmp files in acl-mgmt workflow.
polaris_fman_acl_iptbl_tmp_file(polaris_fman_fp_t)
`)

polaris_iosd_vcpu_read(polaris_fman_fp_t)

# allow open/read/search cgroup files like /sys/fs/cgroup/cpu,cpuacct/machine
fs_read_cgroup_files(polaris_fman_fp_t)
fs_search_cgroup_dirs(polaris_fman_fp_t)

```

```
optional_policy(`
# Access /dev/cbdma
polaris_cbdma_dev_use(polaris_fman_fp_t)

# Access /dev/n2_device
polaris_n2_dev_use(polaris_fman_fp_t)
`)
polaris_cpp_tmpfs_manage(polaris_fman_fp_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfmanfp.te
No license file was found, but licenses were detected in source scan.
```

```
#
# August 2017, Shawn Lu
#
# Copyright (c) 2017-2020 by Cisco Systems, Inc.
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#
## <summary>Polaris wncmgrd Policy Rules.</summary>
```

```
#####
## <summary>
## Read access to /bootflash/NACert.pem
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_read_icap_cert_file`,`
gen_require(`
type polaris_icap_cert_t;
`)
allow $1 polaris_icap_cert_t:file read_file_perms;
`)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswncmgrd.if
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
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```

```

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#

# polariskeyman file contexts place holder

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariskeyman.fc
No license file was found, but licenses were detected in source scan.

#
# March 2017, Victor Kamensky
#
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#

# /3pa staff
/3pa/usr/(.*)?lib64/(.*)? -- gen_context(system_u:object_r:lib_t,s0)
/3pa/usr/(.*)?lib/(.*)? -- gen_context(system_u:object_r:lib_t,s0)
/3pa/(.*)?lib64/(.*)? -- gen_context(system_u:object_r:lib_t,s0)
/3pa/(.*)?lib/(.*)? -- gen_context(system_u:object_r:lib_t,s0)
/3pa/usr/(.*)?sbin/(.*)? -- gen_context(system_u:object_r:bin_t,s0)
/3pa/usr/(.*)?bin/(.*)? -- gen_context(system_u:object_r:bin_t,s0)
/3pa/usr/sbin/libvirt_lxc -- gen_context(system_u:object_r:virt_d_lxc_exec_t,s0)
/usr/lib/libvirt/libvirt_lxc -- gen_context(system_u:object_r:virt_d_lxc_exec_t,s0)
/usr/sbin/libvirt_lxc -- gen_context(system_u:object_r:virt_d_lxc_exec_t,s0)
/3pa/usr/sbin/libvirt -- gen_context(system_u:object_r:virt_exec_t,s0)
/3pa/usr/sbin/virtlogd -- gen_context(system_u:object_r:virtlogd_exec_t,s0)
/3pa/usr/bin/virsh -- gen_context(system_u:object_r:virsh_exec_t,s0)
/3pa/usr/bin/qemu.* -- gen_context(system_u:object_r:qemu_exec_t,s0)
/usr/binos/conf/libvirt.sh -- gen_context(system_u:object_r:virt_d_initrc_exec_t,s0)
/3pa/etc/libvirt/(.*)? -- gen_context(system_u:object_r:virt_etc_t,s0)
/3pa/etc/logrotate.d/(.*)? -- gen_context(system_u:object_r:etc_t,s0)

# should go into contrib/telnet.fc?
/usr/binos/sbin/in.telnetd -- gen_context(system_u:object_r:telnetd_exec_t,s0)

# load_crash_kernel.sh loads crash kernel - it should be executable
/crashkernel/load_crash_kernel.sh -- gen_context(system_u:object_r:bin_t,s0)

# /etc/lablogin.sh is executed during telnet login over management port
# it should be executable. Also having shell_exec_t label will allow it
# to transition into unconfined domain
/etc/lablogin.sh -- gen_context(system_u:object_r:shell_exec_t,s0)

# /etc/init.d/*functions files should be actually in bin_t domain, the same
# as /etc/init.d/functions. Note using /etc/rc\.d/init\.d/ instead of
# /etc/init\.d/ because we have substitution rule in file_contexts.subs_dist

```

```

/etc/rc\,d\init\,d\binos_functions -- gen_context(system_u:object_r:bin_t,s0)
/etc/rc\,d\init\,d\binos_functions-pd -- gen_context(system_u:object_r:bin_t,s0)
/etc/rc\,d\init\,d\chasxml_functions -- gen_context(system_u:object_r:bin_t,s0)
/etc/rc\,d\init\,d\common-utility-functions -- gen_context(system_u:object_r:bin_t,s0)
/etc/rc\,d\init\,d\rh-functions -- gen_context(system_u:object_r:bin_t,s0)

# tftp directories
/tftp -d gen_context(system_u:object_r:tftpd_dir_rw_t,s0)
/tftp/. * gen_context(system_u:object_r:tftpd_dir_rw_t,s0)

# /tmp/sw
/tmp/sw -d gen_context(system_u:object_r:tmp_t,s0)
/tmp/rp -d gen_context(system_u:object_r:tmp_t,s0)
/tmp/fp -d gen_context(system_u:object_r:tmp_t,s0)
/tmp/cc -d gen_context(system_u:object_r:tmp_t,s0)

# /tmp/etc
/tmp/etc -d gen_context(system_u:object_r:polaris_etc_t,s0)

# /tmp/sv
/tmp/sv -d gen_context(system_u:object_r:polaris_sv_tmp_t,s0)

# firmware files
/firmware(/.*)? gen_context(system_u:object_r:polaris_firmware_t,s0)
/upgrade(/.*)? gen_context(system_u:object_r:polaris_firmware_t,s0)
/golden(/.*)? gen_context(system_u:object_r:polaris_firmware_t,s0)
# CC card fpd files mark it as usr_t for now
/fpd(/.*)? -- gen_context(system_u:object_r:polaris_firmware_t,s0)

/tmp/debug\,conf -l gen_context(system_u:object_r:polaris_debug_conf_t,s0)

/var/ODM/ios_core.p7b -- gen_context(system_u:object_r:etc_t,s0)

/dev/DDR -c gen_context(system_u:object_r:polaris_DDR_device_t,s0)
/dev/i2c-[0-9]* -c gen_context(system_u:object_r:polaris_i2c_device_t,s0)

/(.*)?\,ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/bin(/.*)?\,ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/wbin(/.*)?\,ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/lib(/.*)?\,ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/lib64(/.*)?\,ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr(/.*)?\,ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/bin(/.*)?\,ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/sbin(/.*)?\,ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/lib(/.*)?\,ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/lib64(/.*)?\,ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/binos(/.*)?\,ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/binos/bin(/.*)?\,ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)

```

```

/usr/binos/sbin/(.*)?\ebf/(.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/binos/lib/(.*)?\ebf/(.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/binos/lib64/(.*)?\ebf/(.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/opt/confd/lib/confd/lib/core/confd/priv/(.*)?\ebf/(.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)

# interpreter for CRDL 32bit IOSD setup proper memory map
/usr/binos/bin/crdl_mini_loader gen_context(system_u:object_r:ld_so_t,s0)

#firmware package mount point on asr1k platforms
/mnt/firmware/(.*)? gen_context(system_u:object_r:polaris_firmware_t,s0)

/bootflash/.USWAP/(.*)? gen_context(system_u:object_r:polaris_uswap_files_t,s0)

#Nutella EFI folder
/bootflash/EFI/(.*)? gen_context(system_u:object_r:polaris_efi_files_t,s0)

#for cat9k platform
/mnt/sd3/user/.USWAP/(.*)? gen_context(system_u:object_r:polaris_uswap_files_t,s0)

/tmp/rsync_log_dir/(.*)? gen_context(system_u:object_r:polaris_rsync_tmp_t,s0)

#for wlc awips feature
/bootflash/awips.json gen_context(system_u:object_r:polaris_awips_signature_file_t,s0)

# for wlc iot-gw feature to access /bootflash/certs dir
/bootflash/certs -d gen_context(system_u:object_r:polaris_ap_cert_file_t,s0)

#for curl - and allowing ip netns exec X curl
/usr/bin/curl -- gen_context(system_u:object_r:polaris_curl_exec_t,s0)

# Katar WLC needs access to /tmp/ldwm_envelope
/tmp/ldwm_envelope -- gen_context(system_u:object_r:polaris_ldwm_envelope_tmp_t,s0)

# CLI: show platform software tech-support
/usr/binos/conf/platform_tech_support.sh -- gen_context(system_u:object_r:polaris_tech_support_exec_t,s0)

# Tamlib debug file
/bootflash/tamlib_dbg_log -- gen_context(system_u:object_r:polaris_tamlib_dbg_file_t,s0)

# cryptsetup - some platforms copy cryptsetup in /bin
/bin/cryptsetup -- gen_context(system_u:object_r:lvm_exec_t,s0)
/usr/bin/cryptsetup -- gen_context(system_u:object_r:lvm_exec_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscommon.fc
No license file was found, but licenses were detected in source scan.

#

```

```
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#
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#
```

```
# polarisnvram file contexts place holder
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisnvram.fc
```

```
No license file was found, but licenses were detected in source scan.
```

```
dnl
```

```
dnl April 2018, Victor Kamensky
```

```
dnl
```

```
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
```

```
dnl All rights reserved
```

```
dnl
```

```
define(`polaris_process', `')dnl
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_process_if.m4
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
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```

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# All rights reserved
```

```
#
```

```
policy_module(polarisiptbl, 1.0);
```

```
#####
```

```
# iptbl.sh manual
```

```
#####
```

```
polaris_process_domain_template(iptbl)
```

```
corecmd_exec_bin(polaris_iptbl_t)
```

```
# allow to read /proc/meminfo
```

```
kernel_read_system_state(polaris_iptbl_t)
```

```
# allow read of /etc/passwd
```

```
auth_use_nsswitch(polaris_iptbl_t)
```

```
# run ldd, which in turns execve "ld.so --verify"
```

```

libs_exec_ld_so(polaris_iptbl_t)

# work with /tmp files
type polaris_iptbl_tmp_t;
files_tmp_file(polaris_iptbl_tmp_t)
manage_dirs_pattern(polaris_iptbl_t, tmp_t, polaris_iptbl_tmp_t)
manage_files_pattern(polaris_iptbl_t, polaris_iptbl_tmp_t, polaris_iptbl_tmp_t)
manage_fifo_files_pattern(polaris_iptbl_t, polaris_iptbl_tmp_t, polaris_iptbl_tmp_t)
files_tmp_filetrans(polaris_iptbl_t, polaris_iptbl_tmp_t, { file dir })

allow polaris_iptbl_t self:capability sys_resource;
allow polaris_iptbl_t self:process setpgid;

polaris_btrace_data_manage(polaris_iptbl_t)
polaris_cpld_read(polaris_iptbl_t)
polaris_chasfs_manage(polaris_iptbl_t)
polaris_boot_tmp_read(polaris_iptbl_t)
polaris_rmonbifo_tmp_read(polaris_iptbl_t)
polaris_proc_rmonbifo_getattr(polaris_iptbl_t)
polaris_proc_rmonbifo_read(polaris_iptbl_t)
polaris_disk_crashinfo_getattr(polaris_iptbl_t)

# execute /etc/init.d/iptables in its own domain
iptables_initrc_domtrans(polaris_iptbl_t)

# LOOK AT ME iptbl.sh puts symbolic links into /sbin directory
# need to fix manifest instead, so it will be static
gen_require(`
    type bin_t;
`)
manage_lnk_files_pattern(polaris_iptbl_t, bin_t, bin_t)

modutils_domtrans_insmod(polaris_iptbl_t)
iptables_domtrans(polaris_iptbl_t)

# iptbl.sh calls /etc/init.d/iptables restart and that needs
# read /proc/pid/net/ip_tables_names file
kernel_read_network_state(polaris_iptbl_t)
# creates /var/lock/subsys/iptables
type polaris_iptables_lock_t;
files_lock_file(polaris_iptables_lock_t)
manage_files_pattern(polaris_iptbl_t, polaris_iptables_lock_t, polaris_iptables_lock_t)
files_lock_filetrans(polaris_iptbl_t, polaris_iptables_lock_t, file)

# needs access to /run/netns as part of chvrf invocation
fs_read_nsfs_files(polaris_iptbl_t)
# iptbl.sh invokes iptable command which runs in iptables_t label and needs
# access to meta files created by iptbl.sh with label polaris_iptbl_tmp_t

```

```
allow iptables_t polaris_iptbl_tmp_t:fifo_file read_file_perms;
allow iptables_t polaris_iptbl_tmp_t:file read_file_perms;
```

```
# Allow /tmp/ufs/bootflash & /tmp/ufs/harddisk read access
ifdef(`vwlc_platform',`
optional_policy(
polaris_ncd_tmp_read(polaris_iptbl_t)
')
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisiptbl.te
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
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#
```

```
/usr/bin/bhytoolsd -- gen_context(system_u:object_r:polaris_bhytoolsd_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbhytoolsd.fc
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
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#
```

```
policy_module(polarisautoupgrade, 1.0);
```

```
gen_require(
    type polaris_autoupgrade_t;
)
```

```
corecmd_exec_bin(polaris_autoupgrade_t)
corecmd_exec_shell(polaris_autoupgrade_t)
```

```
# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_autoupgrade_t)
```

```
# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_autoupgrade_t)
```

```

# allow to read /proc/meminfo
kernel_read_system_state(polaris_autoupgrade_t)

allow polaris_autoupgrade_t self:capability { sys_resource dac_override };
allow polaris_autoupgrade_t self:process setpgid;

polaris_tdlldb_list_dirs(polaris_autoupgrade_t)

polaris_btrace_data_manage(polaris_autoupgrade_t)
polaris_chasfs_manage(polaris_autoupgrade_t)
polaris_cpuld_read(polaris_autoupgrade_t)
polaris_proc_rmonbifo_read(polaris_autoupgrade_t)
polaris_rmonbifo_tmp_read(polaris_autoupgrade_t)
polaris_boot_tmp_manage(polaris_autoupgrade_t)
polaris_read_debug_conf(polaris_autoupgrade_t)
polaris_disk_crashinfo_getattr(polaris_autoupgrade_t)

type polaris_autoupgrade_tmp_t;
files_tmp_file(polaris_autoupgrade_tmp_t)
# /tmp/etc/installer
gen_require(
    type polaris_etc_t;
)
filetrans_pattern(polaris_autoupgrade_t, polaris_etc_t, polaris_autoupgrade_tmp_t, dir, "installer")
manage_fifo_files_pattern(polaris_autoupgrade_t, polaris_autoupgrade_tmp_t, polaris_autoupgrade_tmp_t)
manage_dirs_pattern(polaris_autoupgrade_t, polaris_etc_t, polaris_autoupgrade_tmp_t)
manage_files_pattern(polaris_autoupgrade_t, polaris_autoupgrade_tmp_t, polaris_autoupgrade_tmp_t)

# Allow access to bootflash
polaris_bootflash_read(polaris_autoupgrade_t)

# Allow access to packages.conf
polaris_read_packages_conf(polaris_autoupgrade_t)

# needs to run pidof
dev_read_sysfs(polaris_autoupgrade_t)
kernel_read_system_state(polaris_autoupgrade_t)
domain_read_all_domains_state(polaris_autoupgrade_t)

# send syslog
logging_send_syslog_msg(polaris_autoupgrade_t)

# script starts rsync with mcp_chvrf.sh
polaris_chvrf_domtrans(polaris_autoupgrade_t)
gen_require(
    type rsync_t;
)

```

```

allow rsync_t polaris_autoupgrade_t:process sigchld;

# /tmp/ufs/crashinfo access
optional_policy(`
polaris_ncd_tmp_read(polaris_autoupgrade_t)
`)

# autoupgrade script in case of HA setup invokes breelay to trigger install of stand-by
polaris_bexecute_domtrans(polaris_autoupgrade_t)

polaris_flashlib_lock(polaris_autoupgrade_t)
polaris_flashlib_read(polaris_autoupgrade_t)
polaris_disk_install_read(polaris_autoupgrade_t)
polaris_install_engine_domtrans(polaris_autoupgrade_t)

#add transition to create /var/installer by autoupgrade
type polaris_autoupgrade_var_t;
files_tmp_file(polaris_autoupgrade_var_t)
files_var_filetrans(polaris_autoupgrade_t, polaris_autoupgrade_var_t, {file dir})
gen_require(`
    type polaris_autoupgrade_exec_t;
`)

#add transition to create /var/installer/auto_upgrade_helper.sh by autoupgrade
filetrans_pattern(polaris_autoupgrade_t,polaris_autoupgrade_var_t, polaris_autoupgrade_exec_t, file,
"auto_upgrade_helper.sh")
manage_files_pattern(polaris_autoupgrade_t, polaris_autoupgrade_var_t, polaris_autoupgrade_var_t)
manage_dirs_pattern(polaris_autoupgrade_t, polaris_autoupgrade_var_t, polaris_autoupgrade_var_t)

#add transition to create files/dir in /tmp
files_tmp_filetrans(polaris_autoupgrade_t, polaris_autoupgrade_tmp_t, {file dir})

# access to /tmp/installer
polaris_install_tmp_manage(polaris_autoupgrade_t)

fs_getattr_tmpfs(polaris_autoupgrade_t)

# access to /tmp/rsync_log_dir
polaris_manage_rsync_tmplog_dir(polaris_autoupgrade_t)

# access to /harddisk link (accessed by flashutil and rotee call)
polaris_disk_harddisk_read_lnk(polaris_autoupgrade_t)

rsync_entry_domtrans(polaris_chvrf_t, rsync_t)

gen_require(`
    type polaris_autoupgrade_t;
    type polaris_autoupgrade_exec_t;
`)

```

```

')
rsync_entry_domtrans(polaris_autoupgrade_t, rsync_t)
polaris_bexecute_domain(polaris_autoupgrade_t, polaris_autoupgrade_exec_t)

fs_getattr_xattr_fs(polaris_autoupgrade_t)

# auto_upgrade_helper.sh creates /var/installer/auto_upgrade_helper.sh
allow polaris_autoupgrade_t polaris_autoupgrade_exec_t:file { create setattr write };

# rsync operations for members and standby rps on autoupgrade
gen_require(
    type rsync_port_t;
)
allow polaris_autoupgrade_t rsync_port_t:tcp_socket name_connect;

# rsync requires to relabel /var/installer/auto_upgrade_helper.sh on standby
gen_require(
    type var_t;
)
allow rsync_t var_t:file relabelfrom;
allow rsync_t polaris_autoupgrade_exec_t:file relabelto;

# access to /vol/harddisk/*.pkg
polaris_getattr_file_harddisk(polaris_autoupgrade_t)

# access to /cdrom0/ when *ova image is booted during
# first instance of vwlc on ucs server
polaris_removable_read(polaris_autoupgrade_t)

polaris_getattr_file_harddisk(polaris_autoupgrade_t)

# auto_upgrade_client.sh access to "/tmp/sw/rp/0/0/rp_base/mount/bin/cut"
polaris_issu_tmp_files_read(polaris_autoupgrade_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisautoupgrade.te
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#
# June 2017, Victor Kamensky
#
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#

/usr/binos/conf/run_ioxn_caf.sh -- gen_context(system_u:object_r:polaris_caf_exec_t,s0)
/usr/binos/conf/iox_reset.sh -- gen_context(system_u:object_r:polaris_caf_exec_t,s0)

```

```

ifdef(`nyquist_platform',`
/usr/bin/os/conf/standby_ioxcfg.sh -- gen_context(system_u:object_r:polaris_sioxcd_rp_exec_t,s0)
/tmp/app_host(/.*)?          gen_context(system_u:object_r:polaris_sioxcd_rp_tmp_t,s0)
/mnt/sd3/iox_alt_hdd.dsk      gen_context(system_u:object_r:polaris_iox_alt_hdd_files_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir(/.*)?          gen_context(system_u:object_r:polaris_iox_alt_hdd_files_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/iox(/.*)?      gen_context(system_u:object_r:polaris_iox_files_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/caf(/.*)?      gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/iox_data_share(/.*)?  gen_context(system_u:object_r:polaris_iox_files_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/iox_host_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/guest_share(/.*)?
gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/mnt/sd3/user/gscript/sss(/.*)?  gen_context(system_u:object_r:polaris_iox_ss_disk_t,s0)
')

```

```

ifdef(`passport_platform',`
/flash1/iox_alt_hdd.dsk          gen_context(system_u:object_r:polaris_iox_alt_hdd_files_t,s0)
/flash1/iox_alt_hdd_mount_dir(/.*)?          gen_context(system_u:object_r:polaris_iox_alt_hdd_files_t,s0)
/flash1/iox_alt_hdd_mount_dir/iox(/.*)?      gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash1/iox_alt_hdd_mount_dir/caf(/.*)?      gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/flash1/iox_alt_hdd_mount_dir/iox_data_share(/.*)?  gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash1/iox_alt_hdd_mount_dir/iox_host_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash1/iox_alt_hdd_mount_dir/guest_share(/.*)?
gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/flash1/user/gscript/sss(/.*)?  gen_context(system_u:object_r:polaris_iox_ss_disk_t,s0)
/usr/bin/os/conf/standby_ioxcfg.sh gen_context(system_u:object_r:polaris_sioxcd_rp_exec_t,s0)
/tmp/app_host(/.*)?          gen_context(system_u:object_r:polaris_sioxcd_rp_tmp_t,s0)
')

```

```

#All possible accesses from /bootflash/iox_alt_hdd_mount_dir (iox_polaris.conf)
/bootflash/iox_alt_hdd.dsk          gen_context(system_u:object_r:polaris_iox_alt_hdd_files_t,s0)
/bootflash/iox_alt_hdd_mount_dir(/.*)?
gen_context(system_u:object_r:polaris_iox_alt_hdd_files_t,s0)
/bootflash/iox_alt_hdd_mount_dir/iox(/.*)?          gen_context(system_u:object_r:polaris_iox_files_t,s0)
/bootflash/iox_alt_hdd_mount_dir/caf(/.*)?          gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/bootflash/iox_alt_hdd_mount_dir/iox_data_share(/.*)?  gen_context(system_u:object_r:polaris_iox_files_t,s0)
/bootflash/iox_alt_hdd_mount_dir/iox_host_data_share(/.*)?
gen_context(system_u:object_r:polaris_iox_files_t,s0)
/bootflash/iox_alt_hdd_mount_dir/guest_share(/.*)?
gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/bootflash/user/gscript/sss(/.*)?  gen_context(system_u:object_r:polaris_iox_ss_disk_t,s0)

```

```

#All the possible IOX guestshell_dir from iox_polaris.conf
/guestshell(/.*)?(.*)\.sh          gen_context(system_u:object_r:polaris_guestshell_exec_t,s0)
/guestshell(/.*)?                  gen_context(system_u:object_r:polaris_guestshell_t,s0)

```

```

#All the possible IOX flash_dir/harddisk_dir from iox_polaris.conf
/bootflash/iox(/.*)?                gen_context(system_u:object_r:polaris_iox_files_t,s0)
/mnt/sd3/iox(/.*)?                  gen_context(system_u:object_r:polaris_iox_files_t,s0)

```

```

/flash1/iox(/.*)?          gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash11/iox(/.*)?        gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/harddisk/iox(/.*)?    gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/disk0/iox(/.*)?       gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/usb1/iox(/.*)?        gen_context(system_u:object_r:polaris_iox_files_t,s0)

/bootflash/iox_data_share(/.*)?  gen_context(system_u:object_r:polaris_iox_files_t,s0)
/mnt/sd3/iox_data_share(/.*)?    gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash1/iox_data_share(/.*)?     gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash11/iox_data_share(/.*)?    gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/harddisk/iox_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/disk0/iox_data_share(/.*)?   gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/usb1/iox_data_share(/.*)?    gen_context(system_u:object_r:polaris_iox_files_t,s0)

/bootflash/iox_host_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/mnt/sd3/iox_host_data_share(/.*)?   gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash1/iox_host_data_share(/.*)?    gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash11/iox_host_data_share(/.*)?   gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/harddisk/iox_host_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/disk0/iox_host_data_share(/.*)?  gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/usb1/iox_host_data_share(/.*)?   gen_context(system_u:object_r:polaris_iox_files_t,s0)

/opt/cisco/caf/scripts(/.*)?(.*)\.sh gen_context(system_u:object_r:polaris_caf_exec_t,s0)
/opt/cisco/caf(/.*)?(.*)             gen_context(system_u:object_r:polaris_caf_files_t,s0)
/opt/cisco/caf                        -d gen_context(system_u:object_r:polaris_caf_files_t,s0)

/var/log/caf(/.*)?                  gen_context(system_u:object_r:polaris_caf_log_t,s0)

/etc/guestshell_rsa_key\.pub         gen_context(system_u:object_r:polaris_guestshell_ssh_key_t,s0)
/etc/guestshell_rsa_key              gen_context(system_u:object_r:polaris_guestshell_ssh_key_t,s0)

/tmp/caf(/.*)?                      gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/bootflash/caf(/.*)?                gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/mnt/sd3/caf(/.*)?                  gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/flash1/caf(/.*)?                   gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/flash11/caf(/.*)?                  gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/vol/harddisk/caf(/.*)?              gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/vol/disk0/caf(/.*)?                gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/vol/usb1/caf(/.*)?                 gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)

/var/run/netns/guestshell            gen_context(system_u:object_r:polaris_guestshell_var_run_t,s0)
/var/run/cisco_cli(/.*)?             gen_context(system_u:object_r:polaris_caf_var_run_t,s0)

/tmp/ttyF(/.*)/(.*)                 gen_context(system_u:object_r:fifo_var_run_t,s0)

# All the possible IOX bootflash/guest-share directory. This directory is shared between IOS and IOX
/bootflash/guest-share(/.*)?         gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)

```

```
/mnt/sd3/guest-share(/.*)?      gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/flash1/guest-share(/.*)?      gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/flash11/guest-share(/.*)?     gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/vol/harddisk/guest-share(/.*)? gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/vol/disk0/guest-share(/.*)?   gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/vol/usb1/guest-share(/.*)?    gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscfaf.fc
```

No license file was found, but licenses were detected in source scan.

```
#
# December 2019, Victor Kamensky
#
# Copyright (c) 2019 by Cisco Systems, Inc.
# All rights reserved
#
```

```
# polarisfnfagg file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfnfagg.fc
```

No license file was found, but licenses were detected in source scan.

```
#
# March 2017, Victor Kamensky
#
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#
```

```
## <summary>Polaris cmm Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscmm.if
```

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```
#
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#
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#
```

```
# polarisplogd file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisplogd.fc
```

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```
dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
divert(-1)
```

```
include(`polaris_process.m4')
include(`polaris_process_if.m4')
```

```
include(`polaris_ipc_mqipc.m4')
include(`polaris_ipc_mqipc_if.m4')
```

```
include(`polaris_ipc_ripc.m4')
include(`polaris_ipc_ripc_if.m4')
```

```
include(`polaris_ipc_lipc.m4')
include(`polaris_ipc_lipc_if.m4')
```

```
dnl Stub out non existent one
define(`polaris_websocket_service_server',`)
define(`polaris_cipc_service_server',`')
```

```
include(`polaris_max_scope.m4')
```

```
divert(0)dnl
#
# This is a generated file! Instead of modifying this file,
# modify proper platform TDL file.
#
## <summary>Polaris Platform IPC Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_if.m4

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```
#
# April 2017, Victor Kamensky
#
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# All rights reserved
#
```

```
/tmp/.1.ndbutil-load gen_context(system_u:object_r:polaris_dmi_ndbutil_lock_t,s0)
/tmp/.1.ndbutil-use gen_context(system_u:object_r:polaris_dmi_ndbutil_lock_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmindbmand.fc

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#

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#

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#

/dev/cpp\_vxe\_rsrc -c gen\_context(system\_u:object\_r:polaris\_cpp\_device\_t,s0)

/dev/cpp\_dev\_info -c gen\_context(system\_u:object\_r:polaris\_cpp\_device\_t,s0)

/dev/cpp -c gen\_context(system\_u:object\_r:polaris\_cpp\_device\_t,s0)

/dev/cpp\_kipc -c gen\_context(system\_u:object\_r:polaris\_cpp\_device\_t,s0)

# on Ing box

/dev/octeon\_device -c gen\_context(system\_u:object\_r:polaris\_cpp\_device\_t,s0)

/dev/cpp\_pdma -c gen\_context(system\_u:object\_r:polaris\_cpp\_device\_t,s0)

/dev/i95\_[0-9]\* -c gen\_context(system\_u:object\_r:polaris\_i95\_device\_t,s0)

/dev/shm/cpp\_.\* -- gen\_context(system\_u:object\_r:polaris\_cpp\_tmpfs\_t,s0)

/dev/shm/sem\,cpp\_.\* -- gen\_context(system\_u:object\_r:polaris\_cpp\_tmpfs\_t,s0)

/dev/shm/sem\,CPP\_.\* -- gen\_context(system\_u:object\_r:polaris\_cpp\_tmpfs\_t,s0)

/dev/shm/sem\,CGM\_SHM\_SEM -- gen\_context(system\_u:object\_r:polaris\_cpp\_tmpfs\_t,s0)

/dev/shm/cpp\_ucose\_dram -- gen\_context(system\_u:object\_r:polaris\_cpp\_tmpfs\_t,s0)

/dev/shm/cpp\_sbs\_shm -- gen\_context(system\_u:object\_r:polaris\_cpp\_tmpfs\_t,s0)

/mnt/huge/cpp\_ucose\_dram -- gen\_context(system\_u:object\_r:polaris\_cpp\_tmpfs\_t,s0)

/tmp/cpp\_ifdev\_rep -p gen\_context(system\_u:object\_r:polaris\_cpp\_tmp\_t,s0)

/tmp/cpp\_ifdev\_req -p gen\_context(system\_u:object\_r:polaris\_cpp\_tmp\_t,s0)

/tmp/cpp\_anon\_db -- gen\_context(system\_u:object\_r:polaris\_cpp\_tmp\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscpp.fc

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#

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#

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#

policy\_module(polarisservicemgr, 1.0);

gen\_require(`

```

    type polaris_service_mgr_t;
)

polaris_btrace_data_manage(polaris_service_mgr_t)
polaris_crft_data_manage(polaris_service_mgr_t)
polaris_chasfs_manage(polaris_service_mgr_t)
polaris_cpld_read(polaris_service_mgr_t)
polaris_flashlib_read(polaris_service_mgr_t)
polaris_lua_read(polaris_service_mgr_t)
polaris_tdlresolve_read(polaris_service_mgr_t)

polaris_ripc_sman_ui_serv_connect(polaris_service_mgr_t)

polaris_db_tdlldb_dir_use(polaris_service_mgr_t)

# Use REPM MQIPC for replication
polaris_repm_peer_mqipc_manage(polaris_service_mgr_t)

#watches of /tmp/[rp|fp|cc]/pvp/process_state directory
polaris_process_state_watch(polaris_service_mgr_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisservicemgr.te
No license file was found, but licenses were detected in source scan.

#
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#
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#

policy_module(polarispvp, 1.0);

polaris_process_domain_template(pvp)

# transition to pman domain, once pman is invoked by pvp
polaris_pman_domtrans(polaris_pvp_t)

corecmd_exec_bin(polaris_pvp_t)
corecmd_exec_shell(polaris_pvp_t)
# can execute hostname in pvp domain
hostname_exec(polaris_pvp_t)
# can execute process in polaris domain
polaris_exec(polaris_pvp_t)

# allow to read /proc/meminfo
kernel_read_system_state(polaris_pvp_t)

```

```

# allow to get getattr of /proc file system during find over it
kernel_getattr_proc(polaris_pvp_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_pvp_t)

# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_pvp_t)

# all to read sysctl files in /proc directory
kernel_read_all_sysctls(polaris_pvp_t)

# work with /tmp files
type polaris_pvp_tmp_t;
files_tmp_file(polaris_pvp_tmp_t)
manage_dirs_pattern(polaris_pvp_t, tmp_t, polaris_pvp_tmp_t)
manage_files_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_pvp_tmp_t)
manage_fifo_files_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_pvp_tmp_t)
files_tmp_filetrans(polaris_pvp_t, polaris_pvp_tmp_t, { file dir })
filetrans_pattern(domain, tmp_t, polaris_pvp_tmp_t, dir, "pvp")

# /tmp/silent_roll_select.log handling on Macallan
filetrans_pattern(domain, tmp_t, polaris_pvp_tmp_t, file, "silent_roll_select.log")

# work with /tmp/[rp|fp|cc]/pvp/process_state files
type polaris_process_state_t;
files_tmp_file(polaris_process_state_t)
manage_dirs_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_process_state_t)
manage_files_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_process_state_t)
filetrans_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_process_state_t, dir, "process_state")

# LOOK AT ME now all polaris process can change each other process
# state. Need to fix it with more process specific labels in case
# when polaris_domain_process becomes template.
gen_require(
    attribute polaris_domain;
)
polaris_pvp_manage_process_state_files(polaris_domain)

allow polaris_pvp_t self:capability sys_resource;

# readlink access to /proc/<pid>/fd/0 triggers sys_ptrace capability need
allow polaris_pvp_t self:capability { sys_ptrace };

dmidecode_domtrans(polaris_pvp_t)

#on some ngwc pvp has to code-sign-verify silent roll packages

```

```

ifdef(`ngwc_family',`
polaris_code_verify_domtrans(polaris_pvp_t)
')

polaris_btrace_data_manage_all(polaris_pvp_t)
polaris_chasfs_manage(polaris_pvp_t)
polaris_cpld_read(polaris_pvp_t)
polaris_cpld_write(polaris_pvp_t)
polaris_proc_rmonbifo_read(polaris_pvp_t)
polaris_rmonbifo_tmp_read(polaris_pvp_t)
polaris_tdldb_list_dirs(polaris_pvp_t)
polaris_boot_tmp_read(polaris_pvp_t)
polaris_read_debug_conf(polaris_pvp_t)

# LOOK AT ME pvp.sh runs find over /proc. Needs access
# to state of all processes
domain_read_all_domains_state(polaris_pvp_t)

# pvp.sh can call logger command
logging_send_syslog_msg(polaris_pvp_t)

# should it not be moved to dmidecode module or better
# change script to call dmidecode with stdin redirected
# from /dev/null (i.e dmidecode < /dev/null)
gen_require(`
    type dmidecode_t;
')
polaris_pvp_stdin_read(dmidecode_t)

# read pman tmp files
polaris_pman_read_tmp_files(polaris_pvp_t)

#allow polaris_pvp_t polaris_udev_tmp_files_t:dir { getattr search };
polaris_udev_tmp_list_dirs(polaris_pvp_t)

gen_require(`
    type initrc_t;
    type init_t;
')
#init_script_tmp_filetrans(initrc_t, polaris_pvp_tmp_t, file, "iosd_memory_share")
files_tmp_filetrans({ initrc_t init_t }, polaris_pvp_tmp_t, file, "iosd_memory_share")

polaris_systemd_tmpfiles_tmp_filetrans(polaris_pvp_tmp_t, dir, "max_elastic_bays")

# direct access to serial TTY devices like /dev/ttyS1
term_write_unallocated_ttys(polaris_pvp_t)

# For Cabo, allow access to GNSS device

```

```

ifdef(`cabo_platform',`
polaris_cabo_gnss_dev_use(polaris_pvp_t)
`)

# on ultra pvp calls hv_ttyprobe utility to figure out what terminal
# to use as console, and this one need read access to terminal. There is
# no separate macro for read only. But since we granting write to everyone
# let use 'use' which means read/write
ifdef(`vxe_family',`
term_use_unallocated_ttys(polaris_pvp_t)
`)
ifdef(`wlc_family',`
term_use_unallocated_ttys(polaris_pvp_t)
`)
# pvp's linux_iods_image_env.sh will check /dev/ttyUSB* ports with hv_ttyprobe too.
term_use_usb_ttys(polaris_pvp_t)

# allow access and modify files in /tftp directory, cannot use tftp_manage_rw_content
# since it does not cover link files
gen_require(`
    type tftpd_dir_rw_t;
`)
manage_dirs_pattern(polaris_pvp_t, tftpd_dir_rw_t, tftpd_dir_rw_t)
manage_files_pattern(polaris_pvp_t, tftpd_dir_rw_t, tftpd_dir_rw_t)
manage_lnk_files_pattern(polaris_pvp_t, tftpd_dir_rw_t, tftpd_dir_rw_t)

# ASR1K modular platforms create /tftp/inv/inventory_$(fru)$(slot).bin
# /tftp/inv is not a softlink but a directory for asr1k Modular platforms.
# So it needs a file transition to polaris_chasfs_t for accessing it.
ifdef(`mcp_family',`
filetrans_pattern(domain, tftpd_dir_rw_t, polaris_chasfs_t, dir, "inv")
`)
# on ultra platform hv_ttyprobe utility that runs under polaris_pvp_t label
# checks for existence of /boot/ttyS0_ignore file; and since /boot is symlink
# to /varied it need dir search permission over polaris_disk_varied_t
ifdef(`vxe_family',`
polaris_disk_varied_search(polaris_pvp_t)
`)
ifdef(`wlc_family',`
polaris_disk_varied_search(polaris_pvp_t)
`)

# pvp.sh calls cp utility with -a option that should preserve files
# attributes as result cp needs to perform set_process_security_ctx call
# which in turns calls setfscreatecon
allow polaris_pvp_t self:process setfscreate;

# pvp.sh calls pidof utility and it needs read access to sysfs_t

```

```

#
# When resetting a partner, pvp writes to the PCIe switch global
# reset register using the i2c driver, which is also sysfs_t
# LOOK AT ME should we create a new type for the PCIe switch reg
dev_rw_sysfs(polaris_pvp_t)

# wants to execute /bin/dmesg
dmesg_domtrans(polaris_pvp_t)

# wants to read from /tmp/rp/pvp/work/inot_fifo
gen_require(
    type dmesg_t;
)
rw_fifo_files_pattern(dmesg_t, polaris_pvp_tmp_t, polaris_pvp_tmp_t)

# wants to write into /bootflash/.prst_sync
polaris_persistent_manage(polaris_pvp_t)

# pvp tried to find all execept hman polaris process with
# 'find /tmp/rp/process -name *.pid ! -name *hman* -printf %p' command
# should be able to read pman tmp files
polaris_pman_read_tmp_files(polaris_pvp_t)

# on way down pvp.sh call 'workon.sh rp 0 rotate force' so we
# need to transition and run it in btrace_rotate domain
polaris_btrace_rotate_domtrans(polaris_pvp_t)

# on way down pvp.sh checks for *.TEMP_IN_PROGRESS in /misc/scratch/core
# need to be able read /misc/scratch link
polaris_disk_bootflash_read_lnk(polaris_pvp_t)

# implode.sh things, should we run them in its own domain?

# removes /etc/exports, create a new empty one and runs 'exportfs -ua'
# this action also needs kernel_rw_rpc_sysctls to flush
files_manage_etc_files(polaris_pvp_t)
gen_require(
    type exports_t;
)
allow polaris_pvp_t exports_t:file delete_file_perms;
rpc_write_exports(polaris_pvp_t)
rpc_manage_nfs_state_data(polaris_pvp_t)
kernel_rw_rpc_sysctls(polaris_pvp_t)

# calls 'systemctl reboot'
systemd_start_power_services(polaris_pvp_t)

# pvp on 1ng attempts to rm readonly fpd firmware file, not sure why

```

```

polaris_firmware_getattr(polaris_pvp_t)

# pvp reads /tmp/iosd_level
polaris_lm_tmp_read(polaris_pvp_t)
allow polaris_pvp_t self:capability dac_override;

# in some image pvp needs to mount /tmp/rp/tlddb, in other images
# it got mount by chasfs_boottime.sh systemd unit
polaris_tlddb_manage_dirs(polaris_pvp_t)
mount_domtrans(polaris_pvp_t)

# in some cases pvp script creates /tmp/xx/process directory
polaris_pman_tmp_filetrans(polaris_pvp_t, dir, "process")
polaris_pman_manage_tmp_files(polaris_pvp_t)

# on ngwc pvp creates /flash1/NVRAM directory
gen_require(
    type polaris_nvram_file_t;
    type root_t;
)
filetrans_pattern(polaris_pvp_t, root_t, polaris_nvram_file_t, dir, "flash1")
manage_dirs_pattern(polaris_pvp_t, polaris_nvram_file_t, polaris_nvram_file_t)

# obtain access to rommon vars which live in flashlib
polaris_flashlib_read(polaris_pvp_t)
polaris_flashlib_write(polaris_pvp_t)

# on ngwc platforms pvp creates a /obfl_cc directory and soft links it
# to the correct vbd device
#ifdef(^ngwc_family';`
gen_require(
    type polaris_obfl_data_t;
    type root_t;
)
filetrans_pattern(polaris_pvp_t, root_t, polaris_obfl_data_t, dir, "obfl_cc")
)

# on ngwc platforms pvp needs to be able to determine if the the vbd devices
# exist. The types may be slightly different depending on whether the cc's
# device node is managed by udev or not
#ifdef(^ngwc_family';`
dev_getattr_generic_blk_files(polaris_pvp_t)
storage_getattr_fixed_disk_dev(polaris_pvp_t)
udev_read_db(polaris_pvp_t)
)

# on ngwc platforms pvp soft links the /tmp/sw/cc_srdriver/<slot> directory
# to the correct silent roll software package via vbd_sr_app_init()
#ifdef(^ngwc_family';`

```

```

polaris_sw_data_manage(polaris_pvp_t)
')

# on blackheart pvp creates /blackheart_config directory
ifdef(`blackheart_platform',`
gen_require(
    type polaris_nvram_file_t;
    type root_t;
)
filetrans_pattern(polaris_pvp_t, root_t, polaris_nvram_file_t, dir, "blackheart_config")
manage_dirs_pattern(polaris_pvp_t, polaris_nvram_file_t, polaris_nvram_file_t)
)

# on sparrow pvp creates /sparrow_config directory
ifdef(`sparrow_platform',`
gen_require(
    type polaris_nvram_file_t;
    type root_t;
)
filetrans_pattern(polaris_pvp_t, root_t, polaris_nvram_file_t, dir, "sparrow_config")
manage_dirs_pattern(polaris_pvp_t, polaris_nvram_file_t, polaris_nvram_file_t)
)

# on Aventus pvp creates /aventus_config directory
ifdef(`aventus_platform',`
gen_require(
    type polaris_nvram_file_t;
    type root_t;
)
filetrans_pattern(polaris_pvp_t, root_t, polaris_nvram_file_t, dir, "aventus_config")
manage_dirs_pattern(polaris_pvp_t, polaris_nvram_file_t, polaris_nvram_file_t)
fs_manage_configs_files(polaris_pvp_t)
)

# on utah for cc and on lmg cyan_init.sh is executed by pvp
polaris_dyncfg_domtrans(polaris_pvp_t)
# should it not be moved to cyan module or better
# change script to call cyan_init.sh with stdin redirected
# from /dev/null (i.e cyan_init.sh < /dev/null)
gen_require(
    type polaris_dyncfg_t;
)
polaris_pvp_stdin_read(polaris_dyncfg_t)

# mktmpfd checks /tmp file system attributes
fs_getattr_tmpfs(polaris_pvp_t)

optional_policy(

```

```

# pvp on nyquist ls /tmp/ufs/crashinfo
polaris_ncd_tmp_read(polaris_pvp_t)
')

# transition to polaris_load_usbnet_t, once load_usbnet.sh is invoked by pvp
# crankshaft platforms need access to configfs
#ifdef(^crankshaft_family',`
polaris_load_usbnet_domtrans(polaris_pvp_t)
gen_require(^
    type configfs_t;
')
allow polaris_pvp_t configfs_t:dir getattr;
')

# runs rsync -ptgoDLq /bootflash/.installer/issu_crash/fru_crash rsync://rp0-0/bootflash/.installer/...
rsync_entry_type(polaris_pvp_t)

#ifdef(^ngwc_family',`
polaris_chvrf_domtrans(polaris_pvp_t)
gen_require(^
    type rsync_t;
')
allow rsync_t polaris_pvp_t:process sigchld;

# pvp_tmp file descriptor leaks into mcp_chvrf.sh
gen_require(^
    type polaris_chvrf_t;
    type polaris_pvp_tmp_t;
')
allow polaris_chvrf_t polaris_pvp_tmp_t:fifo_file { ioctl read };
')

# statfs64 over /tmp
fs_getattr_xattr_fs(polaris_pvp_t)

polaris_tdlresolve_read(polaris_pvp_t)

corenet_tcp_connect_rsync_port(polaris_pvp_t)

#runs over /proc/<pid>/net/arp
kernel_read_network_state(polaris_pvp_t)

#runs over /proc/
kernel_read_network_state_symlinks(polaris_pvp_t)

# work with mounts
mount_domtrans(polaris_pvp_t)

```

```

optional_policy(`
# pvp.sh may mark or clear bits in /proc/exiting_bays
polaris_rw_exiting_bays(polaris_pvp_t)
`)

optional_policy(`
container_runtime_domtrans(polaris_pvp_t)
`)

# LOOK AT ME /usr/binos/conf/dockerd_env.sh not only sets environment
# it also does quite a bit of action in context of pvp when it got
# sourced before dockerd start
optional_policy(`
fs_getattr_all_fs(polaris_pvp_t)
files_getattr_all_dirs(polaris_pvp_t)
fs_read_nsfs_files(polaris_pvp_t)
container_manage_config_files(polaris_pvp_t)
polaris_caf_files_read(polaris_pvp_t)
# creates /var/log/docker/docker.log
logging_manage_generic_logs(polaris_pvp_t)
gen_require(`
    type var_log_t;
`)
allow polaris_pvp_t var_log_t:dir create;
`)

# support uswap feature.
# pvp script create and deletes
# the /bootflash.uswap/... folder.
type polaris_uswap_files_t;
files_type(polaris_uswap_files_t)
polaris_pfile_type(polaris_uswap_files_t)
filetrans_pattern(polaris_pvp_t, polaris_disk_bootflash_t, polaris_uswap_files_t, dir, ".USWAP")
manage_dirs_pattern(polaris_pvp_t, polaris_uswap_files_t, polaris_uswap_files_t)
manage_files_pattern(polaris_pvp_t, polaris_uswap_files_t, polaris_uswap_files_t)
manage_lnk_files_pattern(polaris_pvp_t, polaris_uswap_files_t, polaris_uswap_files_t)

# support for pvp to create /harddisk/.CRFT directory
filetrans_pattern(polaris_pvp_t, polaris_disk_bootflash_t, polaris_crft_data_t, dir, ".CRFT")

# Support SAI
type polaris_pvp_sai_t;
files_tmp_file(polaris_pvp_sai_t)
filetrans_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_pvp_sai_t, dir, "sai_process")
manage_dirs_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_pvp_sai_t)
manage_files_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_pvp_sai_t)
# all processes controlled by pchort require access to sai files
gen_require(`

```

```

    attribute polaris_domain;
)
polaris_pvp_read_sai_files(polaris_domain)

ifdef(`ngwc_family',`
# ngmod_vbd_handle_mount@.service started by pvp on macallan
systemd_config_generic_services(polaris_pvp_t)
)

type polaris_pvp_var_run_t;
files_pid_file(polaris_pvp_var_run_t)
gen_require(
    type var_run_t;
)
manage_files_pattern(polaris_pvp_t, var_run_t, polaris_pvp_var_run_t)
files_pid_filetrans(polaris_pvp_t, polaris_pvp_var_run_t, file, ".uswap_clr_rp")
files_pid_filetrans(polaris_pvp_t, polaris_pvp_var_run_t, file, ".uswap_clr_fp")
files_pid_filetrans(polaris_pvp_t, polaris_pvp_var_run_t, file, ".uswap_clr_cc")

# watch over /tmp/rp/pvp/control
allow polaris_pvp_t polaris_pvp_tmp_t:dir watch;

## permissions required during shutdown

# implode.sh 'systemctl reboot' uses dbus
dbus_system_bus_client(polaris_pvp_t)

# and checks reboot.target
systemd_status_power_services(polaris_pvp_t)

# writes sysctrl_i2c.lck file
gen_require(
    type polaris_cm_rp_tmp_t;
)
files_tmp_filetrans(polaris_pvp_t, polaris_cm_rp_tmp_t, file, "sysctrl_i2c.lck")
polaris_cm_rp_tmp_manage(polaris_pvp_t)

# journalctl and ifconfig are used when gathering logs during a punt-inject
# crash
journalctl_domtrans(polaris_pvp_t)
sysnet_domtrans_ifconfig(polaris_pvp_t)
# and allow it to write to our shutdownlog
gen_require(
    type ifconfig_t;
)
polaris_btrace_data_manage_all(ifconfig_t)

# implode.sh checks ip interfaces before ifconfig

```

```

polaris_socketat_nsfs_read(polaris_pvp_t)

# cedge uses logrotate
polaris_rpc_conf_d_ipc_connect(polaris_pvp_t)
# logrotate perms
polaris_conf_d_var_log_manage(polaris_pvp_t)
allow polaris_pvp_t self:capability { chown fowner };
# var_lib stuff
files_manage_urandom_seed(polaris_pvp_t)

# vconfd_script_admin_tech.sh is invoked by pvp.sh. This requires a domain
# transition from pvp to admin tech context.
polaris_admin_tech_domtrans(polaris_pvp_t)

## systemreport related permissions
# pd_info collection when triggering systemreport
# fdisk permissions
storage_raw_read_fixed_disk( polaris_pvp_t );
fstools_manage_entry_files( polaris_pvp_t);
fstools_exec( polaris_pvp_t );
polaris_rommon_device_read(polaris_pvp_t)
# dmesg writes to pd_info path
write_files_pattern(dmesg_t, polaris_disk_bootflash_t, polaris_disk_bootflash_t )
gen_require(
    type admin_home_t;
)
# top creates/writes dir /.config
allow polaris_pvp_t admin_home_t:dir { add_name create write };
# drop-caches
kernel_rw_vm_sysctls( polaris_pvp_t );

# systemreport collection reads all sorts of files
# but also deletes those files afterwards...
logging_manage_audit_log(polaris_pvp_t)

# report collects maroon data
polaris_maroon_data_manage_all(polaris_pvp_t);
polaris_tdlresolve_manage(polaris_pvp_t);

# collect udev log
polaris_udev_tmp_manage(polaris_pvp_t)

init_status(polaris_pvp_t);

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispvp.te

```

No license file was found, but licenses were detected in source scan.

```
dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
define(^ripc_stem', `translit(patsubst($1, ^-rip$, `), `-', `_)')
define(^rip_label', `format(^polaris_%s_rip_port_t', ripc_stem($1)))

dnl Ripc Type Map: track that type declations unique
define(^rip_type_map', `defn(format(^`rip_type_map[%s]', ` $1'))')
define(^rip_type_map_set', `define(format(^`rip_type_map[%s]', ` $1'), ` $2'))
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_rip.m4

No license file was found, but licenses were detected in source scan.

```
#
# July 2017, Victor Kamensky
#
# Copyright (c) 2017-2019 by Cisco Systems, Inc.
# All rights reserved
#
```

```
policy_module(polarisquack, 1.0);
```

```
#####
# Quack Driver policy
#####
```

```
type polaris_quack_device_t;
dev_node(polaris_quack_device_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisquack.te

No license file was found, but licenses were detected in source scan.

```
#
# March 2017, Victor Kamensky
#
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# All rights reserved
#
```

```
# Polaris lua files
/lu/(.*/)?(.*)\.lua -- gen_context(system_u:object_r:polaris_lua_file_t,s0)
```

```
/usr/binos/conf/(.*)?(.*)\.lua -- gen_context(system_u:object_r:polaris_lua_file_t,s0)
/luar/(.*)?(.*)\.so -- gen_context(system_u:object_r:lib_t,s0)
/luar/(.*)?(.*) -d gen_context(system_u:object_r:usr_t,s0)
/luar -d gen_context(system_u:object_r:usr_t,s0)
```

#Polaris nginx lua files

```
/var/scripts/luar/(.*)? -d gen_context(system_u:object_r:polaris_lua_file_t,s0)
/var/scripts/luar/(.*)? -- gen_context(system_u:object_r:polaris_lua_file_t,s0)
```

# why did we put .so libraries in /var directory?

```
/var/LibLua/LuaXML_lib\.so -- gen_context(system_u:object_r:lib_t,s0)
/var/LibLua/cjson\.so -- gen_context(system_u:object_r:lib_t,s0)
/var/LibLua/(.*)\.lua -- gen_context(system_u:object_r:polaris_lua_file_t,s0)
```

```
#/luar -- gen_context(system_u:object_r:polaris_lua_file_t,s0)
/luar/(.*)? -- gen_context(system_u:object_r:polaris_lua_file_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarislua.fc
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
# Copyright (c) 2016-2019 by Cisco Systems, Inc.
# All rights reserved
#
```

```
/tmp/sw/cfg/(.*)? gen_context(system_u:object_r:polaris_cfg_data_t,s0)
/usr/binos/conf/cfg_sync.sh -- gen_context(system_u:object_r:polaris_cfg_sync_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscfg.fc
No license file was found, but licenses were detected in source scan.
```

```
#
# April 2017, Victor Kamensky
#
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# All rights reserved
#
```

```
/var/log/dmi/(.*)? gen_context(system_u:object_r:polaris_dmi_var_log_t,s0)
/tmp/stream-parsers/(.*)? gen_context(system_u:object_r:polaris_dmi_parser_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmiopdatamgrd.fc
```

No license file was found, but licenses were detected in source scan.

```
#
# June 2017, Victor Kamensky
#
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#

## <summary>Polaris container Policy Rules.</summary>

#####
## <summary>
## Creates types and rules for a basic
## polaris container process domain.
## </summary>
## <param name="stem">
## <summary>
## Stem for the domain. Name is constructed as polaris_stem_container_t
## </summary>
## </param>
#
template(`polaris_container_domain_template`,`
gen_require(`
    type svirt_sandbox_file_t;
    type virt_lxc_var_run_t;
    attribute sandbox_net_domain;
    attribute svirt_sandbox_domain;
    bool virt_sandbox_use_sys_admin;
    bool virt_sandbox_use_mknod;
    bool virt_sandbox_use_all_caps;
    bool virt_sandbox_use_netlink;
`)

type polaris_$1_container_t, svirt_sandbox_domain;
domain_type(polaris_$1_container_t)
domain_user_exemption_target(polaris_$1_container_t)
mls_rangetrans_target(polaris_$1_container_t)
mcs_constrained(polaris_$1_container_t)
role system_r types polaris_$1_container_t;

logging_send_syslog_msg(polaris_$1_container_t)

kernel_read_system_state(polaris_$1_container_t)
kernel_read_all_proc(polaris_$1_container_t)

    virt_default_capabilities(polaris_$1_container_t)
    typeattribute polaris_$1_container_t sandbox_net_domain;
```

```

dontaudit polaris_${1}_container_t self:capability fsetid;
dontaudit polaris_${1}_container_t self:capability2 block_suspend ;
allow polaris_${1}_container_t self:process { execstack execmem };
manage_chr_files_pattern(polaris_${1}_container_t, svirt_sandbox_file_t, svirt_sandbox_file_t)
kernel_load_module(polaris_${1}_container_t)

tunable_policy(`virt_sandbox_use_sys_admin`,`
    allow polaris_${1}_container_t self:capability sys_admin;
`)

tunable_policy(`virt_sandbox_use_mknod`,`
    allow polaris_${1}_container_t self:capability mknod;
`)

tunable_policy(`virt_sandbox_use_all_caps`,`
    allow polaris_${1}_container_t self:capability all_capability_perms;
    allow polaris_${1}_container_t self:capability2 all_capability2_perms;
`)

tunable_policy(`virt_sandbox_use_netlink`,`
    allow polaris_${1}_container_t self:netlink_socket create_socket_perms;
    allow polaris_${1}_container_t self:netlink_tcpdiag_socket create_netlink_socket_perms;
    allow polaris_${1}_container_t self:netlink_kobject_uevent_socket create_socket_perms;
`,`
    logging_dontaudit_send_audit_msgs(polaris_${1}_container_t)
`)

allow polaris_${1}_container_t virt_lxc_var_run_t:dir list_dir_perms;
allow polaris_${1}_container_t virt_lxc_var_run_t:file read_file_perms;

kernel_read_irq_sysctls(polaris_${1}_container_t)
kernel_read_messages(polaris_${1}_container_t)

dev_read_sysfs(polaris_${1}_container_t)
dev_read_mtrr(polaris_${1}_container_t)
dev_read_rand(polaris_${1}_container_t)
dev_read_urand(polaris_${1}_container_t)

files_read_kernel_modules(polaris_${1}_container_t)

# Do we actually need these?
fs_mount_cgroup(polaris_${1}_container_t)
fs_manage_cgroup_dirs(polaris_${1}_container_t)
fs_manage_cgroup_files(polaris_${1}_container_t)
# Needed for docker
fs_unmount_xattr_fs(polaris_${1}_container_t)

auth_use_nsswitch(polaris_${1}_container_t)

```

```

optional_policy(
rpm_read_db(polaris_${1}_container_t)
)

logging_send_syslog_msg(polaris_${1}_container_t)

tunable_policy(`virt_sandbox_use_audit`,`
logging_send_audit_msgs(polaris_${1}_container_t)
`)

userdom_use_user_ptys(polaris_${1}_container_t)

optional_policy(
# allow vman to kill lxc container process
# on shutdown where vman destroys container-related
# stuff after a timeout period
polaris_vman_kill_process(polaris_${1}_container_t)
)

# copied from polariscommon.if. If the label is added in
# in permissive map, the below interface will make permissive
ifelse(permissive_domain(polaris_${1}_container_t), polaris_${1}_container_t,
`polaris_permissive_domain_setup(polaris_${1}_container_t)',
confined_domain(polaris_${1}_container_t), polaris_${1}_container_t, `',
`polaris_domain_maybe_unconfined(polaris_${1}_container_t)')

)

#####
## <summary>
## Creates types and rules for a basic
## polaris KVM container process domain.
## </summary>
## <param name="stem">
## <summary>
## Stem for the domain. Name is constructed as polaris_stem_container_t
## </summary>
## </param>
#
template(`polaris_kvm_domain_template`,`
gen_require(
attribute virt_domain;
type svirt_image_t;
)

# for now, things are same as polaris_container_domain_template
polaris_container_domain_template($1)

```

```

typeattribute polaris_$1_container_t virt_domain;
# allow {map} of svirt_image_t needed by VWAAS similar to svirt
allow polaris_$1_container_t svirt_image_t:{ file blk_file } map;
)
#####
## <summary>
##   Read Sandbox Files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_sandbox_file_read`,`
    gen_require(`
        type svirt_sandbox_file_t;
    `)
    read_files_pattern($1, svirt_sandbox_file_t, svirt_sandbox_file_t)
    read_lnk_files_pattern($1, svirt_sandbox_file_t, svirt_sandbox_file_t)
    list_dirs_pattern($1, svirt_sandbox_file_t, svirt_sandbox_file_t)
)

#####
## <summary>
##   Read Sandbox Files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_sandbox_file_dir_list`,`
    gen_require(`
        type polaris_disk_bootflash_t;
        type polaris_disk_harddisk_t;
        type svirt_sandbox_file_t;
    `)
    list_dirs_pattern($1, { svirt_sandbox_file_t polaris_disk_bootflash_t polaris_disk_harddisk_t },
svirt_sandbox_file_t)
    optional_policy(`
        gen_require(`
            type polaris_iox_alt_hdd_files_t;
        `)
        list_dirs_pattern($1, polaris_iox_alt_hdd_files_t , svirt_sandbox_file_t)
    `)
)

```

```

)

#####
## <summary>
##   Getattr of Sandbox Files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_sandbox_file_getattr`,`
    gen_require(`
        type polaris_disk_bootflash_t;
        type polaris_disk_harddisk_t;
        type svirt_sandbox_file_t;
    `)
    getattr_files_pattern($1, { svirt_sandbox_file_t polaris_disk_bootflash_t polaris_disk_harddisk_t },
svirt_sandbox_file_t)
    optional_policy(`
        gen_require(`
            type polaris_iox_alt_hdd_files_t;
        `)
        getattr_files_pattern($1, polaris_iox_alt_hdd_files_t, svirt_sandbox_file_t)
    `)
)
)

```

```

#####
## <summary>
##   Normal restricted permission to execute utd (snort) container
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_utd_container`,`
    allow $1 self:netlink_generic_socket client_stream_socket_perms;
)
)

```

```

#####
## <summary>
##   Allow domain transition

```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_iox_container_domtrans`,`
    gen_require(`
        type polaris_iox_container_t;
        type container_file_t;
    `)
    domain_transition_pattern($1, container_file_t, polaris_iox_container_t)
`)

```

#####

```

## <summary>
##   Allow watch on container files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_iox_container_watch`,`
    gen_require(`
        type tmpfs_t;
        type container_file_t;
    `)
    allow $1 container_file_t:{ dir file lnk_file} watch;
    allow $1 tmpfs_t:{ dir file lnk_file} watch;
`)

```

#####

```

## <summary>
##   Send messages to utdl container unix datagram sockets.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_utdl_container_dgram_send`,`
    gen_require(`
        type polaris_utdl_container_t;
    `)

```

```

    allow $1 polaris_utdl_container_t:unix_dgram_socket sendto;
)

#####
## <summary>
##   Allow unix stream socket connect
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_waas_stream_connect`,`
    gen_require(`
        type polaris_waas_container_t;
    `)
    allow $1 polaris_waas_container_t:unix_stream_socket connectto;
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscontainer.if

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```

#
# March 2017, Victor Kamensky
#
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#

```

```

/tmp/.flashlock      -- gen_context(system_u:object_r:polaris_flashlib_lock_t,s0)
/tmp/flashdev.log    -- gen_context(system_u:object_r:polaris_flashlib_log_t,s0)

```

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\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisflashlib.fc

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```

#
# Oct 2020, Xin Xiang
#
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#

```

```

# dma map devices
/dev/dmammmap -c gen_context(system_u:object_r:polaris_dmammmap_device_t,s0)

```

```

# /dev/dma_nw is introduced by Nightwatch switch module on ESG routing platform
/dev/dma_nw -c gen_context(system_u:object_r:polaris_dmammap_device_t,s0)

# dplr interrupt devices
/dev/dplr_intrpt -c gen_context(system_u:object_r:polaris_dplr_device_t,s0)

# /dev/dplr_nw is introduced by Nightwatch switch module on ESG routing platform
/dev/dplr_nw -c gen_context(system_u:object_r:polaris_dplr_device_t,s0)

# e.g., /dev/msi/Slot8/Doppler0/Group0
/dev/msi/Slot[0-9]*/Doppler[0-9]* -c gen_context(system_u:object_r:polaris_dplr_device_t,s0)
/dev/msi/Slot[0-9]*/Doppler[0-9]*(/*)? -c gen_context(system_u:object_r:polaris_dplr_device_t,s0)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdoppler.fc
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```

```

#
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#

## <summary>Polaris ncd Policy Rules.</summary>

#####

## <summary>
##   Make the specified domain able to manage tmp file created by
##   ncd.sh like /tmp/etc/ncd_work_dir
## </summary>
## <param name="type">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_ncd_tmp_manage',`
    gen_require(`
        type polaris_ncd_tmp_t;
    `)
    manage_dirs_pattern($1, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
    manage_files_pattern($1, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
    manage_lnk_files_pattern($1, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
`)

```

```

#####

```

```

## <summary>
##   Make the specified domain able to read tmp file created by
## ncd.sh like /tmp/ufs/crashinfo
## </summary>
## <param name="type">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_ncd_tmp_read`,`
    gen_require(`
        type polaris_ncd_tmp_t;
    `)
    list_dirs_pattern($1, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
    read_files_pattern($1, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
    read_lnk_files_pattern($1, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
`)

```

```
#####
```

```

## <summary>
##   Make the specified domain able to read etc file created by
## ncd.sh like /etc/conf/unifiedfs/mount_data
## </summary>
## <param name="type">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_ncd_etc_read`,`
    gen_require(`
        type polaris_ncd_etc_t;
    `)
    read_files_pattern($1, polaris_ncd_etc_t, polaris_ncd_etc_t)
`)

```

```
#####
```

```

## <summary>
##   Execute a domain transition to run ncd.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_ncd_domtrans`,`

```

```

gen_require(
    type polaris_ncd_t, polaris_ncd_exec_t;
)

domtrans_pattern($1, polaris_ncd_exec_t, polaris_ncd_t)
)

#####
## <summary>
##   Execute a domain transition to run unifiedfs_helper.sh.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_ufs_helper_domtrans',`
    gen_require(
        type polaris_ufs_helper_t, polaris_ufs_helper_exec_t;
    )

    domtrans_pattern($1, polaris_ufs_helper_exec_t, polaris_ufs_helper_t)
)

#####
## <summary>
##   Run rpcinfo in a domain, grant proper network permissions.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_ncd_rpcinfo_net',`
    corenet_tcp_bind_generic_node($1)
    corenet_tcp_bind_all_rpc_ports($1)
    corenet_tcp_connect_all_rpc_ports($1)
    corenet_tcp_connect_unreserved_ports($1)
    allow $1 self:tcp_socket { bind connect create getattr getopt setopt };

    corenet_udp_bind_generic_node($1)
    corenet_udp_bind_all_rpc_ports($1)
    allow $1 self:udp_socket { bind create getattr getopt setopt };

    corenet_tcp_connect_portmap_port($1)

```

```
ifdef(`passport_platform',`
    # invoked rpcinfo which connects to port 2049 (nfs server)
    # port is incorrectly labelled due to falling in range of TDL define
    # of IOSd gold rpc service
    polaris_ripc_iosd_gold_connect($1)
')
```

```
ifdef(`starfleet_platform',`
    # invoked rpcinfo which connects to port 2049 (nfs server)
    # port is incorrectly labelled due to falling in range of TDL define
    # of IOSd gold rpc service
    polaris_ripc_iosd_gold_connect($1)
')
```

```
ifdef(`bigbang_platform',`
    #nfs server port 2049 is labelled as rpc-emd_ui_port_t based on TDL define
    polaris_ripc_emd_ui_connect($1)
')
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisncd.if

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```
#
# July 2017, Victor Kamensky
#
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#
```

```
policy_module(polariscppcdm, 1.0);
```

```
gen_require(`
    type polaris_cpp_cdm_t;
')
```

```
polaris_btrace_data_manage(polaris_cpp_cdm_t)
polaris_crft_data_manage(polaris_cpp_cdm_t)
polaris_chasfs_manage(polaris_cpp_cdm_t)
polaris_tdlresolve_read(polaris_cpp_cdm_t)
polaris_tdlldb_list_dirs(polaris_cpp_cdm_t)
polaris_cpld_read(polaris_cpp_cdm_t)
polaris_flashlib_read(polaris_cpp_cdm_t)
```

```
polaris_cpp_tmp_files_use(polaris_cpp_cdm_t)
```

```

# works with /dev/cpp_dev_info and /dev/cpp_kipc
polaris_cpp_dev_use(polaris_cpp_cdm_t)
polaris_cpp_tmpfs_ifdev_rw(polaris_cpp_cdm_t)

polaris_icc_broken_relocations(polaris_cpp_cdm_t)

allow polaris_cpp_cdm_t self:capability net_admin;

# get attributes of /dev/shm from glibc where_is_shmfs function
fs_getattr_tmpfs(polaris_cpp_cdm_t)

polaris_cpp_cavium_sdk_ipc_use(polaris_cpp_cdm_t)

# LOOK AT ME: raw memory access in cavium vendor SDK
# related to octeon driver (BUG CSCvh58515)
ifdef(`crankshaft_family',`
polaris_dev_mem_use(polaris_cpp_cdm_t)
')

# overlord/neptune access /sys/bus/pci/devices/0000:01:00.0/resource0
# when initializing the CPP DMAP library.
optional_policy(`
polaris_cpp_cavium_dma_map(polaris_cpp_cdm_t)
')

optional_policy(`
polaris_cbdma_dev_use(polaris_cpp_cdm_t)
')
polaris_cpld_dev_use(polaris_cpp_cdm_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscppcdm.te
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#
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#
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#

## <summary>Polaris bsm Policy Rules.</summary>

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbsm.if
No license file was found, but licenses were detected in source scan.

#

```

# March 2017, Victor Kamensky

#

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#

/obfl -l gen\_context(system\_u:object\_r:polaris\_obfl\_data\_t,s0)

/obfl0 -l gen\_context(system\_u:object\_r:polaris\_obfl\_data\_t,s0)

/tmp/obfl(/.\*)? gen\_context(system\_u:object\_r:polaris\_obfl\_data\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisobfl.fc

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#

# March 2017, Victor Kamensky

#

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#

/dev/cpld -c gen\_context(system\_u:object\_r:polaris\_cpld\_device\_t,s0)

/dev/cpld-ha -c gen\_context(system\_u:object\_r:polaris\_cpld\_device\_t,s0)

/dev/cpld-misc-int -c gen\_context(system\_u:object\_r:polaris\_cpld\_device\_t,s0)

/dev/cpld-virtual-fp -c gen\_context(system\_u:object\_r:polaris\_cpld\_device\_t,s0)

/dev/cpld-virtual-cc -c gen\_context(system\_u:object\_r:polaris\_cpld\_device\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscpld.fc

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dnl

dnl January 2021, Vaibhav Lade

dnl

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dnl

dnl VPCGW Platform Max Bay Limits

max\_bay\_map\_set(rp, `per\_bay', 0)

max\_bay\_map\_set(cc, `per\_bay', 0)

max\_bay\_map\_set(fp, `per\_bay', 0)

dnl in elastic scope each process has its own value

max\_elastic\_map\_set(rp, `elastic', BPROC\_UEMGR, 7)

max\_elastic\_map\_set(cc, `elastic', BPROC\_UEMGR, 7)

max\_elastic\_map\_set(fp, `elastic', BPROC\_UEMGR, 7)

```
max_elastic_ripc_map_set(`rp', `elastic', BPROC_UEMGR, 7)
max_elastic_ripc_map_set(`cc', `elastic', BPROC_UEMGR, 7)
max_elastic_ripc_map_set(`fp', `elastic', BPROC_UEMGR, 7)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/vpcgwmaps.m4
```

No license file was found, but licenses were detected in source scan.

```
#
# July 2017, Victor Kamensky
#
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#
## <summary>Polaris gsd_rp Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisgsdrp.if
```

No license file was found, but licenses were detected in source scan.

```
#
# January 2018, Manohar Hungund
#
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#
```

```
policy_module(polarisoctdplogrp, 1.0);
```

```
gen_require(
    type polaris_oct_dp_log_rp_t;
)
```

```
polaris_btrace_data_manage(polaris_oct_dp_log_rp_t)
polaris_chasfs_manage(polaris_oct_dp_log_rp_t)
polaris_tdlresolve_read(polaris_oct_dp_log_rp_t)
polaris_tdlldb_list_dirs(polaris_oct_dp_log_rp_t)
polaris_cpld_read(polaris_oct_dp_log_rp_t)
polaris_flashlib_read(polaris_oct_dp_log_rp_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_oct_dp_log_rp_t)
```

```
# direct access to serial TTY devices
# (octeon_dp_logger needs to acces /dev/ttyDASH7)
term_open_unallocated_ttys(polaris_oct_dp_log_rp_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisocdplogrp.te

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#

# June 2020, Manu Roy

#

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#

## <summary>Polaris iotswitch Policy Rules.</summary>

#

#

#####

## <summary>

## Work (read, write, ioctl) with /dev/petra-fpga device

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_iots\_fpga\_dev\_use`,`

gen\_require(`

type device\_t;

type polaris\_iots\_fpga\_device\_t;

`)

write\_chr\_files\_pattern(\$1, device\_t, polaris\_iots\_fpga\_device\_t)

read\_chr\_files\_pattern(\$1, device\_t, polaris\_iots\_fpga\_device\_t)

allow \$1 polaris\_iots\_fpga\_device\_t:chr\_file map;

`)

#####

## <summary>

## Work (read, write, ioctl) with /dev/tm

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_iots\_tm\_dev\_use`,`

gen\_require(`

type device\_t;

type polaris\_iots\_tm\_device\_t;

`)

```
write_chr_files_pattern($1, device_t, polaris_iots_tm_device_t)
read_chr_files_pattern($1, device_t, polaris_iots_tm_device_t)
allow $1 polaris_iots_tm_device_t:chr_file map;
')
```

```
#####
```

```
## <summary>
## Allow access to semaphore with type polaris_cm_rp_t
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_cm_rp_sem_use',`
    gen_require(`
        type polaris_cm_rp_t;
    `)
    allow $1 polaris_cm_rp_t:sem rw_sem_perms;
')
```

```
#####
```

```
## <summary>
## Allow access to semaphore with type polaris_iots_mvDmaDrv_device_t
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_mvDmaDrv_dev_use',`
    gen_require(`
        type device_t;
        type polaris_iots_mvDmaDrv_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_iots_mvDmaDrv_device_t)
    read_chr_files_pattern($1, device_t, polaris_iots_mvDmaDrv_device_t)
    allow $1 polaris_iots_mvDmaDrv_device_t:chr_file map;
')
```

```
#####
```

```
## <summary>
## Allow access to semaphore with type polaris_iots_mvIntDrv_device_t
## </summary>
## <param name="domain">
## <summary>
```

```

## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_mvIntDrv_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_iots_mvIntDrv_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_iots_mvIntDrv_device_t)
    read_chr_files_pattern($1, device_t, polaris_iots_mvIntDrv_device_t)
`)

#####
## <summary>
## Manage iots swipedrive files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_swipedrive_file_manage`,`
    gen_require(`
        type polaris_iots_swipedrive_file_t;
    `)
    manage_files_pattern($1, polaris_iots_swipedrive_file_t, polaris_iots_swipedrive_file_t)
    manage_lnk_files_pattern($1, polaris_iots_swipedrive_file_t, polaris_iots_swipedrive_file_t)
    manage_dirs_pattern($1, polaris_iots_swipedrive_file_t, polaris_iots_swipedrive_file_t)
`)

#####
## <summary>
## Get the attributes of an swipe drive
## filesystem.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_getattr_swipedrive`,`
    gen_require(`
        type polaris_iots_swipedrive_file_t;
    `)

```

```

allow $1 polaris_iots_swipedrive_file_t:filesystem getattr;
)

#####
## <summary>
##   Allow access to semaphore with type polaris_iots_led_device_t
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_led_dev_use',`
    gen_require(`
        type device_t;
        type polaris_iots_led_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_iots_led_device_t)
    read_chr_files_pattern($1, device_t, polaris_iots_led_device_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisiotswitch.if

No license file was found, but licenses were detected in source scan.

```

#
# December 2019, Victor Kamensky
#
# Copyright (c) 2019 by Cisco Systems, Inc.
# All rights reserved
#

```

## <summary>Polaris fnf\_agg Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfnfagg.if

No license file was found, but licenses were detected in source scan.

```

#
# March 2017, Victor Kamensky
#
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# All rights reserved
#

```

## <summary>Polaris TDLResolve Policy Rules.</summary>

```
#####
# TDLresolve policy
#####

#####
## <summary>
##   Open tdlresolve files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_tdlresolve_read`,`
gen_require(`
type polaris_tdlresolve_t;
`)
    read_files_pattern($1, polaris_tdlresolve_t, polaris_tdlresolve_t)
    read_lnk_files_pattern($1, polaris_tdlresolve_t, polaris_tdlresolve_t)
    list_dirs_pattern($1, polaris_tdlresolve_t, polaris_tdlresolve_t)
    allow $1 polaris_tdlresolve_t:file map;
gen_require(`
type polaris_global_service_t;
`)
    read_files_pattern($1, polaris_global_service_t, polaris_global_service_t)
    allow $1 polaris_global_service_t:file map;
`)

#####
## <summary>
##   Manage tdlresolve files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_tdlresolve_manage`,`
gen_require(`
type polaris_tdlresolve_t;
`)
    manage_files_pattern($1, polaris_tdlresolve_t, polaris_tdlresolve_t)
    manage_lnk_files_pattern($1, polaris_tdlresolve_t, polaris_tdlresolve_t)
    manage_dirs_pattern($1, polaris_tdlresolve_t, polaris_tdlresolve_t)

```

```

    allow $1 polaris_tdlresolve_t:file map;
gen_require(`
type polaris_global_service_t;
`)
    manage_files_pattern($1, polaris_global_service_t, polaris_global_service_t)
    allow $1 polaris_global_service_t:file map;
`)

```

```
#####
```

```

## <summary>
##   Watch tdlresolve directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#

```

```

interface(`polaris_tdlresolve_watch`,`
    gen_require(`
        type polaris_tdlresolve_t;
    `)
    allow $1 polaris_tdlresolve_t:dir watch;
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristdlresolve.if

No license file was found, but licenses were detected in source scan.

```

#
# September 2018, Anubha Balani
#
# Copyright (c) 2018-2019 by Cisco Systems, Inc.
# All rights reserved
#

```

```

/tmp/maroon_stats -d gen_context(system_u:object_r:polaris_maroon_base_t,s0)
# zram devices
/dev/zram[0-9]*          -b gen_context(system_u:object_r:polaris_zram_device_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismemory.fc

No license file was found, but licenses were detected in source scan.

```

#
# July 2020, Victor Kamensky
#

```

```

# Copyright (c) 2020 by Cisco Systems, Inc.
# All rights reserved
#

policy_module(polarishtx, 1.0);

gen_require(
    type polaris_htx_t;
)
polaris_chasfs_read(polaris_htx_t)
polaris_cpld_read(polaris_htx_t)
polaris_tdlresolve_read(polaris_htx_t)

polaris_ripc_sman_ui_serv_connect(polaris_htx_t)

logging_send_syslog_msg(polaris_htx_t)

# LOOK AT ME uses shell and mkdir just to create /tmp/HTX-IOX directory
# should be single mkdir system call, in fact even this may not
# be needed since it is created by system-tempfiles
corecmd_exec_shell(polaris_htx_t)
corecmd_exec_bin(polaris_htx_t)
auth_use_nsswitch(polaris_htx_t)

# call posix_sysconf that opens /sys/devices/system/cpu/online
dev_read_sysfs(polaris_htx_t)

# create threads
allow polaris_htx_t self:process setsched;
allow polaris_htx_t self:capability sys_nice;

optional_policy(
    polaris_qfp_dgram_send(polaris_htx_t)
)

# vconfd_load_shared_schemas
polaris_confd_shared_schema_read(polaris_htx_t)

type polaris_htx_iox_tmp_t;
files_tmp_file(polaris_htx_iox_tmp_t)
polaris_htx_iox_tmp_manage(polaris_htx_t)

# htx logs files like /tmp/nwaas_log_sslproxy.log
type polaris_htx_tmp_t;
files_tmp_file(polaris_htx_tmp_t)
files_tmp_filetrans(polaris_htx_t, polaris_htx_tmp_t, file)
manage_files_pattern(polaris_htx_t, polaris_htx_tmp_t, polaris_htx_tmp_t)

```

```

# handle /dev/shm/tcpproxy_debug_shm
type polaris_htx_tmpfs_t;
files_tmpfs_file(polaris_htx_tmpfs_t)
fs_tmpfs_filetrans(polaris_htx_t, polaris_htx_tmpfs_t, file)
fs_getattr_tmpfs(polaris_htx_t)
gen_require(
    type tmpfs_t;
)
manage_files_pattern(polaris_htx_t, tmpfs_t, polaris_htx_tmpfs_t)
allow polaris_htx_t polaris_htx_tmpfs_t:file map;

# work with /tmp/memif
optional_policy(
    polaris_qfp_memif_manage(polaris_htx_t)
)

# sppi_memif
type polaris_sppi_memif_device_t;
dev_node(polaris_sppi_memif_device_t)
polaris_sppi_memif_dev_use(polaris_htx_t)

# packet_socket uinet_if_sppi_channel_init
allow polaris_htx_t self:packet_socket { create_socket_perms recv_msg send_msg };
allow polaris_htx_t self:capability net_raw;

# read and write /bootflash/cacert-ssl.pem
polaris_bootflash_manage(polaris_htx_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarishtx.te

No license file was found, but licenses were detected in source scan.

```

#
# March 2017, Victor Kamensky
#
# Copyright (c) 2017-2021 by Cisco Systems, Inc.
# All rights reserved
#
## <summary>Polaris nginx Policy Rules.</summary>

```

```
#####
```

```

## <summary>
##   Allow domain to be started by nginx with
##   transition into specific service domain.
## </summary>
## <param name="domain">

```

```

## <summary>
##   Type to be used to run utility.
## </summary>
## </param>
## <param name="entry_point">
##   <summary>
##     Type of the program to be used as an entry point to this domain.
##   </summary>
## </param>
interface(`polaris_nginx_exec_domain`,`
  gen_require(`
    type polaris_nginx_t;
  `)

  domtrans_pattern(polaris_nginx_t, $2, $1)
`)

#####
## <summary>
##   Execute mcp_trace_filter script in its own domain.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_trace_filter_domtrans`,`
  gen_require(`
    type polaris_trace_filter_t, polaris_trace_filter_exec_t;
  `)

  domtrans_pattern($1, polaris_trace_filter_exec_t, polaris_trace_filter_t)
`)

#####
## <summary>
##   Execute file transfer client in its own domain.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_file_transfer_client_domtrans`,`
  gen_require(`
    type polaris_file_transfer_client_t, polaris_file_transfer_client_exec_t;
  `)

```

```
)

domtrans_pattern($1, polaris_file_transfer_client_exec_t, polaris_file_transfer_client_t)
)
```

```
#####
```

```
## <summary>
## Allow others to perform pipe operations on nginx files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to perform the operation
## </summary>
## </param>
#
```

```
interface(`polaris_nginx_manage_fifo_files`,`
```

```
gen_require(`
    type polaris_nginx_t;
    type $1;
`)
```

```
manage_fifo_files_pattern($1, polaris_nginx_t, polaris_nginx_t)
```

```
)
```

```
#####
```

```
## <summary>
## Allow the specified domain to manage polaris_nginx_tmp_t files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
```

```
interface(`polaris_nginx_tmp_manage`,`
```

```
gen_require(`
    type polaris_nginx_tmp_t;
`)
```

```
manage_files_pattern($1, polaris_nginx_tmp_t, polaris_nginx_tmp_t)
```

```
files_tmp_filetrans($1, polaris_nginx_tmp_t, file, "ca.cert")
```

```
)
```

```
#####
```

```
## <summary>
## Manage polaris_fts_client_tmp_t in /tmp/fts_client.
## </summary>
## <param name="domain">
```

```

## <summary>
## Domain allowed access.
## </summary>
## </param>
interface(`polaris_fts_client_tmp_manage`,`
    gen_require(`
        type polaris_fts_client_tmp_t;

    `)
    manage_files_pattern($1, polaris_fts_client_tmp_t, polaris_fts_client_tmp_t)
    manage_dirs_pattern($1, polaris_fts_client_tmp_t, polaris_fts_client_tmp_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisnginx.if

No license file was found, but licenses were detected in source scan.

```

#
# February 2020, Victor Kamensky
#
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#

## <summary>Polaris cedgetanman Policy Rules.</summary>

```

```
#####
```

```

## <summary>
## Read cedge tanman files and fifo_file. I.e
## /tmp/tan/tan_evt_fifo
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_cedge_tanman_tmp_manage`,`
    gen_require(`
        type polaris_cedge_tanman_tmp_t;

    `)
    read_files_pattern($1, polaris_cedge_tanman_tmp_t, polaris_cedge_tanman_tmp_t)
    read_fifo_files_pattern($1, polaris_cedge_tanman_tmp_t, polaris_cedge_tanman_tmp_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscedgetanman.if

No license file was found, but licenses were detected in source scan.

```
#
# November 2017, Victor Kamensky
#
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#

# polarisgnmib file contexts place holder
/flash1/gNOI_iosxe_.* gen_context(system_u:object_r:polaris_gnmib_gnoi_images_t,s0)
/bootflash/gNOI_iosxe_.* gen_context(system_u:object_r:polaris_gnmib_gnoi_images_t,s0)
/mnt/sd3/user/gNOI_iosxe_.* gen_context(system_u:object_r:polaris_gnmib_gnoi_images_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisgnmib.fc
```

No license file was found, but licenses were detected in source scan.

```
#
# November 2020, Christine Hwang
#
# Copyright (c) 2017-2019, 2021 by Cisco Systems, Inc.
# All rights reserved
#
```

```
## <summary>Polaris bbu Policy Rules.</summary>
```

```
#####
```

```
## <summary>
```

```
## Work (read, write, ioctl) with /dev/ttyS2
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_bbu_dev_use',`
    gen_require(`
        type device_t;
        type polaris_bbu_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_bbu_device_t)
    read_chr_files_pattern($1, device_t, polaris_bbu_device_t)
    allow $1 polaris_bbu_device_t:chr_file map;
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbbu.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

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#

## <summary>Polaris polarisrollbacktimer Policy Rules.</summary>

#####

## <summary>

## Manage rbtimer file on bootflash (i.e /bootflash/.rollback\_timer)

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_rbtimer\_bootflash\_manage`,`

gen\_require(`

type polaris\_disk\_bootflash\_t;

type polaris\_rbtimer\_bootflash\_t;

`)

manage\_dirs\_pattern(\$1, polaris\_disk\_bootflash\_t, polaris\_rbtimer\_bootflash\_t)

manage\_files\_pattern(\$1, polaris\_rbtimer\_bootflash\_t, polaris\_rbtimer\_bootflash\_t)

filetrans\_pattern(\$1, polaris\_disk\_bootflash\_t, polaris\_rbtimer\_bootflash\_t, dir, ".rollback\_timer")

`)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrollbacktimer.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

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#

## <summary>Polaris keyman Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariskeyman.if

No license file was found, but licenses were detected in source scan.

```
#  
# March 2017, Victor Kamensky  
#  
# Copyright (c) 2016-2019 by Cisco Systems, Inc.  
# All rights reserved  
#  
  
## <summary>Polaris polarisoom Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisoom.if
```

No license file was found, but licenses were detected in source scan.

```
#  
# July 2017, Victor Kamensky  
#  
# Copyright (c) 2017-2021 by Cisco Systems, Inc.  
# All rights reserved  
#
```

```
/usr/binos/conf/install_engine.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)  
/usr/binos/conf/install_assist.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)  
/usr/binos/conf/install_helper.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)  
/usr/binos/conf/sw_pload_svc.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)  
/usr/binos/conf/provision.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)  
/usr/binos/conf/issu_helper.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)  
/issu/issu_check.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)  
/usr/binos/conf/packtool.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)  
/usr/binos/conf/install_boottime.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)  
  
/usr/bin/vconfd_script_upgrade\sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)  
  
/usr/binos/conf/issu_client_comp.py -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)  
  
/usr/binos/conf/install_selinux.sh -- gen_context(system_u:object_r:polaris_install_selinux_exec_t,s0)  
  
/usr/binos/conf/install_show.sh -- gen_context(system_u:object_r:polaris_install_show_exec_t,s0)  
/usr/binos/conf/install_issu_show.py -- gen_context(system_u:object_r:polaris_install_show_exec_t,s0)  
/usr/bin/vconfd_script_show_installerfs.sh -- gen_context(system_u:object_r:polaris_install_show_exec_t,s0)  
  
/usr/binos/conf/calcscha.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)  
  
/usr/binos/conf/C9800-Wireless_startup_script.sh --  
gen_context(system_u:object_r:polaris_install_wireless_exec_t,s0)  
/usr/binos/conf/C9800-Wireless_stop_script.sh --  
gen_context(system_u:object_r:polaris_install_wireless_exec_t,s0)
```

```

/bootflash/.issu_loc_lock      gen_context(system_u:object_r:polaris_issu_files_t,s0)
/tmp/issu(/.*)?                gen_context(system_u:object_r:polaris_issu_tmp_files_t,s0)

/bootflash/.installer(/.*)?   gen_context(system_u:object_r:polaris_disk_install_t,s0)
/bootflash/.images(/.*)?     gen_context(system_u:object_r:polaris_install_images_t,s0)
/tmp/installer_tmplog(/.*)?   gen_context(system_u:object_r:polaris_install_tmp_log_t,s0)
/tmp/installer(/.*)?         gen_context(system_u:object_r:polaris_install_tmp_t,s0)
/bootflash/.sdwaninstaller(/.*)? gen_context(system_u:object_r:polaris_disk_install_t,s0)
/flash1/.sdwaninstaller(/.*)? gen_context(system_u:object_r:polaris_disk_install_t,s0)

/tmp/install_all_trans_log     gen_context(system_u:object_r:polaris_install_tmp_t,s0)
/tmp/show_install_output.txt   gen_context(system_u:object_r:polaris_install_show_tmp_t,s0)

/tmp/sw/rp(/.*)?              gen_context(system_u:object_r:polaris_sw_data_t,s0)
/tmp/sw/fp(/.*)?              gen_context(system_u:object_r:polaris_sw_data_t,s0)
/tmp/sw/cc(/.*)?              gen_context(system_u:object_r:polaris_sw_data_t,s0)
/tmp/sw/mount(/.*)?           gen_context(system_u:object_r:polaris_sw_data_t,s0)

/tmp/patch                     gen_context(system_u:object_r:polaris_patch_data_t,s0)
/tmp/patch/rp(/.*)?            gen_context(system_u:object_r:polaris_patch_data_t,s0)
/tmp/patch/fp(/.*)?            gen_context(system_u:object_r:polaris_patch_data_t,s0)
/tmp/patch/cc(/.*)?            gen_context(system_u:object_r:polaris_patch_data_t,s0)
/tmp/patch/smus(/.*)?         gen_context(system_u:object_r:polaris_patch_data_t,s0)

# The following labels are specific to hot patch a SMUs shared objects
# using .so files). For cold patch files, the patch is subset of a package
# (it has the same structure) and therefore regular labeling rules will
# be in effect.
#
# The SMU hot patch directory hierarchy should look as follows:
#
# /RP.<ARCH>/<process>/patch(s)
# /FP.<ARCH>/<process>/patch(s)
# /CC.<ARCH>/<process>/patch(s)
#
/RP\[^\]*\[^\]*(/.*)?        gen_context(system_u:object_r:lib_t,s0)
/FP\[^\]*\[^\]*(/.*)?        gen_context(system_u:object_r:lib_t,s0)
/CP\[^\]*\[^\]*(/.*)?        gen_context(system_u:object_r:lib_t,s0)

# bundlee image/subpkg labeling
/packages.conf                -- gen_context(system_u:object_r:polaris_packages_conf_t,s0)
\,pkginfo                     -- gen_context(system_u:object_r:polaris_sw_data_t,s0)
/(.*)\.pkg                    -- gen_context(system_u:object_r:polaris_sw_data_t,s0)

/tmp/pkg_cs_debug(/.*)?      gen_context(system_u:object_r:polaris_pkg_cs_debug_t,s0)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisinstall.fc
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2017-2020 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
policy_module(polarisepcwsliaison, 1.0);
```

```
gen_require(`
```

```
    type polaris_epc_ws_liaison_t;
```

```
`)
```

```
polaris_btrace_data_manage(polaris_epc_ws_liaison_t)
```

```
polaris_crft_data_manage(polaris_epc_ws_liaison_t)
```

```
polaris_chasfs_manage(polaris_epc_ws_liaison_t)
```

```
polaris_tdlresolve_read(polaris_epc_ws_liaison_t)
```

```
polaris_tdlldb_list_dirs(polaris_epc_ws_liaison_t)
```

```
polaris_cpld_read(polaris_epc_ws_liaison_t)
```

```
polaris_flashlib_read(polaris_epc_ws_liaison_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_epc_ws_liaison_t)
```

```
allow polaris_epc_ws_liaison_t self:capability { dac_override };
```

```
# tshark invoked by epc_ws_liaison needs to map /etc/passwd file.
```

```
auth_map_passwd(polaris_epc_ws_liaison_t)
```

```
# access to execute /sbin/tshark
```

```
corecmd_exec_bin(polaris_epc_ws_liaison_t)
```

```
# dumpcap needs access to net dir in sysfs
```

```
dev_read_sysfs(polaris_epc_ws_liaison_t)
```

```
# comm="dumpcap" kmod="net-pf-16-proto-12"
```

```
kernel_dontaudit_request_load_module(polaris_epc_ws_liaison_t)
```

```
# write pcap files to /bootflash
```

```
polaris_bootflash_manage(polaris_epc_ws_liaison_t)
```

```
# epc_ws_liaison and ngwc-fed pipe interaction
```

```
polaris_fed_shm_file_read(polaris_epc_ws_liaison_t)
```

```
# for pluggable FS, allow epc liaison to access files on them.
```

```
polaris_removable_manage(polaris_epc_ws_liaison_t)
```

```

# tshark and dumpcap runtime requirements
allow polaris_epc_ws_liaison_t self:capability { net_raw setgid setuid };
allow polaris_epc_ws_liaison_t self:netlink_netfilter_socket create;
allow polaris_epc_ws_liaison_t self:netlink_route_socket { bind create getattr nlmsg_read };
allow polaris_epc_ws_liaison_t self:packet_socket { bind create getopt ioctl map setopt };
allow polaris_epc_ws_liaison_t self:process setcap;
allow polaris_epc_ws_liaison_t self:unix_dgram_socket { create ioctl };
allow polaris_epc_ws_liaison_t self:udp_socket { create ioctl };

# /tmp/lstn.log and /tmp/epc_ws (WS_TMP_FOLDER)
type polaris_epc_ws_liaison_tmp_t;
files_tmp_file(polaris_epc_ws_liaison_tmp_t)
files_tmp_filetrans(polaris_epc_ws_liaison_t, polaris_epc_ws_liaison_tmp_t, { file dir })
manage_dirs_pattern(polaris_epc_ws_liaison_t, polaris_epc_ws_liaison_tmp_t, polaris_epc_ws_liaison_tmp_t)
manage_files_pattern(polaris_epc_ws_liaison_t, polaris_epc_ws_liaison_tmp_t, polaris_epc_ws_liaison_tmp_t)
manage_fifo_files_pattern(polaris_epc_ws_liaison_t, polaris_epc_ws_liaison_tmp_t,
polaris_epc_ws_liaison_tmp_t)

#####
# CLI: show platform software wireshark show
#####
polaris_utility_domain_template(wireshark_show)
polaris_bexecute_domain(polaris_wireshark_show_t, polaris_wireshark_show_exec_t)

polaris_chasfs_manage(polaris_wireshark_show_t)
corecmd_exec_bin(polaris_wireshark_show_t)

# map /etc/passwd
auth_map_passwd(polaris_wireshark_show_t)

# open, read, getattr pcap files
polaris_bootflash_read(polaris_wireshark_show_t)

# write into pipe that smand created for us with popen
polaris_smand_use_fifo(polaris_wireshark_show_t)

corecmd_exec_shell(polaris_wireshark_show_t)

# sys file /sys/devices/system/cpu/online
dev_read_sysfs(polaris_wireshark_show_t)

# tshark and dumpcap runtime requirements
allow polaris_wireshark_show_t self:capability { setgid setuid net_admin };
allow polaris_wireshark_show_t self:netlink_netfilter_socket create;
allow polaris_wireshark_show_t self:netlink_route_socket { bind create getattr nlmsg_read };
allow polaris_wireshark_show_t self:process setcap;
allow polaris_wireshark_show_t self:udp_socket { create ioctl };

```

```
allow polaris_wireshark_show_t self:unix_dgram_socket { create ioctl };
```

```
#dumpcap needs access "/tmp/epc_ws/wif_to_ts_pipe" fifo file  
polaris_epc_ws_liaison_fifo_read(polaris_wireshark_show_t)
```

```
# comm="dumpcap" kmod="net-pf-16-proto-12"  
kernel_request_load_module(polaris_wireshark_show_t)
```

```
# /tmp/*.pcapng  
type polaris_wireshark_show_tmp_t;  
files_tmp_file(polaris_wireshark_show_tmp_t)  
files_tmp_filetrans(polaris_wireshark_show_t, polaris_wireshark_show_tmp_t, file)  
polaris_wireshark_show_tmp_manage(polaris_wireshark_show_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisepcwsliaison.te  
No license file was found, but licenses were detected in source scan.
```

```
#  
# June 2020 , Manu Roy  
#  
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# All rights reserved  
#
```

```
policy_module(polarisiotsswitch, 1.0);
```

```
# petra fpga device (/dev/petra-fpga)  
type polaris_iots_fpga_device_t;  
dev_node(polaris_iots_fpga_device_t)
```

```
# petra DMA ASIC driver (/dev/mvDmaDrv)  
type polaris_iots_mvDmaDrv_device_t;  
dev_node(polaris_iots_mvDmaDrv_device_t)
```

```
# petra Interrupt Asic driver (/dev/mvIntDrv)  
type polaris_iots_mvIntDrv_device_t;  
dev_node(polaris_iots_mvIntDrv_device_t)
```

```
# petra tm device (/dev/tm)  
type polaris_iots_tm_device_t;  
dev_node(polaris_iots_tm_device_t)
```

```
# petra tm device (/dev/mmcbk1p1)  
type polaris_iots_swipedrive_device_t;  
dev_node(polaris_iots_swipedrive_device_t)
```

```
type polaris_iots_swipedrive_file_t;
files_type(polaris_iots_swipedrive_file_t)
dev_associate(polaris_iots_swipedrive_file_t)
```

```
# LED device (/dev//dev/spidev0.0)
type polaris_iots_led_device_t;
dev_node(polaris_iots_led_device_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisiotsswitch.te

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```
#
# March 2017, Victor Kamensky
#
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#
```

```
## <summary>Polaris psd Policy Rules.</summary>
```

```
#####
```

```
## <summary>
```

```
## Read polaris_restconf_t files, effectively files
## under /tmp/restconf
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_restconf_read`,`
```

```
gen_require(`
```

```
type polaris_restconf_t;
```

```
`)
```

```
read_files_pattern($1, polaris_restconf_t, polaris_restconf_t)
```

```
read_lnk_files_pattern($1, polaris_restconf_t, polaris_restconf_t)
```

```
list_dirs_pattern($1, polaris_restconf_t, polaris_restconf_t)
```

```
`)
```

```
#####
```

```
## <summary>
```

```
## Manage polaris_restconf_t files, effectively files
## under /tmp/restconf
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```

## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_restconf_manage',`
    gen_require(`
        type polaris_restconf_t;
    `)
    manage_files_pattern($1, polaris_restconf_t, polaris_restconf_t)
    manage_lnk_files_pattern($1, polaris_restconf_t, polaris_restconf_t)
    manage_dirs_pattern($1, polaris_restconf_t, polaris_restconf_t)
`)

#####
## <summary>
## Manage polaris_ncsshd_keys_t files, effectively files
## under /tmp/.ncsshd_authorized_keys
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_ncsshd_keys_manage',`
    gen_require(`
        type polaris_ncsshd_keys_t;
    `)
    manage_files_pattern($1, polaris_ncsshd_keys_t, polaris_ncsshd_keys_t)
    manage_lnk_files_pattern($1, polaris_ncsshd_keys_t, polaris_ncsshd_keys_t)
    manage_dirs_pattern($1, polaris_ncsshd_keys_t, polaris_ncsshd_keys_t)
`)

#####
## <summary>
## Read polaris_psd_tmp_t files, effectively access
## /tmp/dmi.ds_config created by psd and read by confd startup
## script
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_psd_tmp_read',`
    gen_require(`
        type polaris_psd_tmp_t;

```

```
)  
read_files_pattern($1, polaris_psd_tmp_t, polaris_psd_tmp_t)  
)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispsd.if
```

No license file was found, but licenses were detected in source scan.

```
#  
# March 2017, Victor Kamensky  
#  
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#
```

```
## <summary>Polaris smd Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissmd.if
```

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```
dnl  
dnl April 2018, Victor Kamensky  
dnl  
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.  
dnl All rights reserved  
dnl  
define(^ polaris_process_aux_full,``  
polaris_process_domain_template($1)  
")
```

```
define(^ polaris_process_aux,`  
ifelse(process_type_map($1), `', `polaris_process_aux_full($1)')  
process_type_map_set($1, 1)  
)
```

```
define(^ polaris_process,`  
polaris_process_aux(process_stem($1))
```

```
)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_process_te.m4
```

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```
#  
# April 2017, Victor Kamensky  
#
```

```

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#

policy_module(polarisdmincshdmgmt, 1.0);

gen_require(
    type polaris_dmi_ncsshd_mgmt_t;
)

polaris_btrace_data_manage(polaris_dmi_ncsshd_mgmt_t)
polaris_chasfs_manage(polaris_dmi_ncsshd_mgmt_t)
polaris_tdlresolve_read(polaris_dmi_ncsshd_mgmt_t)
polaris_tdlb_list_dirs(polaris_dmi_ncsshd_mgmt_t)
polaris_flashlib_read(polaris_dmi_ncsshd_mgmt_t)

corenet_tcp_bind_generic_node(polaris_dmi_ncsshd_mgmt_t)
allow polaris_dmi_ncsshd_mgmt_t self:tcp_socket { getattr getopt setopt bind create listen accept connect read write
};
allow polaris_dmi_ncsshd_mgmt_t self:udp_socket { getattr create connect read write };
allow polaris_dmi_ncsshd_mgmt_t self:cap_userns { sys_admin net_bind_service };

type polaris_dmi_ncsshd_mgmt_var_run_t;
files_pid_file(polaris_dmi_ncsshd_mgmt_var_run_t)
manage_dirs_pattern(polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_var_run_t,
polaris_dmi_ncsshd_mgmt_var_run_t)
manage_files_pattern(polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_var_run_t,
polaris_dmi_ncsshd_mgmt_var_run_t)
files_pid_filetrans(polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_var_run_t, { file dir })

# access /var/log/lastlog, /var/log/btmp
type polaris_dmi_ncsshd_mgmt_var_log_t;
logging_log_file(polaris_dmi_ncsshd_mgmt_var_log_t)
manage_files_pattern(polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_var_log_t,
polaris_dmi_ncsshd_mgmt_var_log_t)
logging_log_filetrans(polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_var_log_t, file, "lastlog")
logging_log_filetrans(polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_var_log_t, file, "btmp")

polaris_dmi_ncsshd_fwd_dgram_send(polaris_dmi_ncsshd_mgmt_t)

corenet_tcp_bind_polaris_dmi_ncsshd_mgmt_port(polaris_dmi_ncsshd_mgmt_t)
# ncsshd allows user-defined port with: netconf-yang ssh port <port_no>
corenet_tcp_bind_all_ports(polaris_dmi_ncsshd_mgmt_t)

auth_use_nsswitch(polaris_dmi_ncsshd_mgmt_t)
# assign following capabilities needed by sshd
allow polaris_dmi_ncsshd_mgmt_t self:capability { net_admin setgid sys_resource setuid sys_chroot kill };
allow polaris_dmi_ncsshd_mgmt_t self:process setrlimit;

```

```

# ncsshhd requests pseudo terminal when netconf session is set up without
# explicitly specifying the subsystem name, such as netconf.
allow polaris_dmi_ncsshhd_mgmt_t self:capability { chown fowner fsetid };
term_setattr_generic_ptys(polaris_dmi_ncsshhd_mgmt_t)
term_getattr_pty_fs(polaris_dmi_ncsshhd_mgmt_t)
term_use_generic_ptys(polaris_dmi_ncsshhd_mgmt_t)
term_use_ptmx(polaris_dmi_ncsshhd_mgmt_t)

#enable to read cpld file "/sys/devices/platform/cpld/board_vtype"
polaris_cpld_read(polaris_dmi_ncsshhd_mgmt_t)
#for sshd needs access network interface resource
allow polaris_dmi_ncsshhd_mgmt_t self:netlink_route_socket r_netlink_socket_perms;

# calls socketat server_listen at mgmt/dmi/ncsshhd/src/sshd.c
polaris_socketat_nsfs_read(polaris_dmi_ncsshhd_mgmt_t)
polaris_lfts_dev_use(polaris_dmi_ncsshhd_mgmt_t)

corecmd_exec_bin(polaris_dmi_ncsshhd_mgmt_t)

logging_send_syslog_msg(polaris_dmi_ncsshhd_mgmt_t)
# TODO : revisit below statement when addressing initrc_exec_t denial
polaris_rmonbifo_tmp_read(polaris_dmi_ncsshhd_mgmt_t)

# allow access to /tmp/sw/cfg and /tmp/sw/boot
polaris_boot_tmp_read(polaris_dmi_ncsshhd_mgmt_t)
polaris_cfg_data_manage(polaris_dmi_ncsshhd_mgmt_t)

polaris_dmi_dmiauthd_dgram_send(polaris_dmi_ncsshhd_mgmt_t)

corenet_tcp_connect_polaris_netconf_interceptor_port(polaris_dmi_ncsshhd_mgmt_t);
# This fixes runin.sh related denials. Refer to auth.c file which invokes bshell.
polaris_bexecute_domtrans(polaris_dmi_ncsshhd_mgmt_t);

# This fixes authorized keys access related denials.
polaris_ncsshhd_authorized_keys_read(polaris_dmi_ncsshhd_mgmt_t);

# This fixes denials related to interceptor files.
polaris_interceptor_manage(polaris_dmi_ncsshhd_mgmt_t);

# This fixes denials related to netconf_callhome executable
gen_require(
    type polaris_conf_d_t;
)
allow polaris_dmi_ncsshhd_mgmt_t polaris_conf_d_t:tcp_socket { getattr getopt setopt };

# This fixes denials related to route, scp, chvrf command executables
# { read open getattr } operations are allowed on route command

```

```

# { search open } operations are allowed on scp command
# { read open execute execute_no_trans } operations are allowed on chvrf command
kernel_read_network_state(polaris_dmi_ncsshd_mgmt_t)

optional_policy(
# allows access to /tmp/xml/Intf dir and files
polaris_cedge_tmp_manage(polaris_dmi_ncsshd_mgmt_t)
polaris_cedge_xml_tmp_manage(polaris_dmi_ncsshd_mgmt_t)
')
# This fixes denials related to ifconfig executable
# { execute read open execute_no_trans map getattr } operations are allowed
sysnet_domtrans_ifconfig(polaris_dmi_ncsshd_mgmt_t)

# This fixes access denials related to confd checking ncsshd_mgmt proc info
# /proc/<ncsshd pid>/
read_files_pattern(polaris_conf_d_t, polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_t)
read_lnk_files_pattern(polaris_conf_d_t, polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_t)

# allows access for admin-tech generation from vManage
polaris_admin_tech_data_manage(polaris_dmi_ncsshd_mgmt_t)
polaris_bootflash_manage(polaris_dmi_ncsshd_mgmt_t)

# allow access to polaris_cfg_data_t
polaris_cfg_data_manage(polaris_dmi_ncsshd_mgmt_t)

# allow access to polaris_boot_tmp_t
polaris_boot_tmp_read(polaris_dmi_ncsshd_mgmt_t)

# allow to watch /var/run/netns and list dir
polaris_watch_netns(polaris_dmi_ncsshd_mgmt_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmincsshdmgmt.te
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#
# March 2017, Victor Kamensky
#
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#

## <summary>Polaris polarispman Policy Rules.</summary>

#####
## <summary>
##   Make the specified program domain accessible
##   from the pman.

```

```

## </summary>
## <param name="domain">
##   <summary>
##     The type of the process to transition to.
##   </summary>
## </param>
## <param name="entrypoint">
##   <summary>
##     The type of the file used as an entrypoint to this domain.
##   </summary>
## </param>
#
interface(`polaris_pman_entry`,`
  gen_require(`
    type polaris_pman_t;
    type polaris_gdb_t;
  `)

  domtrans_pattern(polaris_pman_t, $2, $1)
  domtrans_pattern(polaris_gdb_t, $2, $1)

  allow polaris_gdb_t $1:process { ptrace signal sigstop };
)

#####
## <summary>
##   Execute a domain transition to run pman.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_pman_domtrans`,`
  gen_require(`
    type polaris_pman_t, polaris_pman_exec_t;
  `)

  domtrans_pattern($1, polaris_pman_exec_t, polaris_pman_t)
)

#####
## <summary>
##   Read pman temporary files and directories in /tmp.
## </summary>
## <param name="domain">
##   <summary>

```

```

## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_pman_read_tmp_files`,`
    gen_require(`
        type polaris_pman_tmp_t;
    `)

    read_files_pattern($1, polaris_pman_tmp_t, polaris_pman_tmp_t)
    list_dirs_pattern($1, polaris_pman_tmp_t, polaris_pman_tmp_t)
`)

#####
## <summary>
## Manage pman temporary files and directories in /tmp.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_pman_manage_tmp_files`,`
    gen_require(`
        type polaris_pman_tmp_t;
    `)

    manage_files_pattern($1, polaris_pman_tmp_t, polaris_pman_tmp_t)
    manage_dirs_pattern($1, polaris_pman_tmp_t, polaris_pman_tmp_t)
`)

#####
## <summary>
## Create an object in the polaris_pman_tmp directories.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <param name="object">
## <summary>
## The object class of the object being created.
## </summary>
## </param>
## <param name="name" optional="true">
## <summary>

```

```

## The name of the object being created.
## </summary>
## </param>
#
interface(`polaris_pman_tmp_filetrans`,`
gen_require(`
type polaris_pman_tmp_t;
`)

files_tmp_filetrans($1, polaris_pman_tmp_t, $2, $3)
`)

#####
## <summary>
## Check existence (getattr) of pman btrace file (i.e
## polaris_pman_bt_t)
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_pman_bt_getattr`,`
gen_require(`
type polaris_pman_bt_t;
type polaris_btrace_base_t;
`)
getattr_files_pattern($1, polaris_btrace_base_t, polaris_pman_bt_t)
`)

#####
## <summary>
## Read and write to pmanlite fifo file, used as
## stdout/stderr.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_use_pman_fifo`,`
gen_require(`
type polaris_pman_t;
`)

allow $1 polaris_pman_t:fifo_file { rw_fifo_file_perms };

```

)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispman.if

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#

# August 2017, Shawn Lu

#

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#

policy\_module(polariswncmgrp, 1.0);

gen\_require(^

type polaris\_wncmgrp\_t;

)

polaris\_btrace\_data\_manage(polaris\_wncmgrp\_t)

polaris\_chasfs\_manage(polaris\_wncmgrp\_t)

polaris\_tdlresolve\_read(polaris\_wncmgrp\_t)

polaris\_tdlldb\_list\_dirs(polaris\_wncmgrp\_t)

polaris\_cpdp\_read(polaris\_wncmgrp\_t)

polaris\_lua\_read(polaris\_wncmgrp\_t)

polaris\_flashlib\_read(polaris\_wncmgrp\_t)

polaris\_ripc\_sman\_ui\_serv\_connect(polaris\_wncmgrp\_t)

polaris\_db\_tdlldb\_dir\_use(polaris\_wncmgrp\_t)

#allow setrlimit

allow polaris\_wncmgrp\_t self:process setrlimit;

allow polaris\_wncmgrp\_t self:capability sys\_resource;

allow polaris\_wncmgrp\_t self:capability dac\_override;

allow polaris\_wncmgrp\_t self:tcp\_socket { shutdown };

#allow wncmgrp UDP socket operations

allow polaris\_wncmgrp\_t self:udp\_socket { bind getattr setopt };

corenet\_udp\_bind\_generic\_node(polaris\_wncmgrp\_t)

#allow wncmgrp module to do ioctl,open,read,write operations on char file

polaris\_lfts\_dev\_use(polaris\_wncmgrp\_t)

# it use tcp port 9090 and9091(polaris\_wnc\_mgrd\_port)

corenet\_tcp\_bind\_polaris\_wnc\_mgrd\_port(polaris\_wncmgrp\_t)

#####

```

# For ewlc, wncd and wncmgrd needs access to files under /mnt/images/...these
# are related to AccessPoint images
#####
# wncmgrd calls ewlc_get_ap_sw_version() to open/read
#   /tmp/sw/rp/0/0/rp_wlc/mount/mnt/images/ap.pri/version.info
# call-chain: main -> ewlc_app_context_init -> wncd_evlib_app_init_cb ->
#   ewlc_capwapac_lib_init -> capwapac_init_default_config -> ewlc_get_ap_sw_version
polaris_wlc_ap_images_read(polaris_wncmgrd_t)

polaris_odm_clnt2svr_mqipc_create(polaris_wncmgrd_t)

polaris_tdlbpbersist_setup(polaris_wncmgrd_t)

polaris_tmp_tdlbpbersist_setup(polaris_wncmgrd_t)

logging_send_syslog_msg(polaris_wncmgrd_t)

# bind CAPWAP control and data
corenet_udp_bind_polaris_capwap_ctr_port(polaris_wncmgrd_t)
corenet_udp_bind_polaris_capwap_data_port(polaris_wncmgrd_t)

# wncmgrd accessing NA certificate to push to AP
type polaris_icap_cert_t;
polaris_pfile_type(polaris_icap_cert_t)

#wncmgrd receives the certificate file from IOSd via IPC
#and writes to /bootflash for ICap feature
#and hence requires access.
gen_require(
type polaris_icap_cert_t;
')
filetrans_pattern(polaris_wncmgrd_t, polaris_disk_bootflash_t, polaris_icap_cert_t, file, "NACert.pem")
allow polaris_wncmgrd_t polaris_icap_cert_t:file { write create read open getattr unlink };

#allow tcp connection from http port for awips file download
#from DNAC
corenet_tcp_connect_http_port(polaris_wncmgrd_t)

#allow read/write/mmap access to awips file
gen_require(
type polaris_awips_signature_file_t;
')
filetrans_pattern(polaris_wncmgrd_t, polaris_disk_bootflash_t, polaris_awips_signature_file_t, file, "awips.json")
allow polaris_wncmgrd_t polaris_awips_signature_file_t:file { map write create read open getattr unlink };

#allow read access to resolv.conf
sysnet_read_config(polaris_wncmgrd_t)

```

```

#ewlc_capwap_dgram_srvr_create_raw_send_socket () creates a socket
#creates sll.sll_family = AF_PACKET;
#sll.sll_ifindex = dgram_io_desc->lfts_ifindex;
#sll.sll_protocol = htons(ETH_P_ALL);

allow polaris_wncmgrd_t self:packet_socket { create_socket_perms setopt };
allow polaris_wncmgrd_t self:rawip_socket { create_socket_perms setopt ioctl };

allow polaris_wncmgrd_t self:capability net_raw;
corenet_raw_bind_generic_node(polaris_wncmgrd_t)

gen_require(
    type port_t;
)
allow polaris_wncmgrd_t port_t:rawip_socket name_bind;

# allow tmp symlinks
fs_read_tmpfs_symlinks(polaris_wncmgrd_t)
# allow tmp file read
polaris_install_tmp_read(polaris_wncmgrd_t)

```

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\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswncmgrd.te  
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```

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#

```

```

## <summary>Polaris NVRAM Policy Rules.</summary>

```

```

#####
# NVRAM policy
#####

```

```

#####
## <summary>
##   Manage nvram files (location varies by platform)
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>

```

```

## <rolebase/>
#
interface(`polaris_nvram_manage',`
gen_require(
    type polaris_nvram_file_t;
    type device_t;
)

    manage_blk_files_pattern($1, device_t, polaris_nvram_file_t)
    manage_files_pattern($1, polaris_nvram_file_t, polaris_nvram_file_t)
    manage_lnk_files_pattern($1, polaris_nvram_file_t, polaris_nvram_file_t)
)

```

```
#####
```

```

## <summary>
##   Read nvram files (location varies by platform)
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#

```

```

interface(`polaris_nvram_read',`
gen_require(
    type polaris_nvram_file_t;
    type device_t;
)

    read_blk_files_pattern($1, device_t, polaris_nvram_file_t)
    read_files_pattern($1, polaris_nvram_file_t, polaris_nvram_file_t)
    read_lnk_files_pattern($1, polaris_nvram_file_t, polaris_nvram_file_t)
)

```

```
#####
```

```

## <summary>
##   getattr for nvram files (location varies by platform)
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#

```

```

interface(`polaris_nvram_getattr',`
gen_require(

```

```
type polaris_nvram_file_t;
    type device_t;
)

getattr_blk_files_pattern($1, device_t, polaris_nvram_file_t)
getattr_files_pattern($1, polaris_nvram_file_t, polaris_nvram_file_t)
getattr_lnk_files_pattern($1, polaris_nvram_file_t, polaris_nvram_file_t)
)
```

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\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisnvram.if

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```
#
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#
```

```
/usr/cpp/bin/cpp_stats_svr -- gen_context(system_u:object_r:polaris_cpp_stats_exec_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppstats.fc

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```
#
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#
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#
```

```
policy_module(polarisoom, 1.0);
```

```
polaris_process_domain_template(oom)
```

```
corecmd_exec_bin(polaris_oom_t)
```

```
# allow to read /proc/meminfo
kernel_read_system_state(polaris_oom_t)
```

```
# allow read of /etc/passwd
auth_use_nsswitch(polaris_oom_t)
```

```
# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_oom_t)
```

```
allow polaris_oom_t self:capability sys_resource;
allow polaris_oom_t self:process setpgid;
```

```
polaris_btrace_data_manage(polaris_oom_t)
polaris_chasfs_manage(polaris_oom_t)
polaris_cpld_read(polaris_oom_t)
polaris_boot_tmp_read(polaris_oom_t)
polaris_read_debug_conf(polaris_oom_t)
polaris_disk_crashinfo_getattr(polaris_oom_t)
polaris_rmonbifo_tmp_read(polaris_oom_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisoom.te
```

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```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
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```

```
# All rights reserved
```

```
#
```

```
# /mnt/sd1 edison and nyquist
```

```
/mnt/sd1(/.*)? gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)
```

```
/mnt/sd1/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
```

```
/mnt/sd1/system-report.*\tar\,gz gen_context(system_u:object_r:polaris_system_report_t,s0)
```

```
# /mnt/sd3 edison and nyquist
```

```
/mnt/sd3(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
```

```
/mnt/sd3/user/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
```

```
/mnt/sd3/user/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
```

```
/mnt/sd3/user/tan(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
```

```
/mnt/sd3/user/.ssh(/.*)? gen_context(system_u:object_r:ssh_home_t,s0)
```

```
/mnt/sd3/user/.ssh/ssh_host.*_key\,pub gen_context(system_u:object_r:ssh_key_t,s0)
```

```
/mnt/sd3/user/.ssh/ssh_host.*_key gen_context(system_u:object_r:ssh_key_t,s0)
```

```
/mnt/sd3/user/nvram_config -- gen_context(system_u:object_r:polaris_nvram_file_t,s0)
```

```
/mnt/sd3/user/debug.conf -- gen_context(system_u:object_r:polaris_debug_conf_t,s0)
```

```
/mnt/sd3/user/packages.conf gen_context(system_u:object_r:polaris_packages_conf_t,s0)
```

```
/mnt/sd3/user/.dbpersist(/.*)? gen_context(system_u:object_r:polaris_disk_dbm_t,s0)
```

```
/mnt/sd3/user/.installer(/.*)? gen_context(system_u:object_r:polaris_disk_install_t,s0)
```

```
/mnt/sd3/user/.rollback_timer(/.*)? gen_context(system_u:object_r:polaris_rbtimer_bootflash_t,s0)
```

```
/mnt/sd3/user/kernel/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
```

```
/mnt/sd3/user/sys_report(/.*)? gen_context(system_u:object_r:polaris_chasync_files_t,s0)
```

```
# /mnt/sd4 nyquist
```

```
/mnt/sd4(/.*)? gen_context(system_u:object_r:polaris_disk_license_t,s0)
```

```
# /mnt/sd5 edison and nyquist
```

```

/mnt/sd5(/.*)?          gen_context(system_u:object_r:polaris_disk_license_t,s0)

ifdef(`edison_platform',`
# /mnt/sd6
/mnt/sd6(/.*)?        gen_context(system_u:object_r:polaris_disk_license_t,s0)

# /mnt/sd7
/mnt/sd7(/.*)?        gen_context(system_u:object_r:polaris_obfl_data_t,s0)

# /mnt/sd8
/mnt/sd8(/.*)?        gen_context(system_u:object_r:polaris_disk_ucose_t,s0)

# /mnt/sd9
/mnt/sd9(/.*)?        gen_context(system_u:object_r:polaris_disk_recovery_t,s0)
')

ifdef(`nyquist_platform',`
# /mnt/sd6
/mnt/sd6(/.*)?        gen_context(system_u:object_r:polaris_obfl_data_t,s0)

# /mnt/sd7
/mnt/sd7(/.*)?        gen_context(system_u:object_r:polaris_disk_ucose_t,s0)
#unmount script used ny Nyquist platform
/bin/cat9k_ssd_unmount.sh      gen_context(system_u:object_r:polaris_ssd_unmount_exec_t,s0)
')

ifdef(`quake_platform',`
# /mnt/sd6
/mnt/sd6(/.*)?        gen_context(system_u:object_r:polaris_obfl_data_t,s0)

# /mnt/sd7
/mnt/sd7(/.*)?        gen_context(system_u:object_r:polaris_disk_ucose_t,s0)
')

# /crashinfo is symbolic link to /mnt/sd1 created by systemd-tmpfiles
/crashinfo              gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)
# /flash is symbolic link to /mnt/sd3/user
/flash                  gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
# /lic0 is symbolic link to /mnt/sd4
/lic0                   gen_context(system_u:object_r:polaris_disk_license_t,s0)
# /lic1 is symbolic link to /mnt/sd5
/lic1                   gen_context(system_u:object_r:polaris_disk_license_t,s0)
# /ngwc_config/nvram is symbolic link to /mnt/sd3/user
/ngwc_config/nvram      gen_context(system_u:object_r:polaris_nvram_file_t,s0)

# /flash1 macallan
/flash1(/.*)?          gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/flash1/user/core(/.*)?  gen_context(system_u:object_r:polaris_core_file_t,s0)

```

```

/flash1/user/tracelogs(/.*)?      gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/flash1/user/.ssh(/.*)?          gen_context(system_u:object_r:ssh_home_t,s0)
/flash1/user/.ssh/ssh_host.*_key\
.pub gen_context(system_u:object_r:sshd_key_t,s0)
/flash1/user/.ssh/ssh_host.*_key  gen_context(system_u:object_r:sshd_key_t,s0)
/flash1/user/nvram_config --      gen_context(system_u:object_r:polaris_nvram_file_t,s0)
/flash1/user/debug.conf --       gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/flash1/user/packages.conf        gen_context(system_u:object_r:polaris_packages_conf_t,s0)
/flash1/user/kernel/core(/.*)?   gen_context(system_u:object_r:polaris_core_file_t,s0)
/flash1/user/.rollback_timer(/.*)? gen_context(system_u:object_r:polaris_rbtimer_bootflash_t,s0)
/flash1/user/.installer(/.*)?    gen_context(system_u:object_r:polaris_disk_install_t,s0)
/flash1/user/.dbpersist(/.*)?    gen_context(system_u:object_r:polaris_disk_dbm_t,s0)
/flash1/user/tan(/.*)?           gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/flash1/user/sys_report(/.*)?    gen_context(system_u:object_r:polaris_chasync_files_t,s0)
/flash1/TEMPLATE(/.*)?          gen_context(system_u:object_r:polaris_chasync_files_t,s0)

# /flash2 macallan 9500h
/flash2(/.*)?                   gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)
/flash2/CRASH(/.*)?             gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)
/flash2/CRASH/tracelogs(/.*)?   gen_context(system_u:object_r:polaris_btrace_data_t,s0)

# /flash3 macallan
/flash3(/.*)?                   gen_context(system_u:object_r:polaris_obfl_data_t,s0)

# /flash4 macallan
/flash4(/.*)?                   gen_context(system_u:object_r:polaris_disk_license_t,s0)

# /flash5 macallan
/flash5(/.*)?                   gen_context(system_u:object_r:polaris_disk_license_t,s0)

# /flash6 macallan, used for silent roll in macallan
/flash6(/.*)?                   gen_context(system_u:object_r:polaris_disk_ucode_t,s0)

# /flash7 macallan, silent roll
/flash7(/.*)?                   gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

# macallan silent roll link
/cc_sdrv                         gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

# macallan /ngmod_config/nvram link will be labeled by systemd-tmpfiles
/ngmod_config                    gen_context(system_u:object_r:polaris_nvram_file_t,s0)
/ngmod_config/nvram              gen_context(system_u:object_r:polaris_nvram_file_t,s0)

# remap_mem0 device
/dev/remap_mem0 -c gen_context(system_u:object_r:polaris_remap_mem_device_t,s0)

# chdrvmmmap device (MMAP Driver for ASIC Memory mapping)
/dev/chdrvmmmap                  -c gen_context(system_u:object_r:polaris_chdrvmmmap_device_t,s0)

```

```

# gettysburg_dev1 device
/dev/gettysburg_dev[0-9]*      -c gen_context(system_u:object_r:polaris_gettysburg_fpga_device_t,s0)

# types that might be packages label by other policy
ifdef(`nyquist_platform',`
/usr/binos/bin/flash_check.sh -- gen_context(system_u:object_r:polaris_flashcheck_exec_t,s0)
/usr/binos/bin/cman_fp -- gen_context(system_u:object_r:polaris_cm_fp_exec_t,s0)
/usr/binos/bin/cmcc -- gen_context(system_u:object_r:polaris_cm_cc_exec_t,s0)
')
ifdef(`passport_platform',`
/usr/binos/bin/platform_mgr -- gen_context(system_u:object_r:polaris_ngwc_plfm_mgr_exec_t,s0)
/usr/binos/bin/xcvr_test -- gen_context(system_u:object_r:polaris_xcvr_test_exec_t,s0)
/usr/binos/bin/sif_mgr -- gen_context(system_u:object_r:polaris_sif_mgr_exec_t,s0)
/usr/binos/bin/cmm -- gen_context(system_u:object_r:polaris_cmm_exec_t,s0)
/usr/binos/bin/bt_logger -- gen_context(system_u:object_r:polaris_bt_logger_exec_t,s0)
/usr/binos/bin/torchd -- gen_context(system_u:object_r:polaris_torch_exec_t,s0)
/usr/binos/bin/swift_sampled -- gen_context(system_u:object_r:polaris_faked_exec_t,s0)
')

# PLEASE LOOK AT ME: why this file in /etc/init.d?
/etc/rc.d/init.d/cat9k_fpgahelper_funcs.sh -- gen_context(system_u:object_r:bin_t,s0)
/etc/rc.d/init.d/cat9k_kr_helper.sh -- gen_context(system_u:object_r:bin_t,s0)

# symbolic links in /platform-specific directory
/platform-specific/gryphon -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/gryphon_lite -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/prometheus -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/skyfox -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/vulcan -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/intrepid -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/martion -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/farscape -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/borg -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/scorpion -l gen_context(system_u:object_r:root_t,s0)

# /dev/cisco/dplriomem device, Generic Memory map driver for mapping doppler IO memory to userspace
/dev/cisco/dplriomem -c gen_context(system_u:object_r:polaris_dplr_iomem_mmapdrv_device_t,s0)

/vol/disk0(/.*)?      gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
# /appstore_hd is symbolic link to /vol/disk0
/appstore_hd -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
# /appstore_flash is symbolic link to /flash1
/appstore_flash -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
# /rp_sdrv is symbolic link to /flash6/DPU
/rp_sdrv -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
# /init is symbolic link to /lib/systemd/systemd
/init -l gen_context(system_u:object_r:init_exec_t,s0)
# /install is symbolic link to /flash1/INSTALL

```

```

/install -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
# /disk0 is symbolic link to /vol/disk0
/disk0 -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

# provide relabeling rules for /platform-specific/personality file
# otherwise, they cause conflicting specifications error during relabeling
/platform-specific/bigbang/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/nyquist/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/passport/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/starfleet/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/intrepid/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/martion/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/farscape/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/borg/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/scorpion/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/imperial/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/jura/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)

/platform-specific/bigbang/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/nyquist/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/passport/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/starfleet/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/intrepid/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/martian/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/farscape/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/borg/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/scorpion/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/imperial/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/jura/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/quake1/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/quake2/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)

/platform-specific/bigbang/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/nyquist/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/passport/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/starfleet/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/intrepid/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/martian/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/farscape/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/borg/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/scorpion/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/imperial/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/jura/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)

/platform-specific/bigbang/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/nyquist/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/passport/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/starfleet/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)

```

/platform-specific/intrepid/usr/binos/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/martian/usr/binos/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/farscape/usr/binos/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/borg/usr/binos/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/scorpion/usr/binos/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/imperial/usr/binos/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/jura/usr/binos/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)

/platform-specific/bigbang/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/nyquist/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/passport/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/starfleet/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/intrepid/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/martian/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/farscape/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/borg/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/scorpion/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/imperial/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)  
/platform-specific/jura/bin(/.\*)? gen\_context(system\_u:object\_r:bin\_t,s0)

/platform-specific/bigbang/etc/selinux(/.\*)? gen\_context(system\_u:object\_r:selinux\_config\_t,s0)  
/platform-specific/nyquist/etc/selinux(/.\*)? gen\_context(system\_u:object\_r:selinux\_config\_t,s0)  
/platform-specific/passport/etc/selinux(/.\*)? gen\_context(system\_u:object\_r:selinux\_config\_t,s0)  
/platform-specific/starfleet/etc/selinux(/.\*)? gen\_context(system\_u:object\_r:selinux\_config\_t,s0)  
/platform-specific/intrepid/etc/selinux(/.\*)? gen\_context(system\_u:object\_r:selinux\_config\_t,s0)  
/platform-specific/martian/etc/selinux(/.\*)? gen\_context(system\_u:object\_r:selinux\_config\_t,s0)  
/platform-specific/farscape/etc/selinux(/.\*)? gen\_context(system\_u:object\_r:selinux\_config\_t,s0)  
/platform-specific/borg/etc/selinux(/.\*)? gen\_context(system\_u:object\_r:selinux\_config\_t,s0)  
/platform-specific/scorpion/etc/selinux(/.\*)? gen\_context(system\_u:object\_r:selinux\_config\_t,s0)  
/platform-specific/imperial/etc/selinux(/.\*)? gen\_context(system\_u:object\_r:selinux\_config\_t,s0)  
/platform-specific/jura/etc/selinux(/.\*)? gen\_context(system\_u:object\_r:selinux\_config\_t,s0)  
/platform-specific/quake1/etc/selinux(/.\*)? gen\_context(system\_u:object\_r:selinux\_config\_t,s0)  
/platform-specific/quake2/etc/selinux(/.\*)? gen\_context(system\_u:object\_r:selinux\_config\_t,s0)

# /objstore/.swtam for hybrid TAM access

/objstore(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_objstore\_t,s0)

/platform-specific/bigbang/etc/selinux/([^\s]\*)?contexts(/.\*)? gen\_context(system\_u:object\_r:default\_context\_t,s0)  
/platform-specific/nyquist/etc/selinux/([^\s]\*)?contexts(/.\*)? gen\_context(system\_u:object\_r:default\_context\_t,s0)  
/platform-specific/passport/etc/selinux/([^\s]\*)?contexts(/.\*)? gen\_context(system\_u:object\_r:default\_context\_t,s0)  
/platform-specific/starfleet/etc/selinux/([^\s]\*)?contexts(/.\*)? gen\_context(system\_u:object\_r:default\_context\_t,s0)  
/platform-specific/intrepid/etc/selinux/([^\s]\*)?contexts(/.\*)? gen\_context(system\_u:object\_r:default\_context\_t,s0)  
/platform-specific/martian/etc/selinux/([^\s]\*)?contexts(/.\*)? gen\_context(system\_u:object\_r:default\_context\_t,s0)  
/platform-specific/farscape/etc/selinux/([^\s]\*)?contexts(/.\*)? gen\_context(system\_u:object\_r:default\_context\_t,s0)  
/platform-specific/borg/etc/selinux/([^\s]\*)?contexts(/.\*)? gen\_context(system\_u:object\_r:default\_context\_t,s0)  
/platform-specific/scorpion/etc/selinux/([^\s]\*)?contexts(/.\*)? gen\_context(system\_u:object\_r:default\_context\_t,s0)

```

/platform-specific/imperial/etc/selinux/([^\s]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/jura/etc/selinux/([^\s]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/quake1/etc/selinux/([^\s]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/quake2/etc/selinux/([^\s]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)

/platform-specific/bigbang/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/nyquist/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/passport/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/starfleet/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/intrepid/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/martian/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/farscape/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/borg/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/scorpion/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/imperial/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/jura/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)

/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/bigbang/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/nyquist/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/passport/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/starfleet/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/intrepid/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/martian/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/farscape/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/borg/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/scorpion/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/imperial/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/jura/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)

/platform-specific/bigbang/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/nyquist/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/passport/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/starfleet/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/intrepid/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/martian/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/farscape/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/borg/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/scorpion/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/imperial/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/jura/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)

/dev/shm/sem\,i2c_sem000 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\,i2c_sem001 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\,i2c_sem002 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\,i2c_sem003 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\,i2c_sem004 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\,i2c_sem005 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)

```

```

/dev/shm/sem\i2c_sem006      gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\i2c_sem007      gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\io_expander_semaphore  gen_context(system_u:object_r:polaris_quake_i2c_t,s0)

# on pangea/bigbang platforms /dev/NVRAM block device is accessed
# by flashlib in iosd. It stores rommon vars
ifdef(`bigbang_platform',`
/dev/NVRAM  -b  gen_context(system_u:object_r:polaris_flashlib_device_t)
# /mnt/sd6
/mnt/sd6(/.*)?      gen_context(system_u:object_r:polaris_obfl_data_t,s0)
')

/vol/usb1(/.*)?      gen_context(system_u:object_r:polaris_disk_hddisk_t,s0)

/mnt/vbd[a-j]2(/.*)?      gen_context(system_u:object_r:polaris_obfl_data_t,s0)

/tmp/fpga_upgrade      gen_context(system_u:object_r:polaris_fpga_upgrade_tmp_t,s0)

#/unicode0 9300 silent roll
/unicode0(/.*)?      gen_context(system_u:object_r:polaris_disk_unicode0_t,s0)

#/dev/cisco/fpga_iomem device, Generic Memory map driver for mapping FPGA IO memory to userspace
/dev/cisco/fpga_iomem -c gen_context(system_u:object_r:polaris_fpga_iomem_mmapfpga_device_t,s0)

# nplum-power file is located in /bootflash and needs to be accessed by cman-rp/IOSd
/flash1/user/nplum-power gen_context(system_u:object_r:polaris_nplum_power_file_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwc.fc
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#
# June 2020, Cuiyan Ma
#
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#

/usr/binos/conf/issu_comp_check.sh  -- gen_context(system_u:object_r:polaris_issu_comp_check_exec_t,s0)
/tmp/boottime_comp_check_tree_other_rp -d gen_context(system_u:object_r:polaris_issu_comp_check_tmp_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisissucompcheck.fc
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#
# March 2017, Victor Kamensky
#

```

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#

## <summary>Polaris repm Policy Rules.</summary>

#####

## <summary>

## Manage /tmp/replications files.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_repm\_tmp\_manage`,`

gen\_require(`

type polaris\_repm\_tmp\_t;

`)

manage\_files\_pattern(\$1, polaris\_repm\_tmp\_t, polaris\_repm\_tmp\_t)

manage\_dirs\_pattern(\$1, polaris\_repm\_tmp\_t, polaris\_repm\_tmp\_t)

`)

#####

## <summary>

## Manage /dev/shm/mq.-repm\_peer\_mq/ files.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_repm\_peer\_mqipc\_manage`,`

gen\_require(`

type polaris\_repm\_peer\_mqipc\_t;

`)

manage\_files\_pattern(\$1, polaris\_repm\_peer\_mqipc\_t, polaris\_repm\_peer\_mqipc\_t)

allow \$1 polaris\_repm\_peer\_mqipc\_t:file map;

polaris\_mqipc\_create\_name\_dir(\$1, polaris\_repm\_peer\_mqipc\_t, repm\_peer\_mq)

`)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrepm.if

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dnl

dnl April 2018, Victor Kamensky

dnl

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dnl

```
define(^mqipc_interface_map', `defn(format(`mqipc_interface_map[%s]', ` $1'))')
```

```
define(^mqipc_interface_map_set', `define(format(`mqipc_interface_map[%s]', ` $1'), ` $2'))')
```

```
define(^polaris_mqipc_service_server_many',
```

```
  `ifelse($3, `',
```

```
    polaris_mqipc_create_name(dollarsone, $1, $2),
```

```
    polaris_mqipc_create_name(dollarsone, $1, $2-b$3)
```

```
  `ifelse($3, 0, `polaris_mqipc_create_name(dollarsone, $1, $2)', `polaris_mqipc_service_server_many($1, $2, eval($3 - 1))')')
```

```
define(^polaris_mqipc_service_server_aux_full', `dnl
```

```
#####
```

```
## <summary>
```

```
## Create $2 mqipc chanell.
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
## <infoflow type="none"/>
```

```
#
```

```
interface(`polaris_mqipc_$1_create_name",`
```

```
  gen_require(  
    type $2;
```

```
  )
```

```
  $3
```

```
")
```

```
#####
```

```
## <summary>
```

```
## Use $2 mqipc chanell.
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
## <infoflow type="none"/>
```

```
#
```

```
interface(`polaris_mqipc_$1_use",`
```

```
  gen_require(  
    type $2;
```

```

        type $2;
    )

    polaris_mqipc_use(dollarone, $2)
")
')

define(`polaris_mqipc_service_server_aux',`
ifelse(mqipc_interface_map($1), `', `polaris_mqipc_service_server_aux_full($1, $2, $3)')
mqipc_interface_map_set($1, 1)
')

define(`polaris_mqipc_service_server',`dnl
polaris_mqipc_service_server_aux(mqipc_stem($1), mqipc_label($1),
    polaris_mqipc_service_server_many(mqipc_label($1), $5, max_scope_map($3, $4, $2)))')

define(`polaris_mqipc_service_client',`)

define(`polaris_mqipc_service_server_elastic_client',`dnl
polaris_mqipc_service_server_aux(mqipc_stem($1), mqipc_label($1),
    polaris_mqipc_service_server_many(mqipc_label($1), $5, max_scope_map($4, elastic, $3)))')

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_mqipc\_if.m4

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```

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# March 2017, Victor Kamensky
#
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#

```

```

/dev/lsmapi -c gen_context(system_u:object_r:polaris_lsmapi_device_t,s0)
/dev/lsmapi_app0 -c gen_context(system_u:object_r:polaris_lsmapi_device_t,s0)
/dev/lsmapi_app1 -c gen_context(system_u:object_r:polaris_lsmapi_device_t,s0)
/dev/lsmapi_app2 -c gen_context(system_u:object_r:polaris_lsmapi_device_t,s0)

```

```

/tmp/pi(/.*)? gen_context(system_u:object_r:polaris_pi_uds_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislsmapi.fc

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```

#
# November 2020, Christine Hwang
#
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```

```

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#

policy_module(polarisbbu, 1.0);

gen_require(
    type polaris_bbu_t;
)

polaris_btrace_data_manage(polaris_bbu_t)
polaris_chasfs_manage(polaris_bbu_t)
polaris_tdlresolve_read(polaris_bbu_t)
polaris_cpld_read(polaris_bbu_t)

polaris_ripc_sman_ui_serv_connect(polaris_bbu_t)

# Allow I2C Usage
polaris_i2c_use(polaris_bbu_t)
polaris_i2c_sem_manage(polaris_bbu_t)

# Allow sysfs read for platform ID
dev_list_sysfs(polaris_bbu_t)

# Allow bbu to access NVRAM for /flash0/bbu
fs_getattr_tmpfs(polaris_bbu_t)
polaris_nvram_manage(polaris_bbu_t)

# Allow logger which is used for syslog messages
allow polaris_bbu_t self:unix_dgram_socket { connect create };
logging_send_syslog_msg(polaris_bbu_t)

# tty BBU device
type polaris_bbu_device_t;
dev_node(polaris_bbu_device_t)

polaris_bbu_dev_use(polaris_bbu_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbbu.te
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#
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#
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#

```

```
## <summary>Polaris dmi_ports_fetch Policy Rules.</summary>
```

```
#####
```

```
## <summary>
```

```
## Execute a domain transition to run dmi_ports_fetch.
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed to transition.
```

```
## </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_dmi_ports_fetch_domtrans`,`
```

```
gen_require(`
```

```
type polaris_dmi_ports_fetch_t, polaris_dmi_ports_fetch_exec_t;
```

```
`)
```

```
domtrans_pattern($1, polaris_dmi_ports_fetch_exec_t, polaris_dmi_ports_fetch_t)
```

```
')
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmiportsfetch.if
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2016-2020 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
policy_module(polariscliagent, 1.0);
```

```
gen_require(`
```

```
type polaris_cli_agent_t;
```

```
`)
```

```
polaris_btrace_data_manage(polaris_cli_agent_t)
```

```
polaris_crft_data_manage(polaris_cli_agent_t)
```

```
polaris_chasfs_manage(polaris_cli_agent_t)
```

```
polaris_tdlresolve_read(polaris_cli_agent_t)
```

```
polaris_tdlldb_list_dirs(polaris_cli_agent_t)
```

```
polaris_cpld_read(polaris_cli_agent_t)
```

```
polaris_flashlib_read(polaris_cli_agent_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_cli_agent_t)
```

```
polaris_db_tdlldb_dir_use(polaris_cli_agent_t)
```

```

polaris_libleiutil_build_config_directory(polaris_cli_agent_t)

# cli_agent /var/run pid file
type polaris_cli_agent_var_run_t;
files_pid_file(polaris_cli_agent_var_run_t)
manage_files_pattern(polaris_cli_agent_t, polaris_cli_agent_var_run_t, polaris_cli_agent_var_run_t)
manage_dirs_pattern(polaris_cli_agent_t, polaris_cli_agent_var_run_t, polaris_cli_agent_var_run_t)
files_pid_filetrans(polaris_cli_agent_t, polaris_cli_agent_var_run_t, { file dir })

polaris_cfg_data_manage(polaris_cli_agent_t)

# Provide sys_resource capability as well for sys_pipe calls
allow polaris_cli_agent_t self:capability { dac_override sys_resource };

logging_send_syslog_msg(polaris_cli_agent_t)

#DB persistence
polaris_tdlldbpersist_setup(polaris_cli_agent_t)
polaris_tmp_tdlldb_persist_setup(polaris_cli_agent_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscliagent.te
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#
# March 2017, Victor Kamensky
#
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#

policy_module(polarisflashlib, 1.0);

#####
# Flashlib policy (infra/flashlib)
#####
type polaris_flashlib_lock_t;
files_type(polaris_flashlib_lock_t)

gen_require(
    attribute polaris_extended_domain;
)

# /tmp/.flashlock file is used as flashlib lock
gen_require(
    type init_t;
)

```

```
files_tmp_filetrans({ init_t polaris_extended_domain }, polaris_flashlib_lock_t, file, ".flashlock")
```

```
type polaris_flashlib_log_t;  
files_type(polaris_flashlib_log_t)
```

```
gen_require(  
    attribute polaris_extended_domain;  
)
```

```
# /tmp/flashdev.log file is used as flashlib to log  
files_tmp_filetrans(polaris_extended_domain, polaris_flashlib_log_t, file, "flashdev.log")
```

```
# /dev/shm/flash_shm shared memory  
type polaris_flash_shm_t;  
files_type(polaris_flash_shm_t)
```

```
gen_require(  
    attribute polaris_domain;  
    type tmpfs_t;  
)  
filetrans_pattern(polaris_domain, tmpfs_t, polaris_flash_shm_t, file, "flash_shm")
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisflashlib.te

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```
#  
# July 2017, Victor Kamensky  
#  
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#
```

```
## <summary>Polaris CPLD Policy Rules.</summary>
```

```
#####
```

```
# Quack Driver policy
```

```
#####
```

```
#####
```

```
## <summary>
```

```
## Work (read, write, ioctl) with /dev/quack
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
#
interface(`polaris_quack_dev_use',`
gen_require(`
    type device_t;
    type polaris_quack_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_quack_device_t)
    read_chr_files_pattern($1, device_t, polaris_quack_device_t)
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisquack.if
No license file was found, but licenses were detected in source scan.
```

```
#
# October 2017, Victor Kamensky
#
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# All rights reserved
#
```

```
## <summary>Polaris wstatsd Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswstatsd.if
No license file was found, but licenses were detected in source scan.
```

```
dnl
dnl Mar 2020, Manu Roy
dnl
dnl Copyright (c) 2020 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl Petra Platform Max Bay Limits
max_bay_map_set(`rp', `per_bay', 0)
max_bay_map_set(`cc', `per_bay', 0)
max_bay_map_set(`fp', `per_bay', 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/petramaps.m4
No license file was found, but licenses were detected in source scan.
```

```
#
# October 2017, Victor Kamensky
#
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# All rights reserved
#
```

```

policy_module(polariswstatsd, 1.0);

gen_require(
    type polaris_wstatsd_t;
)

polaris_btrace_data_manage(polaris_wstatsd_t)
polaris_crft_data_manage(polaris_wstatsd_t)
polaris_chasfs_manage(polaris_wstatsd_t)
polaris_tdlresolve_read(polaris_wstatsd_t)
polaris_tdlldb_list_dirs(polaris_wstatsd_t)
polaris_cpld_read(polaris_wstatsd_t)
polaris_lua_read(polaris_wstatsd_t)
polaris_flashlib_read(polaris_wstatsd_t)

polaris_ripc_sman_ui_serv_connect(polaris_wstatsd_t)

polaris_db_tdlldb_dir_use(polaris_wstatsd_t)

allow polaris_wstatsd_t self:capability dac_override;
allow polaris_wstatsd_t self:udp_socket { bind setopt getattr };
corenet_udp_bind_generic_node(polaris_wstatsd_t)
corenet_udp_bind_polaris_capwap_data_port(polaris_wstatsd_t)
polaris_socketat_nsfs_read(polaris_wstatsd_t)
polaris_lfts_dev_use(polaris_wstatsd_t)

polaris_tdlldbpersist_setup(polaris_wstatsd_t)

polaris_tmp_tdlldb_persist_setup(polaris_wstatsd_t)

logging_send_syslog_msg(polaris_wstatsd_t)

#allow to read /etc/passwd
auth_use_nsswitch(polaris_wstatsd_t)

#this is being given for process to execute tar
corecmd_exec_bin(polaris_wstatsd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswstatsd.te
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#
# December 2019, Victor Kamensky
#
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```

```

#

policy_module(polarisfnfagg, 1.0);

gen_require(
    type polaris_fnf_agg_t;
)

polaris_btrace_data_manage(polaris_fnf_agg_t)
polaris_crft_data_manage(polaris_fnf_agg_t)
polaris_chasfs_read(polaris_fnf_agg_t)
polaris_tdlresolve_read(polaris_fnf_agg_t)
polaris_lua_read(polaris_fnf_agg_t)
polaris_flashlib_read(polaris_fnf_agg_t)
polaris_cpld_read(polaris_fnf_agg_t)

polaris_ripc_sman_ui_serv_connect(polaris_fnf_agg_t)

polaris_db_tdlb_dir_use(polaris_fnf_agg_t)

allow polaris_fnf_agg_t self:capability { dac_override dac_read_search };

type polaris_fnf_agg_tmp_t;
files_tmp_file(polaris_fnf_agg_tmp_t)
files_tmp_filetrans(polaris_fnf_agg_t, polaris_fnf_agg_tmp_t, dir, "fnf_agg")
manage_files_pattern(polaris_fnf_agg_t, polaris_fnf_agg_tmp_t, polaris_fnf_agg_tmp_t)
manage_dirs_pattern(polaris_fnf_agg_t, polaris_fnf_agg_tmp_t, polaris_fnf_agg_tmp_t)

# allow sending files over HTTP
corenet_tcp_connect_http_port(polaris_fnf_agg_t)
sysnet_read_config(polaris_fnf_agg_t)

# allow UDP connection for punting fnf records
allow polaris_fnf_agg_t self:udp_socket { create_socket_perms recv_msg };
corenet_udp_bind_generic_node(polaris_fnf_agg_t)

# allow punting on routers/ewlc where lfts is being used
polaris_lfts_dev_use(polaris_fnf_agg_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfnfagg.te
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#
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#
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```

```

#

## <summary>Polaris VXE Platform Policy Rules.</summary>

interface(`polaris_objstore_sem_use`,`
    gen_require(`
        type polaris_objstore_sem_t;
    `)
    allow $1 polaris_objstore_sem_t:sem rw_sem_perms;
    mmap_files_pattern($1, polaris_objstore_sem_t, polaris_objstore_sem_t)
    manage_files_pattern($1, polaris_objstore_sem_t, polaris_objstore_sem_t)
`)

#####
## <summary>
## Work (read, write, ioctl) with /dev/vda1 device
## </summary>
## <param name="domain">
##     <summary>
##         Domain allowed access.
##     </summary>
## </param>
#
interface(`polaris_grub_efi_use`,`
    gen_require(`
        type polaris_grub_efi_t;
    `)
    write_chr_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
    read_chr_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
`)

#####
## <summary>
## Search /dev/vda1 device the efi partition
## </summary>
## <param name="domain">
##     <summary>
##         Domain allowed access.
##     </summary>
## </param>
#
interface(`polaris_grub_efi_search`,`
    gen_require(`
        type polaris_grub_efi_t;
    `)
    search_dirs_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
`)

```

```
#####
## <summary>
## Read VXE install info files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_vxeinstall_info_read`,`
gen_require(`
type polaris_vxeinstall_info_t;
`)
read_files_pattern($1, polaris_vxeinstall_info_t, polaris_vxeinstall_info_t)
list_dirs_pattern($1, polaris_vxeinstall_info_t, polaris_vxeinstall_info_t)
`)

```

```
#####
## <summary>
## Read /dev/vda1 device the efi partition
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_grub_info_read`,`
gen_require(`
type polaris_grubver_t;
type polaris_grub_bios_t;
type polaris_grub_efi_t;
`)
read_files_pattern($1, polaris_grubver_t, polaris_grubver_t)
read_files_pattern($1, polaris_grub_bios_t, polaris_grub_bios_t)
read_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
list_dirs_pattern($1, polaris_grubver_t, polaris_grubver_t)
list_dirs_pattern($1, polaris_grub_bios_t, polaris_grub_bios_t)
list_dirs_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
`)

```

```
#####
## <summary>
## Manage /dev/vda1 device the efi partition
## </summary>
## <param name="domain">
##   <summary>

```

```

##      Domain allowed access.
##    </summary>
## </param>
#
interface(`polaris_grubcfg_manage',`
gen_require(`
type polaris_grub_bios_t;
type polaris_grub_efi_t;
`)
manage_files_pattern($1, polaris_grub_bios_t, polaris_grub_bios_t)
manage_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
manage_dirs_pattern($1, polaris_grub_bios_t, polaris_grub_bios_t)
manage_dirs_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
`)

```

```

#####
## <summary>
## Manage regular files/directories under /varied/grub
## CSR manages files in legacy grub disk location
## also allow run readlink -f /dev/bootflash
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_legacy_grub_manage',`
gen_require(`
type boot_t;
type fixed_disk_device_t;
`)
manage_files_pattern($1, boot_t, boot_t)
manage_dirs_pattern($1, boot_t, boot_t)
storage_getattr_fixed_disk_dev($1)
`)

```

```

#####
## <summary>
##   Work (read, write, ioctl) with /dev/hanet
##   hanet driver used by vpcgw platform of VXE family
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

ifdef(`vpcgw_platform',`
interface(`polaris_hanet_dev_use',`
gen_require(`
    type device_t;
type polaris_hanet_device_t;
`)
write_chr_files_pattern($1, device_t, polaris_hanet_device_t)
read_chr_files_pattern($1, device_t, polaris_hanet_device_t)
`)
`)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisvxe.if
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```

```

#
# March 2017, Victor Kamensky
#
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#

/usr/binos/conf/pman.sh -- gen_context(system_u:object_r:polaris_pman_exec_t,s0)
/usr/bin/pman          -- gen_context(system_u:object_r:polaris_pman_exec_t,s0)
/bin/gdbserver        -- gen_context(system_u:object_r:polaris_gdb_exec_t,s0)
/usr/bin/gdbserver    -- gen_context(system_u:object_r:polaris_gdb_exec_t,s0)
/tmp/pman_ports(/.*)?  gen_context(system_u:object_r:polaris_pman_tmp_t,s0)

/tmp/fp/process(/.*)?  gen_context(system_u:object_r:polaris_pman_tmp_t,s0)
/tmp/rp/process(/.*)?  gen_context(system_u:object_r:polaris_pman_tmp_t,s0)

/tmp/vxe_ucose_image   gen_context(system_u:object_r:polaris_pman_tmp_t,s0)
/tmp/wlc_ucose_image   gen_context(system_u:object_r:polaris_pman_tmp_t,s0)
/tmp/utah_ucose_image  gen_context(system_u:object_r:polaris_pman_tmp_t,s0)
/tmp/fugazi_ucose_image gen_context(system_u:object_r:polaris_pman_tmp_t,s0)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispman.fc
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```

```

dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl Macallan Platform Max Bay Limits
max_bay_map_set(`rp', `per_bay', 0)

```

```
max_bay_map_set(`cc', `per_bay', 9)
max_bay_map_set(`fp', `per_bay', 9)
```

```
min_bay_ripc_map_set(`rp', `per_bay', 0)
min_bay_ripc_map_set(`cc', `per_bay', 1)
min_bay_ripc_map_set(`fp', `per_bay', 0)
```

```
max_bay_ripc_map_set(`rp', `per_bay', 2)
max_bay_ripc_map_set(`cc', `per_bay', 10)
max_bay_ripc_map_set(`fp', `per_bay', 1)
```

```
min_bay_ripc_map_set(`rp', `global', 0)
min_bay_ripc_map_set(`cc', `global', 1)
min_bay_ripc_map_set(`fp', `global', 0)
```

```
max_bay_ripc_map_set(`rp', `global', 2)
max_bay_ripc_map_set(`cc', `global', 10)
max_bay_ripc_map_set(`fp', `global', 1)
```

```
dnl in elastic scope each process has its own value
max_elastic_map_set(`rp', `elastic', BPROC_ODM, 0)
max_elastic_map_set(`cc', `elastic', BPROC_ODM, 0)
max_elastic_map_set(`fp', `elastic', BPROC_ODM, 0)
```

```
max_elastic_map_set(`rp', `elastic', BPROC_WNCD, 0)
max_elastic_map_set(`cc', `elastic', BPROC_WNCD, 0)
max_elastic_map_set(`fp', `elastic', BPROC_WNCD, 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/macallanmaps.m4
```

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```
#
# March 2017, Victor Kamensky
#
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# All rights reserved
#
```

```
policy_module(polarisissustack, 1.0);
```

```
gen_require(`
    type polaris_issu_stack_t;
`)
```

```
corecmd_exec_bin(polaris_issu_stack_t)
corecmd_exec_shell(polaris_issu_stack_t)
```

```

# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_issu_stack_t)

# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_issu_stack_t)

# allow to read /proc/meminfo
kernel_read_system_state(polaris_issu_stack_t)

# work with /tmp files (/tmp/issu_stk)
type polaris_issu_stack_tmp_t;
files_tmp_file(polaris_issu_stack_tmp_t)
manage_dirs_pattern(polaris_issu_stack_t, tmp_t, polaris_issu_stack_tmp_t)
manage_files_pattern(polaris_issu_stack_t, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)
manage_fifo_files_pattern(polaris_issu_stack_t, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)
files_tmp_filetrans(polaris_issu_stack_t, polaris_issu_stack_tmp_t, file)
files_tmp_filetrans(polaris_issu_stack_t, polaris_issu_stack_tmp_t, dir, "issu_stk")

allow polaris_issu_stack_t self:capability sys_resource;

polaris_btrace_data_manage(polaris_issu_stack_t)
polaris_chasfs_manage(polaris_issu_stack_t)
polaris_cpld_read(polaris_issu_stack_t)
polaris_proc_rmonbifo_read(polaris_issu_stack_t)
polaris_rmonbifo_tmp_read(polaris_issu_stack_t)
polaris_boot_tmp_read(polaris_issu_stack_t)
polaris_tdlresolve_read(polaris_issu_stack_t)
polaris_disk_crashinfo_getattr(polaris_issu_stack_t)

allow polaris_issu_stack_t self:capability dac_override;

polaris_read_debug_conf(polaris_issu_stack_t)

polaris_flashlib_read(polaris_issu_stack_t)

allow polaris_issu_stack_t self:process setpgid;

# modify tdlresolve epoch
polaris_tdlresolve_manage(polaris_issu_stack_t)

#rsync_exec(polaris_issu_stack_t)
gen_require(
    type rsync_t;
)
rsync_entry_domtrans(polaris_issu_stack_t, rsync_t)
allow rsync_t polaris_issu_stack_t:process sigchld;

# execute rsync over over eobc: /usr/bin/os/conf/mcp_chvrf.sh eobc rsync

```

```

polaris_chvrf_domtrans(polaris_issu_stack_t)
# from chvrf.sh code executes rsync command
gen_require(
    type polaris_chvrf_t;
)
rsync_entry_domtrans(polaris_chvrf_t, rsync_t)
# LOOK AT ME: issu_stack.sh leaks fd of /tmp/issu_stk/chassis_state_evt_fifo
# for now grant access, since changing script may not be trivial
manage_fifo_files_pattern(polaris_chvrf_t, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)
write_files_pattern(polaris_chvrf_t, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)

polaris_install_engine_domtrans(polaris_issu_stack_t)
# LOOK AT ME: isse_stack.sh leak fd of /tmp/issu_stk/chassis_state_evt_fifo
# for now grant access, since changing script may not be trivial
gen_require(
    type polaris_install_engine_t;
)
read_fifo_files_pattern(polaris_install_engine_t, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)

polaris_install_tmp_read(polaris_issu_stack_t)

# access /bootflash/.installer/install_issu_state
polaris_disk_install_read(polaris_issu_stack_t)

# rm from coreutils-8.30 wants to know filesystem type
fs_getattr_tmpfs(polaris_issu_stack_t)

# reads /tmp/remote_sw_verinfo.txt
gen_require(
    type rsync_tmp_t;
)
read_files_pattern(polaris_issu_stack_t, rsync_tmp_t, rsync_tmp_t)

# watch over /tmp/tdlresolve/work
polaris_tdlresolve_watch(polaris_issu_stack_t)

#issu_stack.sh access to epoch_merge.lua,epoch_endpoint_update.lua
polaris_lua_read(polaris_issu_stack_t)

#issu_stack.sh access to /tmp/rsync_log_dir
polaris_manage_rsync_tmpllog_dir(polaris_issu_stack_t)

#issu_stack.sh access to epoch_merge.lua which merges epoch files, local.epoch and inyterchassis/.epciroh file
#luajit/usr/binos/conf/epoch_merge.lua--base-file/tmp/tdlresolve/epoch_dir/local.epoch
#--merge-file/tmp/tdlresolve/work/inter
allow polaris_issu_stack_t self:process execmem;

```

```
#access to /tmp/installer/
polaris_install_tmp_manage(polaris_issu_stack_t)
```

```
#access to /tmp/ufs/harddisk
polaris_ncd_tmp_read(polaris_issu_stack_t)
```

```
# use of errmsg.sh
polaris_script_errmsg_use(polaris_issu_stack_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisissustack.te

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```
#
# March 2017, Victor Kamensky
#
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#
```

```
policy_module(polarislsmpl, 1.0);
```

```
#####
# Polaris lsmpi
#####
```

```
type polaris_lsmpi_device_t;
dev_node(polaris_lsmpi_device_t)
```

```
# note polaris_sysfs_contdev_t is defined in kernel/devices.te, since genfscon statements
# could be only in base policy
```

```
# punt/inject working through unix domain sockets
type polaris_pi_uds_t;
files_tmp_file(polaris_pi_uds_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislsmpl.te

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```
#
# May 2017, Victor Kamensky
#
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#
```

```
## <summary>Polaris mdt_pubd Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismdtpubd.if

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#

# March 2017, Victor Kamensky

#

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#

policy\_module(polarisemd, 1.0);

```
gen_require(  
    type polaris_emd_t;  
)
```

```
polaris_btrace_data_manage(polaris_emd_t)  
polaris_crft_data_manage(polaris_emd_t)  
polaris_chasfs_manage(polaris_emd_t)  
polaris_tdlresolve_read(polaris_emd_t)  
polaris_tdlldb_list_dirs(polaris_emd_t)  
polaris_cpld_read(polaris_emd_t)  
polaris_flashlib_read(polaris_emd_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_emd_t)
```

```
polaris_cpld_dev_use(polaris_emd_t)  
dev_read_sysfs(polaris_emd_t)  
polaris_obfl_data_manage(polaris_emd_t)  
polaris_persistent_read(polaris_emd_t)
```

```
allow polaris_emd_t self:capability dac_override;
```

```
ifdef(`mcp_family',  
polaris_scooby_dev_use(polaris_emd_t)  
# read/write /sys/bus/i2c/drivers/pca9544/2-0077/reg_control and others  
dev_getattr_sysfs_fs(polaris_emd_t)  
dev_rw_sysfs(polaris_emd_t)  
)
```

```
logging_send_syslog_msg(polaris_emd_t)
```

```
ifdef(`qwlc_platform',  
# on qwlc read eeprom through i2c like /sys/devices/i2c-12/12-0050/eeprom  
dev_rw_sysfs(polaris_emd_t)  
dev_getattr_sysfs_fs(polaris_emd_t)
```

```

')

#sparrow needs access to /dev/i2c*
ifdef(`sparrow_platform',`
gen_require(`
    type polaris_cm_cc_tmpfs_t;
')
polaris_i2c_use(polaris_emd_t)
polaris_i2c_sem_manage(polaris_emd_t)
mmap_files_pattern(polaris_emd_t, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
')

ifdef(`katar_platform',`
dev_rw_sysfs(polaris_emd_t)
dev_getattr_sysfs_fs(polaris_emd_t)
')

# emd creates udp socket
allow polaris_emd_t self:udp_socket create_socket_perms;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisemd.te
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#
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#
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#

## <summary>Polaris polarisdroputil Policy Rules.</summary>

#####
## <summary>
##   Manage droputils temporary files and directories in /tmp.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_droputil_manage_tmp_files',`
    gen_require(`
        type polaris_droputil_tmp_t;
    ')

```

```
manage_files_pattern($1, polaris_droputil_tmp_t, polaris_droputil_tmp_t)
read_lnk_files_pattern($1, polaris_droputil_tmp_t, polaris_droputil_tmp_t)
')
```

```
#####
```

```
## <summary>
##   Watch droputil_tmp directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_droputil_tmp_watch`,`
gen_require(`
type polaris_droputil_tmp_t;
)
allow $1 polaris_droputil_tmp_t:dir watch;
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdroputil.if

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```
#
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#
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#
```

```
/tmp/iosd_level -- gen_context(system_u:object_r:polaris_lm_tmp_t,s0)
/tmp/stack_apcount -- gen_context(system_u:object_r:polaris_lm_tmp_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislm.fc

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```
dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
define(`polaris_ripc_service_server`,`')
define(`polaris_ripc_service_client`,`')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_ripc\_if.m4

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_ripc\_fc.m4

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dnl

dnl December 2018, Victor Kamensky

dnl

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dnl

dnl Nyquist Platform Max Bay Limits

max\_bay\_map\_set(`rp', `per\_bay', 0)

max\_bay\_map\_set(`cc', `per\_bay', 0)

max\_bay\_map\_set(`fp', `per\_bay', 0)

dnl in elastic scope each process has its own value

max\_elastic\_map\_set(`rp', `elastic', BPROC\_ODM, 0)

max\_elastic\_map\_set(`cc', `elastic', BPROC\_ODM, 0)

max\_elastic\_map\_set(`fp', `elasitc', BPROC\_ODM, 0)

max\_elastic\_map\_set(`rp', `elastic', BPROC\_WNCD, 0)

max\_elastic\_map\_set(`cc', `elastic', BPROC\_WNCD, 0)

max\_elastic\_map\_set(`fp', `elastic', BPROC\_WNCD, 0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/quake1maps.m4

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#

# Sep 2020, Sridhar C

#

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#

policy\_module(polaristlsd, 1.0);

gen\_require(`

type polaris\_tlsd\_t;

type net\_conf\_t;

`)

polaris\_btrace\_data\_manage(polaris\_tlsd\_t)

polaris\_chasfs\_manage(polaris\_tlsd\_t)

polaris\_tdlresolve\_read(polaris\_tlsd\_t)

polaris\_tdlldb\_list\_dirs(polaris\_tlsd\_t)

```

polaris_lua_read(polaris_tlscd_t)
polaris_flashlib_read(polaris_tlscd_t)
polaris_chasfs_read(polaris_tlscd_t)
polaris_cpld_read(polaris_tlscd_t)
polaris_db_tlddb_dir_use(polaris_tlscd_t)

# Related to vrf support of the socket
polaris_lfts_dev_use(polaris_tlscd_t)
polaris_socketat_nsfs_read(polaris_tlscd_t)
polaris_vrf_shm_manage(polaris_tlscd_t)

# TLSCd reads TCP/UDP ports open in VRF_GLOBAL for packet forwarding
# to IOSd or BinOS applications.
kernel_read_net_sysctls(polaris_tlscd_t)
kernel_read_network_state(polaris_tlscd_t)
kernel_search_network_sysctl(polaris_tlscd_t)
allow polaris_tlscd_t net_conf_t:dir search;
allow polaris_tlscd_t net_conf_t:file { getattr open read watch };

# UDS related sockets are:
# /tmp/tlscd/iosd_to_tlscd_0_socket
# /tmp/tlscd/tlscd_to_iosd_0_socket
# IOSd and TLSCd exchange packet over these UDS socket, allow create/bind
type polaris_tlscd_uds_t;
files_tmp_file(polaris_tlscd_uds_t)
polaris_tlscd_uds_manage(polaris_tlscd_t)
polaris_iosd_dgram_send(polaris_tlscd_t)
allow polaris_tlscd_t self:unix_dgram_socket { bind create };

# Tunnel and TLS TCP connection related related
corenet_rw_tun_tap_dev(polaris_tlscd_t)
allow polaris_tlscd_t self:tun_socket create;
corenet_tcp_connect_all_ports(polaris_tlscd_t)

# errmsg
logging_send_syslog_msg(polaris_tlscd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristlscd.te
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dnl
dnl April 2018, Victor Kamensky
dnl
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dnl
dnl
define(^polaris_database_aux',`dnl

```

```

type $1;
polaris_tdldb_type($1)
')

define(`polaris_database',`dnl
polaris_database_aux(database_label($1))
')

define(`polaris_database_process_aux_full',`dnl
gen_require(`
    type $2;
")
polaris_db_tdldb_$1_use($2)
')

define(`polaris_database_process_aux',`dnl
ifelse(database_use_map($1, $2), `', `polaris_database_process_aux_full($1, $2)')
database_use_map_set($1, $2, 1)
')

define(`polaris_database_process',`dnl
polaris_database_process_aux(database_stem($1), process_label($2))dnl
')

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_database\_db\_te.m4

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```

#
# January 2021, Gabriel Lee, Shawn Liu
#
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#

## <summary>Polaris ezmanage Policy Rules.</summary>

#####

## <summary>
## Transition to ezmanage
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#

```

```

interface(`polaris_ezmanage_domtrans`,`
gen_require(`
type polaris_ezmanage_t, polaris_ezmanage_exec_t;
`)

domtrans_pattern($1, polaris_ezmanage_exec_t, polaris_ezmanage_t)
`)

#####
## <summary>
## Read files under polaris_ezmanage_file_t label
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_manage_ezmanage_files`,`
gen_require(`
type polaris_ezmanage_file_t;
`)

manage_files_pattern($1, polaris_ezmanage_file_t , polaris_ezmanage_file_t)
read_lnk_files_pattern($1, polaris_ezmanage_file_t, polaris_ezmanage_file_t)
manage_dirs_pattern($1, polaris_ezmanage_file_t , polaris_ezmanage_file_t)
`)

#####
## <summary>
## Manage files under polaris_ezmanage_var_run_t label
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolecap/>
#
interface(`polaris_manage_ezmanage_var_run_files`,`
gen_require(`
type polaris_ezmanage_var_run_t;
`)

manage_sock_files_pattern($1, polaris_ezmanage_var_run_t, polaris_ezmanage_var_run_t);
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisezmanage.if

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#

# February 2020, Victor Kamensky

#

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#

policy\_module(polariscedge, 1.0);

# /tmp/xml handling

type polaris\_cedge\_xml\_tmp\_t;

files\_tmp\_file(polaris\_cedge\_xml\_tmp\_t)

# PLEASE LOOK AT ME very strange choice of directory name

# /tmp/tmp/ handling

type polaris\_cedge\_tmp\_t;

files\_tmp\_file(polaris\_cedge\_tmp\_t)

# /etc/viptela handling

type polaris\_cedge\_etc\_t;

files\_config\_file(polaris\_cedge\_etc\_t)

# /dev/shm handling

type polaris\_cedge\_tmpfs\_t;

files\_tmpfs\_file(polaris\_cedge\_tmpfs\_t)

# /tmp/.econfd2sysmgr-ipc handling

type polaris\_econfd2sysmgr\_tmp\_t;

files\_tmp\_file(polaris\_econfd2sysmgr\_tmp\_t)

# vconfd\_script\_reboot.sh policy

polaris\_vconfd\_domain\_template(vconfd\_reboot)

# vconfd\_script\_if\_reset.sh policy

polaris\_vconfd\_domain\_template(vconfd\_ifreset)

# vconfd\_script\_get\_config.sh policy

polaris\_vconfd\_domain\_template(vconfd\_cfg)

#####

# vconfd\_script\_\*\_stats policy

polaris\_vconfd\_domain\_template(vconfd\_history)

corecmd\_exec\_bin(polaris\_vconfd\_history\_t)

# performs 'rm /tmp/xml/Pfr/Pfr-1600801323.xml.gz'....but, do not know where

```

polaris_cedge_tmp_manage(polaris_vconfd_history_t)

# performs 'ls -rt /tmp/xml/UtdUrlf-IOX' etc.
polaris_cedge_xml_tmp_manage(polaris_vconfd_history_t)

# vconfd_script_manage_list_stats.sh performs operations on
# /tmp/vconfd/stats.XXXXXXX
polaris_vconfd_tmp_manage(polaris_vconfd_history_t)
#####
# software policy
polaris_vconfd_domain_template(vconfd_software)

# nms policy
polaris_vconfd_domain_template(vconfd_nms)

# device policy
polaris_vconfd_domain_template(vconfd_device)

# internal policy
polaris_vconfd_domain_template(vconfd_reset)

# cert policy
polaris_vconfd_domain_template(vconfd_cert)

#####
# csr policy
polaris_vconfd_domain_template(vconfd_csr)

# vconfd_script_show_csr.sh invokes vlog
# /bin/sh vlog ...
# vlog is implemented in viptela/utils/vlog using logger; that needs
# - ceate/connect unix_dgram_socket
# - read from devtmpfs of type devlog_t
# - write to sock_file of type devlog_t
# - sendto path="/run/systemd/journal/dev-log" of type unix_dgram_socket
logging_send_syslog_msg(polaris_vconfd_csr_t)
corecmd_exec_bin(polaris_vconfd_csr_t)

# reads /usr/share/viptela/server.csr
polaris_bootflash_read(polaris_vconfd_csr_t)
#####
# serial vsmart-upload vedge-upload policy
polaris_vconfd_domain_template(vconfd_serialnum)

# crash policy
polaris_vconfd_domain_template(vconfd_crash)

# aaa policy

```

```

polaris_vconfd_domain_template(vconfd_aaa)

# container policy
polaris_vconfd_domain_template(vconfd_contr)

# iox policy
polaris_vconfd_domain_template(vconfd_iox)

# utd policy
polaris_vconfd_domain_template(vconfd_utd)

# geo policy
polaris_vconfd_domain_template(vconfd_geo)

# vconfd_script_vnping.sh, vconfd_script_vping.sh, vconfd_script_vtracert.sh
# scripts policy
polaris_vconfd_domain_template(vconfd_net)

# runs ip command
sysnet_domtrans_ifconfig(polaris_vconfd_net_t)
# runs confd_cmd
corecmd_exec_bin(polaris_vconfd_net_t)

polaris_conf_d_connect(polaris_vconfd_net_t)

# /tmp/ polaris_vconfd_cert_t handling
type polaris_vconfd_cert_tmp_t;
files_tmp_file(polaris_vconfd_cert_tmp_t)
files_tmp_filetrans(polaris_vconfd_cert_t, polaris_vconfd_cert_tmp_t, { file dir })
polaris_vconfd_cert_tmp_manage(polaris_vconfd_cert_t)

# permit access to polaris_vconfd_cert_t
allow polaris_vconfd_cert_t self:capability { chown dac_override };

logging_send_syslog_msg(polaris_vconfd_cert_t)

corecmd_sbin_entry_type(polaris_vconfd_cert_t)
corecmd_shell_entry_type(polaris_vconfd_cert_t)

fs_read_nsfs_files(polaris_vconfd_cert_t)
logging_create_devlog_dev(polaris_vconfd_cert_t)

# to access the /bootflash: as the cert is stored in /bootflash:
# IOS cert related CLIs can create/store the certs in /bootflash with any
# file name(s), so allow generic access to bootflash.
polaris_bootflash_manage(polaris_vconfd_cert_t)

# manage /etc/viptela

```

```

polaris_cedge_etc_manage(polaris_vconfd_cert_t)
polaris_cedge_reset_ns(polaris_vconfd_cert_t)

# needed for accessing /tmp/chassis/local/rp/chasfs/midplane/chassis_model
polaris_chasfs_read(polaris_vconfd_cert_t)

#access to /etc/viptela
gen_require(
    type polaris_nginx_t;
)
polaris_cedge_etc_manage(polaris_nginx_t)

# For "confd_cmd", allow polaris_vconfd_cert_t, which is not a Binos process,
# to access polaris_confd_ipc_ripc_port_t.
polaris_ripc_confd_ipc_connect(polaris_vconfd_cert_t)

# permit to access /var/run/netns/default
sysnet_manage_ifconfig_run(polaris_vconfd_cert_t)

# vconfd_script_show_root_ca_cert.sh performs operations on
# /tmp/vconfd/root_cert.XXXXXX
polaris_vconfd_tmp_manage(polaris_vconfd_cert_t)
fs_getattr_tmpfs(polaris_vconfd_cert_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscedge.te
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#
# March 2017, Victor Kamensky
#
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#

## <summary>Polaris CPLD Policy Rules.</summary>

#####
# CPLD Driver policy
#####

#####
## <summary>
##   Read cpld files in /sys directory
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.

```

```

## </summary>
## </param>
#
interface(`polaris_cpld_read`,`
gen_require(`
type polaris_sysfs_cpld_t;
type sysfs_t;
`)
read_files_pattern($1, polaris_sysfs_cpld_t, polaris_sysfs_cpld_t)
# genfscon statement specifically excludes symbolic links from
# genfscon path specific entries. To workaround, let us allow
# to follow sysfs_t symbolic links
allow $1 sysfs_t:lnk_file { read getattr };
list_dirs_pattern($1, polaris_sysfs_cpld_t, polaris_sysfs_cpld_t)
`)

```

#####

```

## <summary>
## Write cpld files in /sys directory
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_cpld_write`,`
gen_require(`
type polaris_sysfs_cpld_t;
type sysfs_t;
`)
manage_files_pattern($1, polaris_sysfs_cpld_t, polaris_sysfs_cpld_t)
manage_dirs_pattern($1, polaris_sysfs_cpld_t, polaris_sysfs_cpld_t)
# genfscon statement specifically excludes symbolic links from
# genfscon path specific entries. To workaround, let us allow
# to follow sysfs_t symbolic links
allow $1 sysfs_t:lnk_file { read getattr };
`)

```

#####

```

## <summary>
## Work (read, write, ioctl) with /dev/cpld
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>

```

```

## </param>
#
interface(`polaris_cpld_dev_use`,`
gen_require(`
    type device_t;
    type polaris_cpld_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_cpld_device_t)
    read_chr_files_pattern($1, device_t, polaris_cpld_device_t)
    allow $1 polaris_cpld_device_t:chr_file map;
`)

```

```
#####
```

```

## <summary>
##   Work (read,iocctl) with /dev/cpld
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_cpld_dev_read`,`
gen_require(`
    type device_t;
    type polaris_cpld_device_t;
`)
    read_chr_files_pattern($1, device_t, polaris_cpld_device_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscpld.if

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```

#
# August 2017, Victor Kamensky
#
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#

```

```
policy_module(polariscrankshaft, 1.0);
```

```

# spa devices i.e sys_platform_module_1ng
type polaris_spa_device_t;
dev_node(polaris_spa_device_t)

```

```
# htdp device
```

```
type polaris_htdp_device_t;
dev_node(polaris_htdp_device_t)

# bde device (/dev/linux-user-bde)
type polaris_bde_device_t;
dev_node(polaris_bde_device_t)

# dash fpga device (/dev/dash_fpga)
type polaris_dash_device_t;
dev_node(polaris_dash_device_t)

# nios device (/dev/nios)
type polaris_nios_device_t;
dev_node(polaris_nios_device_t)

# qae device (/dev/qae_mem)
type polaris_qae_device_t;
dev_node(polaris_qae_device_t)

# moka fpga device (/dev/moka_fpga)
type polaris_mokafpga_device_t;
dev_node(polaris_mokafpga_device_t)

# sirius fpga device (/dev/sirius_fpga)
type polaris_siriusfpga_device_t;
dev_node(polaris_siriusfpga_device_t);

# moka nim device (/dev/nim_dm*)
type polaris_nim_dm_device_t;
dev_node(polaris_nim_dm_device_t)

# /dev/bp_async device on nanook platform
type polaris_bp_async_device_t;
dev_node(polaris_bp_async_device_t)

# /dev/sparrow_psu device on sparrow platform
type polaris_sparrow_psu_device_t;
dev_node(polaris_sparrow_psu_device_t)

# /dev/nutella_fpga device on nutella platform
type polaris_nutella_fpga_device_t;
dev_node(polaris_nutella_fpga_device_t)

# /dev/huron_fpga on Sumatra platform
type polaris_huron_device_t;
dev_node(polaris_huron_device_t)

# /dev/dplr_sumatra on Sumatra platform
```

```

type polaris_sumatra_doppler_device_t;
dev_node(polaris_sumatra_doppler_device_t)

# /tmp/sata_status for mSATA
type polaris_sata_status_tmp_t;
files_tmp_file(polaris_sata_status_tmp_t)

# TSN tsn_platform.tdl for IPCs and processes definition and it uses
# crankshaft_platform.tdl for databases definition. Unfortunately they are
# out of sync wrt BPROC_NGWC_FED - crankshaft_platform.tdl refers it but
# tsn_platform.tdl does not contain such definition.
ifdef(`tsn_platform',`
type polaris_ngwc_fed_t;
')

# Supernova supernova_platform.tdl for IPCs and processes definition and it uses
# crankshaft_platform.tdl for databases definition. Unfortunately they are
# out of sync wrt BPROC_FM_RP - crankshaft_platform.tdl refers it but
# supernova_platform.tdl does not contain such definition.
ifdef(`supernova_platform',`
type polaris_fman_rp_t;
')

# Nanook
# The Nanook platform does not support SDWAN and so the SDWAN processes are not
# defined in the nanook_platform.tdl. However, it uses the database_def's from
# the crankshaft_platform.tdl, which do have the SDWAN databases. So we need to
# add the processes to the SELinux policy
ifdef(`nanook_platform',`
type polaris_cfgmgr_t;
type polaris_cxp_t;
type polaris_dbgd_t;
type polaris_fpm_t;
type polaris_ftm_t;
type polaris_omp_t;
type polaris_sdavc_proxy_t;
type polaris_ttm_t;
type polaris_vdaemon_t;
type polaris_htx_t;
')

#####
# load_usbnet policies start
#####
# /usr/bin/conf/load_usbnet.sh is invoked to load usb network driver module
# kernel/drivers/net/usb/usbnet.ko for TSN.
#####

```

```

polaris_process_domain_template(load_usbnet)

# allow polaris_load_usbnet_t access to execute programs in system bin dirs, load
# usbnet.ko for USB network interface for TSN and allow read access
# to /sys/class/net and /proc/cmdline
# LOOK AT ME: /tmp/rp/pvp/work/inot_fifo inotifywait fd leak to child
corecmd_exec_bin(polaris_load_usbnet_t)
modutils_exec_insmodule(polaris_load_usbnet_t)
modutils_list_module_config(polaris_load_usbnet_t)
modutils_read_module_config(polaris_load_usbnet_t)
sysnet_manage_config_dirs(polaris_load_usbnet_t)
polaris_pvp_stdin_read(polaris_load_usbnet_t)
files_read_kernel_modules(polaris_load_usbnet_t)
dev_rw_sysfs(polaris_load_usbnet_t)
kernel_read_system_state(polaris_load_usbnet_t)

# stdout inherited from unconfined_service that might call it
polaris_unconfined_service_fifo_file_manage(polaris_load_usbnet_t)

# handle /tmp/load_usbnet_intf
type polaris_load_usbnet_tmp_t;
files_tmp_file(polaris_load_usbnet_tmp_t)
files_tmp_filetrans(polaris_load_usbnet_t, polaris_load_usbnet_tmp_t, file)
manage_files_pattern(polaris_load_usbnet_t, polaris_load_usbnet_tmp_t, polaris_load_usbnet_tmp_t)

# allow read of /etc/passwd
# allow map permission
# passwd_file_t:file { getattr open read };
auth_map_passwd(polaris_load_usbnet_t)

#####
# load_usbnet policies end
#####

#####
# CLI: show platform hardware msata <status/info>
#####
ifdef(^crankshaft_family',`
gen_require(
    type polaris_sysfs_ggpio_t;
    type polaris_msata_info_t;
)

polaris_utility_domain_template(msata_info)
polaris_bexecute_domain(polaris_msata_info_t, polaris_msata_info_exec_t)
# need write for pipes like "pipe:[70623]"
corecmd_exec_bin(polaris_msata_info_t)

```

```

# need write/getattr for pipes like "pipe:[71322]"
polaris_cmrp_use_fifo(polaris_msata_info_t)
fstools_domtrans(polaris_msata_info_t)
# allow use of mSATA device
polaris_nvram_manage(polaris_msata_info_t)
# allow self
allow polaris_msata_info_t self:capability sys_rawio;
allow polaris_msata_info_t self:process setfscreate;
# allow /usr/sbin/smartctl to access /sys/devices/platform/cpn-110-master/
# cpn-110-master:config-space/f2540000.sata/ata2/host1/scsi_host/host1/proc_name and
# /sys/devices/platform/cpn-110-master/cpn-110-master:config-space/f2540000.sata/
# ata2/host1/target1:0:0
read_files_pattern(polaris_msata_info_t, polaris_sysfs_ggpio_t, polaris_sysfs_ggpio_t)
dev_list_sysfs(polaris_msata_info_t)
# allow smartctl to access to /dev/sda to determine its lifetime
storage_raw_read_fixed_disk(polaris_msata_info_t)

# CLI: show platform hardware slot p[x] fan eeprom
polaris_utility_domain_template(smart_fan)
polaris_bexecute_domain(polaris_smart_fan_t, polaris_smart_fan_exec_t)
# allow /ls command
corecmd_exec_bin(polaris_smart_fan_t)
# allow read of /etc/passwd
auth_map_passwd(polaris_smart_fan_t)
# allow read of /sys/devices/platform/nios/*
dev_read_sysfs(polaris_smart_fan_t)
# need write/getattr access for pipes like "pipe:[86004]"
polaris_cmrp_use_fifo(polaris_smart_fan_t)

# sumatra and sparrow platforms need map access for "show platform hardware msata status | lifetime"
auth_map_passwd(polaris_msata_info_t)
')

ifdef(^sumatra_platform',`
# During "show platform hardware msata status | lifetime" - msata_info.sh accesses /tmp/sata_status
files_tmp_filetrans(polaris_msata_info_t, polaris_sata_status_tmp_t, file)
manage_files_pattern(polaris_msata_info_t, polaris_sata_status_tmp_t, polaris_sata_status_tmp_t)
`)

#####
# show platform hardware msata end
#####

#type for /dev/qcqmIX
type qcqm_i_device_t;
dev_node(qcqm_i_device_t);

# sm_nim_adpt device (/dev/sm_nim_adpt_XXX )

```

```
type polaris_sm_nim_adpt_device_t;
dev_node(polaris_sm_nim_adpt_device_t)
```

```
# dio device
type polaris_dio_device_t;
dev_node(polaris_dio_device_t)
```

```
# tty NMEA device
type polaris_tty_NMEA_device_t;
dev_node(polaris_tty_NMEA_device_t)
```

```
# memory blocks and gpp on Nutella-XE platform
type polaris_nutella_memory_block_p7_t;
dev_node(polaris_nutella_memory_block_p7_t)
```

```
type polaris_nutella_memory_block_p1_t;
dev_node(polaris_nutella_memory_block_p1_t)
```

```
type polaris_nutella_memory_block_boot_t;
dev_node(polaris_nutella_memory_block_boot_t)
```

```
type polaris_nutella_gp0_t;
dev_node(polaris_nutella_gp0_t)
```

```
type polaris_nutella_gpp_t;
dev_node(polaris_nutella_gpp_t)
```

```
# nim device (/dev/nim_phy)
type polaris_nim_phy_device_t;
dev_node(polaris_nim_phy_device_t)
```

```
type polaris_cwan_svr_var_run_t;
files_pid_file(polaris_cwan_svr_var_run_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscrankshaft.te

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#

## <summary>Polaris epc\_ws\_liaison Policy Rules.</summary>

```
interface(`polaris_epc_ws_liaison_tmp_read',`
```

```

gen_require(
    type polaris_epc_ws_liaison_tmp_t;
)
read_files_pattern($1, polaris_epc_ws_liaison_tmp_t, polaris_epc_ws_liaison_tmp_t)
)

#####
## <summary>
##   Allow to open, write, add_name and write /tmp/epc_ws/fed_to_wif_pipe file.
##   Allow to create and write /tmp/epc_ws dir.
## </summary>
## <param name="domain">
##   <summary>
##     epc_ws_liaison and ngwc-fed fifo_file interaction.
##   </summary>
## </param>
#
interface(`polaris_epc_ws_liaison_fifo_manage',`
    gen_require(
        type polaris_epc_ws_liaison_tmp_t;
    )
    manage_dirs_pattern($1, polaris_epc_ws_liaison_tmp_t, polaris_epc_ws_liaison_tmp_t)
    manage_fifo_files_pattern($1, polaris_epc_ws_liaison_tmp_t, polaris_epc_ws_liaison_tmp_t)
)

#####
## <summary>
##   Allow to open, read "/tmp/epc_ws/wif_to_ts_pipe" fifo file.
##
## </summary>
## <param name="domain">
##   <summary>
##     epc_ws_liaison and dumpcap fifo_file interaction.
##   </summary>
## </param>
#
interface(`polaris_epc_ws_liaison_fifo_read',`
    gen_require(
        type polaris_epc_ws_liaison_tmp_t;
    )
    read_fifo_files_pattern($1, polaris_epc_ws_liaison_tmp_t, polaris_epc_ws_liaison_tmp_t)
)

#####
## <summary>
##   Allow to write, create, unlink "/tmp/*.pcapng" temporary files.
##
## </summary>

```

```

## <param name="domain">
## <summary>
## polaris_wireshark_show fifo_file interaction.
## </summary>
## </param>
#
interface(`polaris_wireshark_show_tmp_manage`,`
    gen_require(`
        type polaris_wireshark_show_tmp_t;
    `)
    manage_files_pattern($1, polaris_wireshark_show_tmp_t, polaris_wireshark_show_tmp_t)
`)
#####
## <summary>
## Create, read, and write temporary files.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_epc_ws_liaison_tmp_file`,`
    gen_require(`
        type polaris_epc_ws_liaison_tmp_t;
    `)
    files_tmp_filetrans($1, polaris_epc_ws_liaison_tmp_t, dir, "epc_ws")
`)

```

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\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisepcwsliasion.if

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```

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#

```

```
policy_module(polariscxp, 1.0);
```

```

gen_require(`
    type polaris_cxp_t;
`)
polaris_chasfs_read(polaris_cxp_t)
polaris_cpld_read(polaris_cxp_t)

```

```

logging_send_syslog_msg(polaris_cxp_t)

# vconfd_load_shared_schemas
polaris_confd_shared_schema_read(polaris_cxp_t)

corecmd_exec_bin(polaris_cxp_t)
corecmd_exec_shell(polaris_cxp_t)
auth_use_nsswitch(polaris_cxp_t)

# work with /tmp/xml
polaris_cedge_xml_tmp_manage(polaris_cxp_t)

# work with /tmp/tmp
polaris_cedge_tmp_manage(polaris_cxp_t)

# /var/run/cxp dir and pid
type polaris_cxp_var_run_t;
files_pid_file(polaris_cxp_var_run_t)
manage_files_pattern(polaris_cxp_t, polaris_cxp_var_run_t, polaris_cxp_var_run_t)
manage_dirs_pattern(polaris_cxp_t, polaris_cxp_var_run_t, polaris_cxp_var_run_t)
manage_sock_files_pattern(polaris_cxp_t, polaris_cxp_var_run_t, polaris_cxp_var_run_t)
files_pid_filetrans(polaris_cxp_t, polaris_cxp_var_run_t, { file dir sock_file })

polaris_ttm_var_sock_write(polaris_cxp_t)

# vip_execute_nowait uses setpgid
allow polaris_cxp_t self:process setpgid;

# cxp may create vrf-based netns on demand
polaris_vrf_netns_manage(polaris_cxp_t)

# Allow /usr//cxpd manages /usr/binos/conf/global.service.conf and
# /tmp/tdlresolve/
polaris_tdlresolve_manage(polaris_cxp_t)

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* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscxp.te
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#

/usr/binos/conf/viptela-start.sh -- gen_context(system_u:object_r:polaris_cedge_start_exec_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscdgestart.fc

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dnl

dnl April 2018, Victor Kamensky

dnl

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dnl

divert(-1)

include(`polaris\_process.m4')

include(`polaris\_database\_db.m4')

include(`polaris\_database\_db\_te.m4')

include(`polaris\_max\_scope.m4')

divert(0)dnl

#

# This is a generated file! Instead of modifying this file,

# modify proper platform TDL file.

#

policy\_module(polarisplatformdbauto, 1.0);

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_database\_te.m4

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#

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#

## <summary>Polaris vman Policy Rules.</summary>

#####

## <summary>

## Read files of type polaris\_vman\_tmp\_t (e.g., /tmp/cgroup.log)

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

```

#
interface(`polaris_vman_tmp_read`,`
    gen_require(`
        type polaris_vman_tmp_t;
    `)
    read_files_pattern($1, polaris_vman_tmp_t, polaris_vman_tmp_t)
`)

#####
## <summary>
##   Write files of type polaris_vman_tmp_t (e.g., /tmp/cgroup.log)
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_vman_tmp_write`,`
    gen_require(`
        type polaris_vman_tmp_t;
    `)
    write_files_pattern($1, polaris_vman_tmp_t, polaris_vman_tmp_t)
`)

#####
## <summary>
##   Manage dir/files of type polaris_vman_tmp_t (e.g., /tmp/cgroup.log)
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_vman_tmp_manage`,`
    gen_require(`
        type polaris_vman_tmp_t;
    `)
    manage_files_pattern($1, polaris_vman_tmp_t, polaris_vman_tmp_t)
    manage_dirs_pattern($1, polaris_vman_tmp_t, polaris_vman_tmp_t)
`)

#####
## <summary>
##   Read files of type polaris_disk_vman_t (e.g., /bootflash/virtual-instance/)
## </summary>

```

```

## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_disk_vman_read`,`
    gen_require(`
        type polaris_disk_vman_t;
    `)
    read_files_pattern($1, polaris_disk_vman_t, polaris_disk_vman_t)
    read_lnk_files_pattern($1, polaris_disk_vman_t, polaris_disk_vman_t)
    list_dirs_pattern($1, polaris_disk_vman_t, polaris_disk_vman_t)
`)

#####
## <summary>
## List files of type polaris_disk_vman_t (e.g., /bootflash/virtual-instance/)
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_disk_vman_dir_list`,`
    gen_require(`
        type polaris_disk_vman_t;
        type polaris_disk_bootflash_t;
        type polaris_disk_harddisk_t;
    `)
    list_dirs_pattern($1, { polaris_disk_vman_t polaris_disk_bootflash_t polaris_disk_harddisk_t },
polaris_disk_vman_t)
`)

#####
## <summary>
## Operate on @vman_domain_socket unix socket. Look at
## vman_clnt_msg_transport_init function in vman_clnt_msg_uds.c
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_vman_use_client_socket`,`
    gen_require(`

```

```

        type polaris_vman_t;
    )
    allow $1 polaris_vman_t:unix_stream_socket connectto;
)

#####
## <summary>
##   Manage /tmp/xml/
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_vman_log_files_manage',`
optional_policy(`
    gen_require(`
        type polaris_vman_log_t;
    `)

    manage_files_pattern($1, polaris_vman_log_t,polaris_vman_log_t)
    manage_dirs_pattern($1, polaris_vman_log_t, polaris_vman_log_t)
)
)

#####
## <summary>
##   Read files of type polaris_var_vman_t (e.g., /var/virtual-instance)
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_vman_var_read',`
    gen_require(`
        type polaris_var_vman_t;
    `)
    list_dirs_pattern($1, polaris_var_vman_t, polaris_var_vman_t)
    read_files_pattern($1, polaris_var_vman_t, polaris_var_vman_t)
)

#####
## <summary>

```

```

## Write into fifo file created by vman, typical case when
## vman starts script under popen in different domain.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolecap/>
#
interface(`polaris_vman_use_fifo`,`
    gen_require(`
        type polaris_vman_t;
    `)

    read_fifo_files_pattern($1, polaris_vman_t, polaris_vman_t)
    write_fifo_files_pattern($1, polaris_vman_t, polaris_vman_t)
)

#####
## <summary>
## Check existence (getattr) of vman btrace file (i.e
## polaris_vman_bt_t)
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_vman_bt_getattr`,`
    gen_require(`
        type polaris_vman_bt_t;
        type polaris_btrace_base_t;
    `)
    getattr_files_pattern($1, polaris_btrace_base_t, polaris_vman_bt_t)
)

#####
## <summary>
## Allow domain to write to pipes connected to virtlogd_t.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_vman_virtlog_allow`,`
    gen_require(`
        type virtlogd_t;
    `)

    #allow domain to write to pipes
    allow $1 virtlogd_t:fifo_file rw_inherited_fifo_file_perms;

    #allow virtlogd_t to search dirs /var/log/libvirt/qemu
    logging_search_logs(virtlogd_t)
`)

```

```

#####
## <summary>
##   Allow polaris_vman_t to kill process from domain.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_vman_kill_process`,`
    gen_require(`
        type polaris_vman_t;
    `)
    allow polaris_vman_t $1:process sigkill;
`)

```

Found in path(s):

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```

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#

```

```

## <summary>Polaris tws Policy Rules.</summary>

```

```

#####
## <summary>
##   Allow the specified domain to manage KGV data files
## I.e /tmp/package_biv_sums.
## </summary>
## <param name="domain">

```

```

## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_kgv_data_manage`,`
    gen_require(`
        type polaris_kgv_data_t;
    `)

    manage_files_pattern($1, polaris_kgv_data_t, polaris_kgv_data_t)
    allow $1 polaris_kgv_data_t:file map;
)

#####
## <summary>
## Execute a domain transition to run code_sign_verify
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_code_verify_domtrans`,`
    gen_require(`
        type polaris_code_verify_t, polaris_code_verify_exec_t;
    `)

    domtrans_pattern($1, polaris_code_verify_exec_t, polaris_code_verify_t)
)

#####
## <summary>
## Execute a domain transition to the polaris_hw_upgrade
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_hw_upgrade_domtrans`,`
    gen_require(`
        type polaris_hw_upgrade_t, polaris_hw_upgrade_exec_t;
    `)

    corecmd_search_bin($1)
)

```

```

        domtrans_pattern($1, polaris_hw_upgrade_exec_t, polaris_hw_upgrade_t)
    ')

#####
## <summary>
##   Work (read, write, ioctl) with /dev/aikido device
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_aikido_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_aikido_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_aikido_device_t)
    read_chr_files_pattern($1, device_t, polaris_aikido_device_t)
)

```

```

#####
## <summary>
##   Execute a domain transition to the polaris_rom_upgrade
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_rom_upgrade_domtrans`,`
    gen_require(`
        type polaris_hw_upgrade_t, polaris_rom_upgrade_exec_t;
    `)

    corecmd_search_bin($1)
    domtrans_pattern($1, polaris_rom_upgrade_exec_t, polaris_rom_upgrade_t)
)

```

```

#####
## <summary>
## Write into fifo file created during rommon_upgrade
## </summary>
## <param name="domain">
## <summary>

```

```

## Domain allowed access.
## </summary>
## </param>
## <rolecap/>
#
interface(`polaris_rom_upgrade_use_fifo`,`
gen_require(`
    type polaris_rom_upgrade_t;
`)

    write_fifo_files_pattern($1, polaris_rom_upgrade_t, polaris_rom_upgrade_t)
)
#####
## <summary>
##   Work (read, write, ioctl) with /dev/scansta device
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_scansta_dev_use`,`
gen_require(`
    type device_t;
    type polaris_scansta_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_scansta_device_t)
    read_chr_files_pattern($1, device_t, polaris_scansta_device_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristws.if

No license file was found, but licenses were detected in source scan.

```

#
# March 2017, Victor Kamensky
#
# Copyright (c) 2016-2020 by Cisco Systems, Inc.
# All rights reserved
#

```

```
/tmp/.*\/chasfs(/.*)?          gen_context(system_u:object_r:polaris_chasfs_t,s0)
```

```
/tmp/chassis/local/.*\/chasfs(/.*) gen_context(system_u:object_r:polaris_chasfs_t,s0)
```

```
/tmp/chassis                  gen_context(system_u:object_r:polaris_chasfs_t,s0)
```

```
/tmp/chassis(/.*)           gen_context(system_u:object_r:polaris_chasfs_t,s0)
```

```
/tmp/*:/chasync(/.*)?      gen_context(system_u:object_r:polaris_chasync_tmp_t,s0)
/vol/harddisk/sys_report(/.*)?  gen_context(system_u:object_r:polaris_chasync_files_t,s0)
/vol/harddisk/fp_cc_crash(/.*)?  gen_context(system_u:object_r:polaris_chasync_files_t,s0)
/var/log/chasync(/.*)?      gen_context(system_u:object_r:polaris_chasync_log_t,s0)

/usr/binos/conf/chasync.sh -- gen_context(system_u:object_r:polaris_chasync_exec_t,s0)

# real path is /etc/init.d/chasfs_boottime.sh but we need to add rc.d because
# in file_contexts.subs_dist we have substitute rule for /etc/init.d/
/etc/rc.d/init.d/chasfs_boottime.sh -- gen_context(system_u:object_r:polaris_chasfs_boottime_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarischasfs.fc
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
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# All rights reserved
#
```

```
/tmp/.CRDU_COMMAND_PIPE      gen_context(system_u:object_r:polaris_crdu_pipe_tmp_t,s0)
/tmp/.CRDU_RESPONSE_PIPE     gen_context(system_u:object_r:polaris_crdu_pipe_tmp_t,s0)
```

```
/usr/binos/conf/trans_ports_helper.sh -- gen_context(system_u:object_r:polaris_trans_ports_helper_exec_t,s0)
/usr/binos/conf/trans_stats_helper.sh -- gen_context(system_u:object_r:polaris_trans_stats_helper_exec_t,s0)
/usr/binos/conf/mcp_disk_oir.sh      -- gen_context(system_u:object_r:polaris_disk_oir_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissmand.fc
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
# Copyright (c) 2016-2021 by Cisco Systems, Inc.
# All rights reserved
#
```

```
policy_module(polarissmand, 1.0);
```

```
gen_require(
    type polaris_smand_t;
    type polaris_smand_exec_t;
)
```

```
polaris_btrace_data_manage(polaris_smand_t)
```

```

polaris_crft_data_manage(polaris_smand_t)
polaris_chasfs_manage(polaris_smand_t)
polaris_tdlresolve_read(polaris_smand_t)
polaris_tdlldb_list_dirs(polaris_smand_t)
polaris_cpld_read(polaris_smand_t)
polaris_lua_read(polaris_smand_t)
polaris_flashlib_read(polaris_smand_t)

polaris_send_signal_to_bexecute(polaris_smand_t)

polaris_ripc_sman_ui_serv_connect(polaris_smand_t)

polaris_db_tdlldb_dir_use(polaris_smand_t)

type polaris_crdu_pipe_tmp_t;
files_tmp_file(polaris_crdu_pipe_tmp_t)
files_tmp_filetrans(polaris_smand_t, polaris_crdu_pipe_tmp_t, fifo_file, ".CRDU_COMMAND_PIPE")
files_tmp_filetrans(polaris_smand_t, polaris_crdu_pipe_tmp_t, fifo_file, ".CRDU_RESPONSE_PIPE")
polaris_smand_crdu_pipe_manage(polaris_smand_t)

# work with /tmp/sman files
type polaris_smand_tmp_t;
files_tmp_file(polaris_smand_tmp_t)
manage_dirs_pattern(polaris_smand_t, polaris_smand_tmp_t, polaris_smand_tmp_t)
manage_files_pattern(polaris_smand_t, polaris_smand_tmp_t, polaris_smand_tmp_t)
files_tmp_filetrans(polaris_smand_t, polaris_smand_tmp_t, { file dir })

# allow read of /etc/group
auth_use_nsswitch(polaris_smand_t)

# allow to send message to /dev/log
logging_send_syslog_msg(polaris_smand_t)

# allow objstore access
polaris_disk_objstore_read(polaris_smand_t)

# on edison smand shares sysv semaphore with iosd, why sem got initrc_t label
# is not clear.
gen_require(
    type initrc_t;
    )
allow polaris_smand_t initrc_t:sem { read write unix_write associate };

# why smand needs all these capability?
allow polaris_smand_t self:capability { dac_override chown fsetid };
allow polaris_smand_t self:capability2 block_suspend;
allow polaris_smand_t self:capability sys_resource;

```

```

# on edison smand wants to read /proc/mtd which is proc_t
# type=AVC msg=audit(1478481219.216:6): avc: denied { read } for pid=5410 comm="smand" name="mtd"
dev="proc" ino=4026535811 scontext=system_u:system_r:polaris_smand_t:s0
tcontext=system_u:object_r:proc_t:s0 tclass=file
# try to drop it latter
kernel_read_system_state(polaris_smand_t)

# on edison silent roll package is still in iso format
# type=AVC msg=audit(1478497356.229:7): avc: denied { getattr } for pid=5816 comm="smand"
path="/tmp/sw/mount/cat3k_caa-srdriver.2016-11-06_21.10_kamensky.SSA.pkg/usr/binos/lib64" dev="loop7"
ino=3456 scontext=system_u:system_r:polaris_smand_t:s0 tcontext=system_u:object_r:iso9660_t:s0 tclass=dir
gen_require(
    type iso9660_t;
)
allow polaris_smand_t iso9660_t:dir { search getattr };

polaris_dyncfg_tmp_read(polaris_smand_t)

corecmd_exec_shell(polaris_smand_t)

# CLI "Show install issu history" invokes /usr/binos/conf/install_issu_show.py which
# needs /usr/bin/python3(bin file) execution
corecmd_exec_bin(polaris_smand_t)

# smand execute install_show.sh in its own domain need read results
polaris_install_show_tmp_read(polaris_smand_t)

# during boot issu_boottime.sh calls smand to obtain some information
gen_require(
    type unconfined_service_t;
)
domtrans_pattern(unconfined_service_t, polaris_smand_exec_t, polaris_smand_t)

# system_stats_periodic function from sman/src/fru_stats.c does
# ioctl(fd, SIOCGIFADDR, &ifr); on "system" interface name, which normally
# does not exist in Polaris platforms
kernel_dontaudit_request_load_module(polaris_smand_t)

# system_stats_periodic function from sman/src/fru_stats.c does
# statfs64 for /flash directory
fs_getattr_xattr_fs(polaris_smand_t)
polaris_disk_bootflash_read_lnk(polaris_smand_t)
polaris_disk_bootflash_search(polaris_smand_t)

gen_require(
    type rsync_t;
)
# upon exec rsync inherits smand's stdout/stderr fifo files

```

```

allow rsync_t polaris_smand_t:fifo_file write;

gen_require(
    type polaris_bshell_t;
)
polaris_chasfs_read(polaris_bshell_t)
polaris_tdlresolve_read(polaris_bshell_t)

# bshell memory logs related
type polaris_memmon_tmp_files_t;
files_tmp_file(polaris_memmon_tmp_files_t)
files_tmp_filetrans(unconfined_service_t, polaris_memmon_tmp_files_t, dir, "memmon_logs")
## give bshell permissions
manage_files_pattern(polaris_bshell_t, polaris_memmon_tmp_files_t, polaris_memmon_tmp_files_t)

# sman needs to access gnmib gnoi images
optional_policy(
    polaris_gnmib_gnoi_images_read(polaris_smand_t)
)

# CLI "Show install issu history" access to "/bootflash/.installer/install_issu_history"
# and "/tmp/show_install_output.txt"
polaris_install_engine_domtrans(polaris_smand_t)
polaris_install_show_domtrans(polaris_smand_t)

# xcopy_script gets called for xcopy RPC data model
polaris_xcopy_script_domtrans(polaris_smand_t)

#
=====
=
# "sh ip ports" CLI policies, execute trans_ports_helper.sh script
polaris_utility_domain_template(trans_ports_helper)
# transit into the domain
domtrans_pattern(polaris_smand_t, polaris_trans_ports_helper_exec_t, polaris_trans_ports_helper_t)
#binary tracing fifo_file as standard output
polaris_use_btrace_fifo(polaris_trans_ports_helper_t)
# execute "tail" command
corecmd_exec_bin(polaris_trans_ports_helper_t)
corecmd_exec_shell(polaris_trans_ports_helper_t)
polaris_proc_fd_all_getattr(polaris_trans_ports_helper_t)
# getattr all polaris_domain
domain_getattr_all_domains(polaris_trans_ports_helper_t)
# run mcp_chvrf.sh without transition
polaris_exec_chvrf(polaris_trans_ports_helper_t)
fs_read_nsfs_files(polaris_trans_ports_helper_t)

# lsof options tcp reads /proc/net/raw

```

```

kernel_read_network_state(polaris_trans_ports_helper_t)
# ls access to /proc/3792/fd/6 triggers sys_ptrace capability
allow polaris_trans_ports_helper_t self:capability { sys_ptrace };

# allow file and directory read and execute permission checks
allow polaris_trans_ports_helper_t self:capability dac_read_search;

# map /etc/passwd
auth_use_nsswitch(polaris_trans_ports_helper_t)

type polaris_trans_ports_tmp_t;
files_tmp_file(polaris_trans_ports_tmp_t)
# create /tmp/trans_ports_tmp and /tmp/trans_ports_result
files_tmp_filetrans(polaris_trans_ports_helper_t, polaris_trans_ports_tmp_t, file, "show_ports_tmp")
files_tmp_filetrans(polaris_trans_ports_helper_t, polaris_trans_ports_tmp_t, file, "show_ports_result")
polaris_trans_ports_tmp_manage(polaris_trans_ports_helper_t)
# smand open and unlinks /tmp/trans_ports_tmp
polaris_trans_ports_tmp_manage(polaris_smand_t)
#
=====
=
# "show platform software kernel ... " CLI executes trans_stats_helper.sh. Need domain
# transition
#
polaris_utility_domain_template(trans_stats_helper)
# transit into the domain
domtrans_pattern(polaris_smand_t, polaris_trans_stats_helper_exec_t, polaris_trans_stats_helper_t)
#binary tracing fifo_file as standard output
polaris_use_btrace_fifo(polaris_trans_stats_helper_t)
#execute lsof in helper script
corecmd_exec_bin(polaris_trans_stats_helper_t)
corecmd_exec_shell(polaris_trans_stats_helper_t)
auth_use_nsswitch(polaris_trans_stats_helper_t)
# lsof reads /proc/*/fd/* attributes
polaris_proc_fd_all_getattr(polaris_trans_stats_helper_t)

# lsof options tcp reads /proc/net/raw
kernel_read_network_state(polaris_trans_stats_helper_t)

# lsof reads /proc/locks
kernel_read_system_state(polaris_trans_stats_helper_t)

# lsof readmnt
fs_read_nsfs_files(polaris_trans_stats_helper_t)

# ls access to /proc/3792/fd/6 triggers sys_ptrace capability
# and dac_read_search as well.
allow polaris_trans_stats_helper_t self:capability { sys_ptrace dac_read_search };

```

```

type polaris_trans_stats_tmp_t;
files_tmp_file(polaris_trans_stats_tmp_t)
# create /tmp/trans_tmp and /tmp/trans_tmp.1 to store lsof output
files_tmp_filetrans(polaris_trans_stats_helper_t, polaris_trans_stats_tmp_t, file, "trans_tmp")
files_tmp_filetrans(polaris_trans_stats_helper_t, polaris_trans_stats_tmp_t, file, "trans_tmp.1")
polaris_trans_stats_tmp_manage(polaris_trans_stats_helper_t)
# smand open and unlinks /tmp/trans_tmp
polaris_trans_stats_tmp_manage(polaris_smand_t)

# run mcp_chvrf.sh without transition
polaris_exec_chvrf(polaris_trans_stats_helper_t)

#
=====
=====
# CLI "request platform hardware filesystem harddisk: offline | online" which runs mcp_disk_oir.sh

polaris_utility_domain_template(disk_oir)
polaris_bexecute_domain(polaris_disk_oir_t, polaris_disk_oir_exec_t)

#execute lsof
corecmd_exec_bin(polaris_disk_oir_t)

# This is a CLI script that access types and /proc/pid/fd/*
polaris_proc_fd_all_getattr(polaris_disk_oir_t)

# access sysctl_rpc_t
kernel_read_rpc_sysctls(polaris_disk_oir_t)

# reads /proc/net/*
kernel_read_network_state(polaris_disk_oir_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_disk_oir_t)

# lsof readmnt
fs_read_nsfs_files(polaris_disk_oir_t)

#inherits stdin/stdout of pty opened by telnetd
telnet_use_ptys(polaris_disk_oir_t)

allow polaris_disk_oir_t self:capability { dac_read_search sys_nice sys_rawio };
allow polaris_disk_oir_t self:process { setfscreate setsched };

# execute lvm commands
lvm_domtrans(polaris_disk_oir_t)

```

```

# "ls -nP" read /dev/sda1 (/csl_p_0) and other operations when disk is destroyed.
storage_manage_fixed_disk(polaris_disk_oir_t)

# access /tmp/chassis/cpld/chasfs
polaris_chasfs_read(polaris_disk_oir_t)

#cat /tmp/chassis/cpld/chasfs/platform_type'
polaris_cpld_read(polaris_disk_oir_t)

# /bin/rm -rf /tmp/udev/etc/udev/harddisk'
fs_getattr_tmpfs(polaris_disk_oir_t)

# access /tmp/udev/etc/udev/harddisk'
polaris_udev_tmp_manage(polaris_disk_oir_t)

# /bin/mkdir -p /tmp/udev_cache/harddisk
files_tmp_filetrans(polaris_disk_oir_t, polaris_udev_tmp_files_t, dir, "udev_cache")

# systemctl start handle_mount@vol-harddisk.service, communicate with systemd
systemd_exec_systemctl(polaris_disk_oir_t)
# mount /dev/harddisk1 /vol/harddisk
mount_domtrans(polaris_disk_oir_t)

# read /proc/cmdline
kernel_read_all_proc(polaris_disk_oir_t)

# system service start/stop: /lib/systemd/system/handle_mount@.service
systemd_config_generic_services(polaris_disk_oir_t)

# /sbin/hdparm -S 0 /dev/sdb, execute hdparm in its own domain
fstools_domtrans(polaris_disk_oir_t)

ifdef(^crankshaft_family',`
    gen_require(
        type device_t;
        type udev_t;
    )
    filetrans_pattern( {udev_t polaris_disk_oir_t}, device_t, fixed_disk_device_t, lnk_file, "harddisk")
    filetrans_pattern( {udev_t polaris_disk_oir_t}, device_t, fixed_disk_device_t, lnk_file, "harddisk1")
    manage_lnk_files_pattern(polaris_disk_oir_t, fixed_disk_device_t, fixed_disk_device_t)
    # /dev/harddisk may be labeled with device_t. The "unlink" AVC denial will be fixed when it is labeled correctly

# allow /bin/dd to access /dev/nvme in blk_file
dev_nvme_blk_files_manage(polaris_disk_oir_t)

# allow /bin/cat to access /tmp/nim_xxd_present
gen_require(
    type polaris_cmrp_nim_xxd_tmp_t;

```

```
)  
read_files_pattern(polaris_disk_oir_t, polaris_cmrp_nim_xxd_tmp_t, polaris_cmrp_nim_xxd_tmp_t)  
)
```

```
#watches of /tmp/[rp|fp|cc]/pvp/process_state directory  
polaris_process_state_watch(polaris_smand_t)
```

```
ifdef(`petra_platform',`  
#allow access to polaris_cm_rp sem  
polaris_cm_rp_sem_use(polaris_smand_t)  
#allow access to /flash12/moncfg/cfg.dat  
polaris_swipedrive_file_manage(polaris_smand_t)  
#allow access to /flash6/moncfg/cfg.dat  
polaris_nvram_read(polaris_smand_t)  
)  
dmesg_domtrans(polaris_smand_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissmand.te  
No license file was found, but licenses were detected in source scan.
```

```
#  
# July 2017, Victor Kamensky  
#  
# Copyright (c) 2017-2019 by Cisco Systems, Inc.  
# All rights reserved  
#
```

```
# pci rescan shm file  
/dev/shm/rescan_shm gen_context(system_u:object_r:polaris_cm_cc_tmpfs_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismcc.fc  
No license file was found, but licenses were detected in source scan.
```

```
#  
# August 2017, Shawn Lu  
#  
# Copyright (c) 2017-2019 by Cisco Systems, Inc.  
# All rights reserved  
#
```

```
## <summary>Polaris mobilityd Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismobilityd.if
```

No license file was found, but licenses were detected in source scan.

```
#  
# September 2018, Anubha Balani  
#  
# Copyright (c) 2018-2019 by Cisco Systems, Inc.  
# All rights reserved  
#
```

```
policy_module(polarismemory, 1.0);
```

```
#####  
# Polaris memory: libmaroon and such  
#####
```

```
attribute polaris_maroon_data_domain;
```

```
type polaris_maroon_base_t;  
files_type(polaris_maroon_base_t)
```

```
typeattribute polaris_maroon_base_t polaris_maroon_data_domain;
```

```
gen_require(  
    attribute polaris_extended_domain;  
)
```

```
files_tmp_filetrans(polaris_extended_domain, polaris_maroon_base_t, dir, "maroon_stats")
```

```
type polaris_zram_device_t;  
dev_node(polaris_zram_device_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismemory.te

No license file was found, but licenses were detected in source scan.

```
#  
# March 2017, Victor Kamensky  
#  
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# All rights reserved  
#
```

```
# polarisemd file contexts place holder
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisemd.fc

No license file was found, but licenses were detected in source scan.

```

#
# March 2017, Victor Kamensky
#
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# All rights reserved
#

## <summary>Polaris nif_mgr Policy Rules.</summary>

#####
## <summary>
##   Use /tmp/sv directory and files. Currently this acts as a
##   chasfs root for information shared between the nif manager
##   and the fed.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_sv_tmp_use`,`
    gen_require(`
        type polaris_sv_tmp_t;
        type tmp_t;
    `)

    manage_dirs_pattern($1, tmp_t, polaris_sv_tmp_t)
    manage_files_pattern($1, polaris_sv_tmp_t, polaris_sv_tmp_t)
    allow $1 polaris_sv_tmp_t:dir watch;
)

#####
## <summary>
##   This is to allow creation and write to
##   doppler_sesa file under proc
##
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_proc_sesa_create_write`,`
    gen_require(`
        type polaris_proc_sesa_t;
    `)
)

```

```
setattr_files_pattern($1, polaris_proc_sesa_t, polaris_proc_sesa_t)
rw_files_pattern($1, polaris_proc_sesa_t, polaris_proc_sesa_t)
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisnifmgr.if
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
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# All rights reserved
#
```

```
/usr/binos/conf/btdecode -- gen_context(system_u:object_r:polaris_btdecode_exec_t,s0)
/usr/binos/conf/bttail -- gen_context(system_u:object_r:polaris_btdecode_exec_t,s0)
/usr/binos/conf/mcp_trace_filter.sh -- gen_context(system_u:object_r:polaris_trace_filter_exec_t,s0)
/usr/binos/conf/mcp_trace_request.sh -- gen_context(system_u:object_r:polaris_trace_request_exec_t,s0)
```

```
/usr/binos/bin/create_luid_file_db -- gen_context(system_u:object_r:polaris_create_ldb_exec_t,s0)
/tmp/btrace_luids_file.cdb.tmp -- gen_context(system_u:object_r:polaris_ldb_tmp_t,s0)
/tmp/btrace_luids_file.cdb -- gen_context(system_u:object_r:polaris_ldb_tmp_t,s0)
```

```
/tmp/cc/0/trace(/.*)? gen_context(system_u:object_r:polaris_btrace_base_t,s0)
/tmp/cc/0/trace/fifo(/.*)? gen_context(system_u:object_r:polaris_fifo_stdout_base_t,s0)
/tmp/fp/trace(/.*)? gen_context(system_u:object_r:polaris_btrace_base_t,s0)
/tmp/fp/trace/fifo gen_context(system_u:object_r:polaris_fifo_stdout_base_t,s0)
/tmp/fp/trace/fifo(/.*)? gen_context(system_u:object_r:polaris_fifo_stdout_t,s0)
/tmp/rp/trace(/.*)? gen_context(system_u:object_r:polaris_btrace_base_t,s0)
/tmp/rp/trace/fifo gen_context(system_u:object_r:polaris_fifo_stdout_base_t,s0)
/tmp/rp/trace/fifo(/.*)? gen_context(system_u:object_r:polaris_fifo_stdout_t,s0)
```

```
/dev/shm/sem\uuid_sem gen_context(system_u:object_r:polaris_btrace_tmpfs_t,s0)
/dev/shm/oper_uuid_shm gen_context(system_u:object_r:polaris_btrace_tmpfs_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbtrace.fc
No license file was found, but licenses were detected in source scan.
```

```
#
# September 2017, Victor Kamensky
#
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# All rights reserved
#
```

# polarisunconfined file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisunconfined.fc

No license file was found, but licenses were detected in source scan.

#

# February 2020, Victor Kamensky

#

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#

policy\_module(polarisdbgd, 1.0);

gen\_require(`

    type polaris\_dbgd\_t;

`)

polaris\_chasfs\_read(polaris\_dbgd\_t)

polaris\_tdlresolve\_read(polaris\_dbgd\_t)

polaris\_cpld\_read(polaris\_dbgd\_t)

logging\_send\_syslog\_msg(polaris\_dbgd\_t)

# vconfd\_load\_shared\_schemas

polaris\_confid\_shared\_schema\_read(polaris\_dbgd\_t)

# /var/run/.dbgd socket and pid

type polaris\_dbgd\_var\_run\_t;

files\_pid\_file(polaris\_dbgd\_var\_run\_t)

manage\_files\_pattern(polaris\_dbgd\_t, polaris\_dbgd\_var\_run\_t, polaris\_dbgd\_var\_run\_t)

manage\_sock\_files\_pattern(polaris\_dbgd\_t, polaris\_dbgd\_var\_run\_t, polaris\_dbgd\_var\_run\_t)

files\_pid\_filetrans(polaris\_dbgd\_t, polaris\_dbgd\_var\_run\_t, { file sock\_file })

polaris\_vdaemon\_var\_sock\_write(polaris\_dbgd\_t)

# dbgd may create vrf-based netns on demand

polaris\_vrf\_netns\_manage(polaris\_dbgd\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdbgd.te

No license file was found, but licenses were detected in source scan.

#

# March 2020, Victor Kamensky

#

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#

## <summary>Polaris JVM Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisjvm.if

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Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisinstall.te

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristws.te

No license file was found, but licenses were detected in source scan.

#

# December 2018, Victor Kamensky

#

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# All rights reserved

#

policy\_module(polarisezmancc, 1.0);

gen\_require(^

type polaris\_ezman\_cc\_t;

')

polaris\_chasfs\_read(polaris\_ezman\_cc\_t)

polaris\_cpld\_read(polaris\_ezman\_cc\_t)

polaris\_tdlresolve\_read(polaris\_ezman\_cc\_t)

polaris\_ripc\_sman\_ui\_serv\_connect(polaris\_ezman\_cc\_t)

allow polaris\_ezman\_cc\_t self:capability dac\_override;

polaris\_oob\_evfc\_dev\_use(polaris\_ezman\_cc\_t)

# LOOK AT ME by some reason relabeling of /dev/ezlkm

# device files does not work

dev\_rw\_generic\_chr\_files(polaris\_ezman\_cc\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisezmancc.te

No license file was found, but licenses were detected in source scan.

#

# Oct 2020, Xin Xiang

#

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#

policy\_module(polarisdoppler, 1.0);

# doppler interrupt device

type polaris\_dplr\_device\_t;

dev\_node(polaris\_dplr\_device\_t)

# dma mmap device

type polaris\_dmammap\_device\_t;

dev\_node(polaris\_dmammap\_device\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdoppler.te

No license file was found, but licenses were detected in source scan.

#

# Nov 2020, Swati Kumari

#

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#

## <summary>Polaris PTPD Policy Rules.</summary>

#####

## <summary>

## Work (read, write, ioctl) with /dev/blzi\_fpga

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_blzi\_dev\_use`,

gen\_require(`

type device\_t;

type polaris\_blzi\_device\_t;

`)

write\_chr\_files\_pattern(\$1, device\_t, polaris\_blzi\_device\_t)

read\_chr\_files\_pattern(\$1, device\_t, polaris\_blzi\_device\_t)

allow \$1 polaris\_blzi\_device\_t:chr\_file map;

`)

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisptpdrp.if
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2016-2019 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
## <summary>Polaris cpp_cp Policy Rules.</summary>
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscppcp.if
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2016-2020 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
policy_module(polariscppdriver, 1.0);
```

```
gen_require(^
```

```
    type polaris_cpp_driver_t;
```

```
')
```

```
polaris_btrace_data_manage(polaris_cpp_driver_t)
```

```
polaris_crft_data_manage(polaris_cpp_driver_t)
```

```
polaris_chasfs_manage(polaris_cpp_driver_t)
```

```
polaris_tdlresolve_read(polaris_cpp_driver_t)
```

```
polaris_tdlldb_list_dirs(polaris_cpp_driver_t)
```

```
polaris_cpld_read(polaris_cpp_driver_t)
```

```
polaris_flashlib_read(polaris_cpp_driver_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_cpp_driver_t)
```

```
polaris_cpp_process(polaris_cpp_driver_t)
```

```
polaris_cpp_dev_use(polaris_cpp_driver_t)
```

```
# allow read variety of system information from sysfs
```

```
# type=AVC msg=audit(1479601620.503:19): avc: denied { open } for pid=22839 comm="cpp_driver"
```

```
path="/sys/devices/system/node/node0/meminfo" dev="sysfs" ino=805
```

```
scontext=system_u:system_r:polaris_cpp_driver_t:s0 tcontext=system_u:object_r:sysfs_t:s0 tclass=file
```

```
dev_read_sysfs(polaris_cpp_driver_t)
```

```

optional_policy(
# cpp_driver reads qfp executable to look at .stabs sections that
# contains qfp code fixups, then this fixup data is passed to kernel
# module to modify qfp code.
gen_require(
    type bin_t;
    type polaris_qfp_exec_t;
)
read_files_pattern(polaris_cpp_driver_t, bin_t, polaris_qfp_exec_t)
)

polaris_icc_broken_relocations(polaris_cpp_driver_t)

# work with /dev/i2c devices
polaris_i2c_use(polaris_cpp_driver_t)

polaris_cpp_cavium_sdk_ipc_use(polaris_cpp_driver_t)

logging_send_syslog_msg(polaris_cpp_driver_t)

# LOOK AT ME: raw memory access in cavium vendor SDK
# related to octeon driver (BUG CSCvh58515)
#ifdef(^crankshaft_family',`
polaris_dev_mem_use(polaris_cpp_driver_t)
)

# allow access to /tmp/octeon-remote-lock-pci***
# This is required as part of cpp_driver access of octeon chip.
# As part of the init, call is made to octeon_remote_lock()
# which requires access to the /tmp file.
#ifdef(^crankshaft_family',`
polaris_cm_fp_tmp_filetrans(polaris_cpp_driver_t)
polaris_cm_fp_tmp_manage(polaris_cpp_driver_t)
)

# LOOK AT ME on overloard cpp_driver needs access to /dev/cavium_e
# and /dev/pcie0 devices, on lng cpp_driver needs access to
# /dev/yoda0_tree2, etc
dev_rw_generic_chr_files(polaris_cpp_driver_t)

# /dev/cpp_il on qwlc
optional_policy(
polaris_cpp_il_dev_use(polaris_cpp_driver_t)
)

#ifdef(^qwlc_platform',`
polaris_cpld_dev_use(polaris_cpp_driver_t)
)

```

```
ifdef(`katar_platform',`
polaris_cpld_dev_use(polaris_cpp_driver_t)
`)

ifdef(`mcp_family',`
polaris_cpld_dev_use(polaris_cpp_driver_t)
`)

optional_policy(`
polaris_cpp_htdp_dev_use(polaris_cpp_driver_t)
polaris_cbdma_dev_use(polaris_cpp_driver_t)
polaris_cpp_htdp_dev_use(polaris_cpp_driver_t)
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppdriver.te  
No license file was found, but licenses were detected in source scan.

```
#
# August 2017, Shawn Lu
#
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#
```

```
## <summary>Polaris odm_proxy Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisodmproxy.if  
No license file was found, but licenses were detected in source scan.

```
#
# March 2017, Victor Kamensky
#
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#
```

```
policy_module(polarisbtrace, 1.0);
```

```
#####
# Btrace policy
#####
```

```
gen_require(`
    attribute domain;
    attribute polaris_extended_domain;
    attribute unconfined_domain_type;
```

```

')

# persistent btrace files stored under btrace_data
type polaris_btrace_data_t;
files_type(polaris_btrace_data_t)

# allow btrace data file reside on persistent storage
polaris_pfile_type(polaris_btrace_data_t)

type polaris_fifo_stdout_t;
files_type(polaris_fifo_stdout_t)

type polaris_fifo_stdout_base_t;
files_type(polaris_fifo_stdout_base_t)

attribute polaris_btrace_data_domain;

type polaris_btrace_base_t;
files_type(polaris_btrace_base_t)

typeattribute polaris_btrace_base_t polaris_btrace_data_domain;
typeattribute polaris_btrace_data_t polaris_btrace_data_domain;

# is "trace" in tmp_t specific enough? Maybe we would need to change it in polaris
files_tmp_filetrans(polaris_extended_domain, polaris_btrace_base_t, dir, "trace")
# udev -> cat9k-ssd.mount -> unifiedfs_rsync_udev.sh -> btrace.sh might also create this dir
files_tmp_filetrans(udev_t, polaris_btrace_base_t, dir, "trace")

gen_require(
    attribute polaris_extended_domain;
    type polaris_pvp_tmp_t;
)
filetrans_pattern(polaris_extended_domain, polaris_pvp_tmp_t, polaris_btrace_base_t, dir, "trace")

# filetrans_pattern(polaris_extended_domain, polaris_btrace_base_t, polaris_fifo_stdout_base_t, dir, "fifo")
filetrans_pattern(domain, polaris_btrace_base_t, polaris_fifo_stdout_base_t, dir, "fifo")
filetrans_pattern(domain, polaris_fifo_stdout_base_t, polaris_fifo_stdout_t, fifo_file)
manage_dirs_pattern(polaris_extended_domain, polaris_btrace_base_t, polaris_fifo_stdout_base_t)

polaris_utility_domain_template(btdecode)

# any polaris process except iosd can execve btdecode utility to decode its own traces
gen_require(
    attribute polaris_domain;
    type polaris_iosd_t;
)
domtrans_pattern(polaris_domain - polaris_iosd_t, polaris_btdecode_exec_t, polaris_btdecode_t)

```

```

corecmd_check_exec_shell(polaris_domain - polaris_iosd_t)

# btdecode not only reads btrace files, but also creates copy of the file
polaris_btrace_data_manage_all(polaris_btdecode_t)
polaris_btrace_persistent_data_manage(polaris_btdecode_t)

polaris_use_btrace_fifo(polaris_btdecode_t)
polaris_tdlresolve_read(polaris_btdecode_t)
polaris_boot_tmp_read(polaris_btdecode_t)
polaris_lua_read(polaris_btdecode_t)
polaris_chasfs_read(polaris_btdecode_t)
polaris_cpld_read(polaris_btdecode_t)
polaris_bootflash_manage(polaris_btdecode_t)

# lua files need to read executables to retrieve btrace meta informations
files_mmap_all_files(polaris_btdecode_t)

# could be called on trace files on persistent storage
polaris_persistent_read(polaris_btdecode_t)

# need to read executables to retrieve btrace meta informations
polaris_read_exec_domain(polaris_btdecode_t)

corecmd_exec_bin(polaris_btdecode_t)
corecmd_exec_shell(polaris_btdecode_t)

# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_btdecode_t)

# executes luajit
allow polaris_btdecode_t self:process execmem;

# tmp files created by /lua/btdecode.lua in /tmp
type polaris_btdecode_tmp_t;
files_tmp_file(polaris_btdecode_tmp_t)
files_tmp_filetrans(polaris_btdecode_t, polaris_btdecode_tmp_t, file)
manage_files_pattern(polaris_btdecode_t, polaris_btdecode_tmp_t, polaris_btdecode_tmp_t)

# /lua/btdecode.lua may call create_luid_file_db on demand
polaris_create_ldb_domtrans(polaris_btdecode_t)

# in some cases it runs with telnet /dev/ptyN as stdin/stdout
# example when executed on other node, or "monitor log profile"
# command
telnet_use_ptys(polaris_btdecode_t)

# Allow btdecode to read/write /dev/pts/*
term_use_generic_ptys(polaris_btdecode_t)

```

```

polaris_btrace_ldb_tmp_read(polaris_btdecode_t)

# Allow btdecode to watch over /bootflash/tracelogs, /vol/harddisk/tracelogs and /flash2/CRASH/tracelogs
polaris_btrace_data_watch(polaris_btdecode_t)

# Allow btdecode to watch over /usr/binos/conf
files_watch_usr_dirs(polaris_btdecode_t)

#Allow btdecode to access UFS mounted directories for other members
optional_policy(
polaris_ncd_tmp_read(polaris_btdecode_t)
')

# btrace_rotate calls ftw function through create_luid_file_db utility
# that walks whole file tree in order to create btrace_luids_file.cdb
# let's have separate domain for this utility
polaris_utility_domain_template(create_ldb)

files_read_all_files(polaris_create_ldb_t)
files_getattr_all_dirs(polaris_create_ldb_t)
files_read_all_symlinks(polaris_create_ldb_t)
files_list_non_security(polaris_create_ldb_t)
files_dontaudit_list_security_dirs(polaris_create_ldb_t)
files_mmap_all_files(polaris_create_ldb_t)

# allow luid database scripts to read/write /dev/pts/*
term_use_generic_ptys(polaris_create_ldb_t)

# creates files like btrace_luids_file.cdb_20170907160108.tmp, btrace_luids_file.cdb
type polaris_ldb_tmp_t;
files_tmp_file(polaris_ldb_tmp_t)
files_tmp_filetrans(polaris_create_ldb_t, polaris_ldb_tmp_t, file)
files_tmp_filetrans(polaris_btdecode_t, polaris_ldb_tmp_t, file, "btrace_luids_file.cdb")
manage_files_pattern(polaris_create_ldb_t, polaris_ldb_tmp_t, polaris_ldb_tmp_t)
mmap_files_pattern(polaris_create_ldb_t, polaris_create_ldb_t, polaris_create_ldb_t)
polaris_use_btrace_fifo(polaris_create_ldb_t)

# in some cases it runs with telnet /dev/ptyN as stdin/stdout
# example when executed on other node, or "monitor log profile"
# command
telnet_use_ptys(polaris_create_ldb_t)

# Allowing permission to read/open/getattr/ on
# /tmp/sw/mount/*universalk9.*.SSA.pkg/usr/binos/sbin/in.telnetd
gen_require(
    type telnetd_exec_t;
)

```

```

allow polaris_btdecode_t telnetd_exec_t:file { getattr open read };

#####
# CLI: show platform software trace filter-binary wired
#  invokes.../bin/sh /usr/binos/conf/mcp_trace_filter.sh --binary wired
#####

polaris_utility_domain_template(trace_filter)

polaris_bexecute_domtrans(polaris_trace_filter_t)
polaris_bexecute_domain(polaris_trace_filter_t, polaris_trace_filter_exec_t)
# mcp_trace_filter.sh runs with telnet /dev/ptyN as
# stdin/stdout if on standby
telnet_use_ptys(polaris_trace_filter_t)

# script starts rsync with mcp_chvrf.sh
polaris_chvrf_domtrans(polaris_trace_filter_t)

allow polaris_trace_filter_t self:capability { dac_override sys_resource };

# access /tmp/sw/boot/pkginfo
#  awk -v what=^.BuildPath: $pkginfo_file ~ what { print $2 } /tmp/sw/boot/pkginfo
polaris_boot_tmp_read(polaris_trace_filter_t)

polaris_chasfs_read(polaris_trace_filter_t)
polaris_disk_bootflash_read_lnk(polaris_trace_filter_t)
polaris_disk_crashinfo_getattr(polaris_trace_filter_t)
polaris_bootflash_manage(polaris_trace_filter_t)
polaris_use_btman_fifo(polaris_trace_filter_t)
polaris_use_btrace_fifo(polaris_trace_filter_t)
polaris_smand_use_fifo(polaris_trace_filter_t)
polaris_cpld_read(polaris_trace_filter_t)
polaris_tdldb_list_dirs(polaris_trace_filter_t)
polaris_disk_harddisk_read_lnk(polaris_trace_filter_t)
kernel_read_system_state(polaris_trace_filter_t)

# read /proc/rmonbifo files such as env_var.sh
polaris_rmonbifo_tmp_read(polaris_trace_filter_t)

# df on "/" needs fs_t:filesystem getattr
fs_getattr_xattr_fs(polaris_trace_filter_t)

#Allow mcp_trace_request.sh to access UFS mounted directories for other members
optional_policy(`
polaris_ncd_tmp_read(polaris_trace_filter_t)
`)

# allow creation/access of temporary files created by bash such as

```

```

# /tmp/sh-thd-1499428203 etc
type polaris_trace_filter_tmp_t;
files_tmp_file(polaris_trace_filter_tmp_t)
files_tmp_filetrans(polaris_trace_filter_t, polaris_trace_filter_tmp_t, file)
manage_files_pattern(polaris_trace_filter_t, polaris_trace_filter_tmp_t, polaris_trace_filter_tmp_t)

# mcp_trace_filter.sh invokes: "df /tmp/rp/tlddb" and "df /dev/shm"
fs_getattr_tmpfs(polaris_trace_filter_t)

# allow accesses to polaris lua files
polaris_lua_read(polaris_trace_filter_t)

# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_trace_filter_t)

corecmd_exec_bin(polaris_trace_filter_t)

# why does btrace show command needs to write into btrace state?
polaris_btrace_data_manage_all(polaris_trace_filter_t)
polaris_btrace_persistent_data_manage(polaris_trace_filter_t)

# Allow mcp_trace_request.sh to access NFS mounted directories for other members
# such as /tmp/ufs/harddisk/10.130.1.0
fs_getattr_nfs(polaris_trace_filter_t)

#####
# CLI: monitor log profile <iwan | wireless | wired ..>
# invokes.../bin/sh /usr/bin/os/conf/mcp_trace_request.sh --operation monitor
#####

polaris_utility_domain_template(trace_request)

polaris_bexecute_domtrans(polaris_trace_request_t)
polaris_bexecute_domain(polaris_trace_request_t, polaris_trace_request_exec_t)

# Provide sys_resource capability for sys_pipe calls
allow polaris_trace_request_t self:capability sys_resource;

polaris_cpld_read(polaris_trace_request_t)
polaris_disk_crashinfo_getattr(polaris_trace_request_t)
polaris_disk_bootflash_read_Ink(polaris_trace_request_t)
polaris_disk_harddisk_read_Ink(polaris_trace_request_t)
polaris_chasfs_manage(polaris_trace_request_t)

fs_getattr_xattr_fs(polaris_trace_request_t)

# can execute hostname
hostname_exec(polaris_trace_request_t)

```

```

# can execute dmesg
dmesg_domtrans(polaris_trace_request_t)

# creates archives under /crashinfo
polaris_disk_crashinfo_manage(polaris_trace_request_t)

# can tar logs to persistent all file systems (including removable file systems)
polaris_persistent_manage(polaris_trace_request_t)
polaris_removable_manage(polaris_trace_request_t)

# read and write all btrace fifo file as standard input/output.
polaris_use_btrace_fifo(polaris_trace_request_t)

# read /proc/rmbonbifo files such as env_var.sh
polaris_rmonbifo_tmp_read(polaris_trace_request_t)

# copies /tmp/silent_roll_select.log into /crashinfo so that it can be tar'd into an
# archive
polaris_pvp_read_tmp_files(polaris_trace_request_t)

# read /tmp/sw/boot/base_pkg
polaris_boot_tmp_read(polaris_trace_request_t)

# in some cases mcp_trace_request.sh runs with telnet /dev/ptyN as
# stdin/stdout
telnet_use_ptys(polaris_trace_request_t)

# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_trace_request_t)

# read /proc/cmdline
kernel_read_system_state(polaris_trace_request_t)

corecmd_exec_bin(polaris_trace_request_t)

#ifdef(^ngwc_family',`
optional_policy(`
polaris_ncd_tmp_read(polaris_trace_request_t)
`)
`)

# mcp_trace_request.sh can read all btrace files both in temp storage
# as well as in persistent storage
polaris_btrace_data_manage_all(polaris_trace_request_t)
polaris_btrace_persistent_data_manage(polaris_trace_request_t)

# Allow mcp_trace_request.sh to create and manage temporary files under /tmp

```

```

# such as /tmp/mtr_cntrl
type polaris_trace_request_tmp_t;
files_tmp_file(polaris_trace_request_tmp_t)
files_tmp_filetrans(polaris_trace_request_t, polaris_trace_request_tmp_t, file)
manage_files_pattern(polaris_trace_request_t, polaris_trace_request_tmp_t, polaris_trace_request_tmp_t)

# Allow mcp_trace_request.sh to access NFS mounted directories for other members
# such as /tmp/ufs/crashinfo/10.1.1.1
fs_getattr_nfs(polaris_trace_request_t)

# mcp_trace_request.sh invokes dmesg, which runs in dmesg_t domain needs access
# to btrace data store
gen_require(
    type dmesg_t;
)
polaris_btrace_persistent_data_manage(dmesg_t)
# dmesg invocation in case of disk being full,
# results in writing to area of disk that
# requires the sys_resource capability.
allow dmesg_t self:capability sys_resource;

# Set /tmp/udev_ng4k.vbd.log to be under polaris_udev_tmp_files_t label
gen_require(
    type udev_t;
    type polaris_udev_tmp_files_t;
    type init_t;
)
files_tmp_filetrans(udev_t, polaris_udev_tmp_files_t, file, "udev_ng4k.vbd.log")
fs_tmpfs_filetrans(udev_t, polaris_udev_tmp_files_t, file, "udev_ng4k.vbd.log")
files_tmp_filetrans(init_t, polaris_udev_tmp_files_t, file, "udev_ng4k.vbd.log")
fs_tmpfs_filetrans(init_t, polaris_udev_tmp_files_t, file, "udev_ng4k.vbd.log")

# Add permission for mcp_trace_request to access polaris_udev_tmp_files_t files
polaris_udev_tmp_manage(polaris_trace_request_t)

# Allow ls /tmp/ufs/harddisk
optional_policy(
polaris_ncd_tmp_read(polaris_trace_request_t)
)

#Allow mcp_trace_request to get tmpfs attributes
fs_getattr_tmpfs(polaris_trace_request_t)

#allow mcp_trace_request to execute tar
allow polaris_trace_request_t self:capability { chown fowner fsetid };

#####

```

```

type polaris_btrace_tmpfs_t;
files_tmpfs_file(polaris_btrace_tmpfs_t)

# btrace semaphore created by systemd-tmpfiles needs map permission
gen_require(^
    type systemd_tmpfiles_t;
)
mmap_files_pattern(systemd_tmpfiles_t, polaris_btrace_tmpfs_t, polaris_btrace_tmpfs_t)

# Allow polaris processes to manage level config files in tracelogs persistent
# directory like /bootflash/tracelogs/level_config
type polaris_btrace_lvl_config_t;
files_type(polaris_btrace_lvl_config_t)
gen_require(^
    attribute polaris_domain;
)
polaris_btrace_lvl_config_manage(polaris_domain)

optional_policy(^
    polaris_cedge_tanman_tmp_manage(polaris_btdecode_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtrace.te

No license file was found, but licenses were detected in source scan.

```

#
# March 2017, Victor Kamensky
#
# Copyright (c) 2016-2019 by Cisco Systems, Inc.
# All rights reserved
#

/usr/binos/conf/psvp.sh -- gen_context(system_u:object_r:polaris_psvp_exec_t,s0)

/tmp/rp/psvp      -d gen_context(system_u:object_r:polaris_psvp_tmp_t,s0)
/tmp/rp/psvp/inot_fifo  -p gen_context(system_u:object_r:polaris_psvp_tmp_t,s0)
/tmp/rp/psvp/pvp\pid  -- gen_context(system_u:object_r:polaris_psvp_tmp_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispsvp.fc

No license file was found, but licenses were detected in source scan.

```

#
# July 2017, Victor Kamensky
#
# Copyright (c) 2017-2021 by Cisco Systems, Inc.
# All rights reserved

```

```

#

policy_module(polarisbexecute, 1.0);

polaris_utility_domain_template(bexecute)

polaris_utility_domain_template(chvrf)

polaris_bexecute_domtrans(polaris_chvrf_t)
polaris_chvrf_domtrans(polaris_bexecute_t)
polaris_ngio_module_session_domtrans(polaris_bexecute_t)

polaris_rom_upgrade_use_fifo(polaris_chvrf_t)

#####
# bexecute
#####
corecmd_exec_bin(polaris_bexecute_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_bexecute_t)

dev_setattr_null_dev(polaris_bexecute_t)

polaris_btrace_data_manage(polaris_bexecute_t)
polaris_crft_data_manage(polaris_bexecute_t)
polaris_chasfs_manage(polaris_bexecute_t)
polaris_cpld_read(polaris_bexecute_t)
polaris_boot_tmp_read(polaris_bexecute_t)
polaris_rmonbifo_tmp_read(polaris_bexecute_t)
polaris_proc_rmonbifo_read(polaris_bexecute_t)
polaris_dyncfg_tmp_read(polaris_bexecute_t)
polaris_read_debug_conf(polaris_bexecute_t)
polaris_tdlb_list_dirs(polaris_bexecute_t)
polaris_disk_bootflash_read_Ink(polaris_bexecute_t)
polaris_disk_harddisk_read_Ink(polaris_bexecute_t)

# open/read /tmp/sw/rp/max_elastic_bays
polaris_pvp_read_tmp_files(polaris_bexecute_t)

# search/getattr of /tmp/udev/etc/udev
polaris_udev_tmp_list_dirs(polaris_bexecute_t)

# manage files in /tmp/pman_ports
polaris_pman_manage_tmp_files(polaris_bexecute_t)

# brelay.sh does rm -rf of "/tmp/pman_ports/gdbport/9910"
# This checks tmpfs file system attributes

```

```

#
# Denial is observed after "show platform software audit summary"
# which uses breloy to trigger corresponding audit_log.sh script
fs_getattr_tmpfs(polaris_bexecute_t)

# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_bexecute_t)

# follow /tftp/inv symlink to /tmp/chassis/local/rp/chasfs/inventory
gen_require(
    type tftpd_dir_rw_t;
)
read_in_k_files_pattern(polaris_bexecute_t, tftpd_dir_rw_t, tftpd_dir_rw_t)

# tries to do mkdir -p /tmp/rp/lipc, but it should exist already so
# getattr should be sufficient
polaris_lipc_getattr(polaris_bexecute_t)

# read /proc/cmdline
kernel_read_system_state(polaris_bexecute_t)

# binary tracing fifo_file as standard output
polaris_use_btrace_fifo(polaris_bexecute_t)

# write into pipe that smand created for us with popen
polaris_smand_use_fifo(polaris_bexecute_t)

allow polaris_bexecute_t self:capability { chown setgid setuid fowner net_admin };
allow polaris_bexecute_t self:process { setpgid setcap };

# temporary files created by bexecute like /tmp/get_status_type_pkg_list.rp-1-0-0.20170707094059.out.log
type polaris_bexecute_tmp_t;
files_tmp_file(polaris_bexecute_tmp_t)
files_tmp_filetrans(polaris_bexecute_t, polaris_bexecute_tmp_t, file)
manage_files_pattern(polaris_bexecute_t, polaris_bexecute_tmp_t, polaris_bexecute_tmp_t)

# smand calls many commands through bexec.sh
polaris_smand_domain(polaris_bexecute_t, polaris_bexecute_exec_t)

# hman invokes cpp_shm_mgr_info_show.sh which in turn invokes "mktemp -p /tmp/tmppub..."
polaris_btrace_tmppub_manage(polaris_bexecute_t)

#ifdef(^nyquist_platform',`
term_use_unallocated_ttys(polaris_bexecute_t)
term_setattr_unallocated_ttys(polaris_bexecute_t)
`)

#ifdef(^radium_platform',`

```

```

polaris_load_usbnet_domtrans(polaris_bexecute_t)

# allow /usr/binos/conf/bexecute.sh for tcp_socket access
# due to "/bin/sh /usr/binos/conf/mcp_chvrf.sh eobc
# /usr/binos/conf/bexecute.sh -c /usr/binos/conf/module_direct.py
# 0 bp0 PROMETHIUM-L"
gen_require(
    type polaris_cm_rp_t;
)
allow polaris_chvrf_t polaris_cm_rp_t:tcp_socket ioctl;

# allow /usr/binos/conf/bexecute.sh for tcp_socket access
# due to "/bin/sh /usr/binos/conf/mcp_chvrf.sh eobc
# /usr/binos/conf/bexecute.sh -c /bin/mcp_pkg_wrap rp_daemons
# /usr/binos/conf/execute_co"
gen_require(
    type polaris_dmi_ncsshd_fwd_t;
)
allow polaris_chvrf_t polaris_dmi_ncsshd_fwd_t:tcp_socket ioctl;
)

ifdef(^sumatra_platform',`
polaris_load_usbnet_domtrans(polaris_bexecute_t)
)

ifdef(^nanook_platform',`
polaris_load_usbnet_domtrans(polaris_bexecute_t)
)

ifdef(^supernova_platform',`
polaris_load_usbnet_domtrans(polaris_bexecute_t)
)
polaris_issu_tmp_files_manage(polaris_bexecute_t)

# Unlike other platforms, quake platform has runin_exec_proc.sh script,
# which is started by xinetd in inetd_t domain,
# and needs to switch to bexecute domain.
# In turn, runin_exec_proc.sh then starts in.telnetd process which needs
# to run in telnetd_t domain, for the existing policies to do the rest.
ifdef(^quake_platform',`
gen_require(
    type inetd_t;
    type telnetd_t;
    type telnetd_exec_t;
)
polaris_bexecute_domtrans(inetd_t)
polaris_bexecute_domain(telnetd_t, telnetd_exec_t)
)

```

```

#####
# chvrf
#####
corecmd_exec_bin(polaris_chvrf_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_chvrf_t)

# read polaris vrf net namespace file(s) /var/run/netns/0
fs_read_nsfs_files(polaris_chvrf_t)

# write into pipe that various binos processes created for us with popen
polaris_smand_use_fifo(polaris_chvrf_t)
polaris_hman_use_fifo(polaris_chvrf_t)
polaris_dmiauthd_use_fifo(polaris_chvrf_t)
optional_policy(`
    polaris_cmrp_use_fifo(polaris_chvrf_t)
`)
optional_policy(`
    polaris_dmi_ncsshd_fwd_use_fifo(polaris_chvrf_t)
`)

# mcp_chvrf.sh may run into files created by bexecute
manage_files_pattern(polaris_chvrf_t, polaris_bexecute_tmp_t, polaris_bexecute_tmp_t)

# init may transition to polaris_chvrf_t - certain systemd units use
# mcp_chvrf.sh to start services
gen_require(`
    type init_t;
`)
polaris_chvrf_domtrans(init_t)

# mcp_chvrf.sh used to start xinetd services
gen_require(`
    type inetd_t;
    type inetd_exec_t;
`)
domtrans_pattern(polaris_chvrf_t, inetd_exec_t, inetd_t)

# in some cases mcp_chvrf needs to write into someone fifo stdout
# file, i.e when called from ncd.sh script
polaris_use_btrace_fifo(polaris_chvrf_t)

sysnet_domtrans_ifconfig(polaris_chvrf_t)

# during some execve calls chvrf needs list /tmp/etc

```

```

polaris_etc_list(polaris_chvrf_t)

ifdef(`ngwc_family',`
# /tmp/rsync_log_dir/rsync_log_XXX is stdout when mcp_chvrf.sh with rsync is called
# also /tmp/etc/installer/inot_fifo file descriptor is leaked from the script
polaris_manage_rsync_tmplog_dir(polaris_chvrf_t)
polaris_autoupgrade_tmp_manage(polaris_chvrf_t)
polaris_autoupgrade_tmp_manage(polaris_bexecute_t)
')

ifdef(`mcp_family',`
# /tmp/rsync_log_dir/rsync_log_XXX is stdout when mcp_chvrf.sh with rsync is called
# also /tmp/etc/installer/inot_fifo file descriptor is leaked from the script
polaris_manage_rsync_tmplog_dir(polaris_chvrf_t)
polaris_autoupgrade_tmp_manage(polaris_chvrf_t)
polaris_autoupgrade_tmp_manage(polaris_bexecute_t)
')

ifdef(`wlc_family',`
# /tmp/rsync_log_dir/rsync_log_XXX is stdout when mcp_chvrf.sh with rsync is called
# also /tmp/etc/installer/inot_fifo file descriptor is leaked from the script
polaris_manage_rsync_tmplog_dir(polaris_chvrf_t)
polaris_autoupgrade_tmp_manage(polaris_chvrf_t)
polaris_autoupgrade_tmp_manage(polaris_bexecute_t)
')

# For "request platform software system shell" CLI, we have:
# /bin/sh /usr/binos/conf/mcp_chvrf.sh eobc /usr/binos/conf/bexecute.sh
# -c /usr/binos/conf/mcp_record_shell.sh
# mcp_chvrf.sh needs read/write access to /dev/pts/1:
# allow polaris_chvrf_t telnetd_devpts_t:chr_file { read write };
telnet_use_ptys(polaris_chvrf_t)

ifdef(`nyquist_platform',`
term_use_unallocated_ttys(polaris_chvrf_t)
')

# some times run with unix_stream_socket as stdin
init_ioctl_stream_sockets(polaris_chvrf_t)

#####
# bexecute and mcp_chvrf.sh called from install_show.sh
#####

polaris_install_show_tmp_write(polaris_bexecute_t)
polaris_install_show_tmp_write(polaris_chvrf_t)

#####

```

```

# install_engine.sh uses brelay to re-launch install_engine in all FRUs.
# So, op_rp_switch_to_remote_loc_in_parallel() outputs to install tmp log file;
# check invocation-point for comms_run_on_remote_fru.
#####
polaris_install_tmp_log_write(polaris_bexecute_t)
polaris_install_tmp_log_write(polaris_chvrf_t)

#####
# CLI: show platform hardware cpp active infrastructure shared-memory all
# this results in hman invoking following chain of shell scrips.
# /bin/sh /usr/binos/conf/bexec.sh -c /usr/binos/conf/cpp_shm_mgr_info_show.sh
# /bin/bash /usr/binos/conf/bexecute.sh -c /usr/binos/conf/cpp_shm_mgr_info_show.sh
# /bin/sh /usr/binos/conf/cpp_shm_mgr_info_show.sh
# /bin/bash /usr/binos/conf/bshell.sh -S -c "show platform hardware qfp active \
# infrastructure shared-memory process cpp-control-process"
# All these are executed in polaris_bexecute_t domain and write access to following lipc
# is needed: /tmp/rp/lipc/shell_mgr_bshell_serv_socket
#####
polaris_sman_bshell_serv_lipc_write(polaris_bexecute_t)
polaris_tdlresolve_read(polaris_bexecute_t)
#####
# This block is policies for "sh pla so process memory r0 name iosd maps" CLI

polaris_utility_domain_template(process_maps)

polaris_bexecute_domain(polaris_process_maps_t, polaris_process_maps_exec_t)

# needs to read maps files.
domain_read_all_domains_state(polaris_process_maps_t)

# "ps" needs read access to /sys/devices/system/cpu/online
# "ps" needs read access to /proc/uptime
dev_read_sysfs(polaris_process_maps_t)
kernel_read_system_state(polaris_process_maps_t)

# need write/ioctl/getattr access for pipes like "pipe:[118396]"
polaris_hman_use_fifo(polaris_process_maps_t)

corecmd_exec_bin(polaris_process_maps_t)
#####
# This block is policies for "request platform software system shell" CLI.
# Eventually, mcp_record_shell.sh is invoked. That needs its own domain.

polaris_utility_domain_template(platform_shell)

polaris_bexecute_domain(polaris_platform_shell_t, polaris_platform_shell_exec_t)
corecmd_exec_bin(polaris_platform_shell_t)
auth_use_nsswitch(polaris_platform_shell_t)

```

```

polaris_btrace_persistent_data_manage(polaris_platform_shell_t)
polaris_cpld_read(polaris_platform_shell_t)

# cyan libraries access /tmp/sw/boot/rmonbifo/boardsubtype
polaris_rmonbifo_tmp_read(polaris_platform_shell_t)

# pglobals.sh accesses /tmp/ufs//crashinfo on cat9k platforms
optional_policy(
polaris_ncd_tmp_read(polaris_platform_shell_t)
')

# mcp_record_shell.sh needs read access to chasfs
polaris_chasfs_read(polaris_platform_shell_t)

# mcp_record_shell.sh needs read access to /dev/pts/0 (telnetd_devpts_t)
telnet_use_ptys(polaris_platform_shell_t)

#  rsync /tmp/system_shell_access_logs/$system_shell_access_log_file
#          rsync://rp0-0/chasfs/etc/system_shell_access_logs/.
gen_require(
    type rsync_t;
)
rsync_entry_domtrans(polaris_platform_shell_t, rsync_t)
allow rsync_t polaris_platform_shell_t:process sigchld;
telnet_use_ptys(rsync_t)

logging_send_syslog_msg(polaris_platform_shell_t)
init_list_pid_dirs(polaris_platform_shell_t)

#when reload command is issued, needs "kill" capability
allow polaris_platform_shell_t self:capability kill;

# brelay started from telnetd as result it inherits stdin/stdout of pty opened
# by telnetd
telnet_use_ptys(polaris_bexecute_t)
gen_require(
    type telnetd_devpts_t;
)
allow polaris_bexecute_t telnetd_devpts_t:chr_file setattr_chr_file_perms;
allow polaris_bexecute_t self:capability fsetid;

# mcp_record_shell.sh invokes:
# /usr/bin/script -q /harddisk/tracelogs/system_shell_R0*
# - needs access to /root/.bash_history
# - performs chmod on /dev/pts/2 (needs fsetid on self)
# - ioctl/open/read/write on /dev/ptmx
# - needs read/search access to /harddisk/tracelogs

```

```

type polaris_bash_tmp_t;
files_type(polaris_bash_tmp_t)
filetrans_pattern(domain, user_home_dir_t, polaris_bash_tmp_t, file, ".bash_history")
polaris_bash_tmp_manage(polaris_platform_shell_t)
allow polaris_platform_shell_t self:capability fsetid;
term_use_generic_ptys(polaris_platform_shell_t)
term_setattr_generic_ptys(polaris_platform_shell_t)
term_getattr_pty_fs(polaris_platform_shell_t)
term_use_ptmx(polaris_platform_shell_t)
polaris_disk_bootflash_read_lnk(polaris_platform_shell_t)
polaris_disk_harddisk_read_lnk(polaris_platform_shell_t)

# mcp_record_shell.sh invokes:
# mkdir /tmp/system_shell_access_logs
# create /tmp/system_shell_access_logs/SHELL_ACCESSED_*
type polaris_platform_shell_tmp_t;
files_tmp_file(polaris_platform_shell_tmp_t)
files_tmp_filetrans(polaris_platform_shell_t, polaris_platform_shell_tmp_t, dir, "system_shell_access_logs")
files_tmp_filetrans(polaris_platform_shell_t, polaris_platform_shell_tmp_t, file)
manage_dirs_pattern(polaris_platform_shell_t, polaris_platform_shell_tmp_t, polaris_platform_shell_tmp_t)
manage_files_pattern(polaris_platform_shell_t, polaris_platform_shell_tmp_t, polaris_platform_shell_tmp_t)

# read /proc/cmdline
kernel_read_system_state(polaris_platform_shell_t)

# read /tmp/sw/boot/base_pkg
polaris_boot_tmp_read(polaris_platform_shell_t)

polaris_disk_crashinfo_getattr(polaris_platform_shell_t)
#####

polaris_utility_domain_template(shell)

term_use_generic_ptys(polaris_shell_t)

domtrans_pattern(polaris_platform_shell_t, polaris_shell_exec_t, polaris_shell_t)

# reload command needs the following policies to send signal
polaris_send_signal_to_bexecute(polaris_platform_shell_t)
polaris_send_signal_to_shell(polaris_platform_shell_t)

## <desc>
## <p>
## Polaris "request platform system shell" drops into unconfined shell
## </p>
## </desc>
gen_tunable(polaris_dev_shell, true)

```

```

tunable_policy(`polaris_dev_shell`,`
    polaris_unconfined_domain(polaris_shell_t)
`)
polaris_domain_storage_unconfined_type(polaris_shell_t)

# PLEASE LOOK AT ME do we have to many ports open
# btelnet runs under bexecute in case of guest shell console access
# command like app-hosting connect appid guestshell console
allow polaris_bexecute_t self:tcp_socket { connect create setopt };
corenet_tcp_connect_unreserved_ports(polaris_bexecute_t)
sysnet_read_config(polaris_bexecute_t)

# brelay.sh does ls /tmp/ufs//crashinfo on cat9k
allow polaris_bexecute_t self:capability dac_override;
polaris_disk_crashinfo_getattr(polaris_bexecute_t)
optional_policy(`
polaris_ncd_tmp_read(polaris_bexecute_t)
`)

polaris_utility_domain_template(bconsole)

polaris_boot_tmp_read(polaris_bconsole_t)
polaris_btrace_data_manage(polaris_bconsole_t)
polaris_chasfs_read(polaris_bconsole_t)
polaris_cpld_read(polaris_bconsole_t)
polaris_proc_rmonbifo_read(polaris_bconsole_t)
polaris_rmonbifo_tmp_read(polaris_bconsole_t)
polaris_use_btrace_fifo(polaris_bconsole_t)
polaris_show_provision_temp_read(polaris_bconsole_t)

corecmd_exec_bin(polaris_bconsole_t)
polaris_bexecute_domtrans(polaris_bconsole_t)

allow polaris_bconsole_t self:process setrlimit;

# handling /var/run/agetty-iosd.pid
type polaris_bconsole_var_run_t;
files_pid_file(polaris_bconsole_var_run_t)
manage_files_pattern(polaris_bconsole_t, polaris_bconsole_var_run_t, polaris_bconsole_var_run_t)
files_pid_filetrans(polaris_bconsole_t, polaris_bconsole_var_run_t, file, "agetty-iosd.pid")

# access /dev/ttyS0
term_use_unallocated_ttys(polaris_bconsole_t)

auth_use_nsswitch(polaris_bconsole_t)

#####

```

```

# This block is policies for
# "request platform software console attach switch standby RO" CLI.
# It invokes usr/binos/conf/mcp_console_attach.sh, eventually invoking
# ioucon binary, to telnet to standby.

polaris_utility_domain_template(mcp_console_attach)
polaris_bexecute_domain(polaris_mcp_console_attach_t, polaris_mcp_console_attach_exec_t)
corecmd_exec_bin(polaris_mcp_console_attach_t)
polaris_bexecute_domtrans(polaris_mcp_console_attach_t)
allow polaris_mcp_console_attach_t self:process setpgid;
polaris_chasfs_read(polaris_mcp_console_attach_t)
telnet_use_ptys(polaris_mcp_console_attach_t)

# working with ioucon binary, invoked by usr/binos/conf/mcp_console_attach.sh
polaris_utility_domain_template(ioucon)
polaris_bexecute_domain(polaris_ioucon_t, polaris_ioucon_exec_t)

allow polaris_ioucon_t self:unix_dgram_socket create_socket_perms;
polaris_iosd_dgram_send(polaris_ioucon_t)
polaris_iosd_tmp_file_use(polaris_ioucon_t)
telnet_use_ptys(polaris_ioucon_t)

# "test platform hardware eobc ping" invokes eobc_ping.sh
# send sigchld when it is done
gen_require(^
    type ping_t;
)
allow ping_t polaris_bexecute_t:process sigchld;
polaris_confd_domtrans(polaris_bexecute_t)

# app-hosting connect appid <> console/session
# Beluga/Meraki container
ifdef(^ms_platform',`
polaris_iox_container_domtrans(polaris_bexecute_t)
`)

# Bottlenose/Meraki container
ifdef(^bottlenose_platform',`
polaris_iox_container_domtrans(polaris_bexecute_t)
`)

# IOx downloads the application package using network protocol (e.g http)
gen_require(^
    type fifo_var_run_t;
)
allow polaris_bexecute_t fifo_var_run_t:fifo_file read;

# on vxe platforms with MBRv2/MBRv4/GPTv1/GPTv3 partition layouts

```

```

# /config is file system and export_mcp_environment tries to create it anyway
polaris_getattr_disk_config(polaris_bexecute_t)

#####
# This block is policies for
# "hw-module session <x/y>" CLI.
# It invokes usr/binos/conf/ngio_module_session.sh, eventually invoking
# open64.

polaris_utility_domain_template(ngio_module_session)
polaris_bexecute_domain(polaris_ngio_module_session_t, polaris_ngio_module_session_exec_t)
corecmd_exec_bin(polaris_ngio_module_session_t)
polaris_bexecute_domtrans(polaris_ngio_module_session_t)
term_use_unallocated_ttys(polaris_ngio_module_session_t)
dev_read_sysfs(polaris_ngio_module_session_t)
allow polaris_ngio_module_session_t self:process setsched;
auth_map_passwd(polaris_ngio_module_session_t)
polaris_chasfs_read(polaris_ngio_module_session_t)
polaris_cpld_read(polaris_ngio_module_session_t)
telnet_use_ptys(polaris_ngio_module_session_t)

# work with /tmp files
type polaris_ngio_module_session_tmp_t;
files_tmp_file(polaris_ngio_module_session_tmp_t)
manage_dirs_pattern(polaris_ngio_module_session_t, tmp_t, polaris_ngio_module_session_tmp_t)
manage_files_pattern(polaris_ngio_module_session_t, polaris_ngio_module_session_tmp_t,
polaris_ngio_module_session_tmp_t)
manage_fifo_files_pattern(polaris_ngio_module_session_t, polaris_ngio_module_session_tmp_t,
polaris_ngio_module_session_tmp_t)
files_tmp_filetrans(polaris_ngio_module_session_t, polaris_ngio_module_session_tmp_t, { file dir })

# CLI: show platform software tech-support
# requires bshell execution
# /bin/bash /usr/binos/conf/bshell.sh -S -P ---- __CMD__ ---- -f
/usr/binos/conf/mcp_tech_support_command_file.txt
gen_require(
    type polaris_bshell_t;
    type polaris_bshell_exec_t;
)
domtrans_pattern(polaris_bexecute_t, polaris_bshell_exec_t, polaris_bshell_t)
# scripts stdin is set by hman and needs write/append access to pipes like pipe:[80159]
polaris_hman_use_fifo(polaris_bshell_t)
# in case of ISR4k show tech input for bshell dynamically created
polaris_tech_support_tmp_read(polaris_bshell_t)

# CLI: show software authenticity running
# this results in hman invoking below command:
# /bin/sh /usr/binos/conf/bexec.sh -c "/usr/bin/code_sign_verify show3 abcd "

```

```

polaris_code_verify_domtrans(polaris_bexecute_t)

# stdin is inherited when bexecute calls fts_client
polaris_fts_client_tmp_manage(polaris_bexecute_t)

# disk space full issue
allow polaris_platform_shell_t self:capability sys_resource;
#####
# CLI: request platform software sdwan admin-tech

# executes: /bin/sh vconfd_script_show_installerfs.sh
polaris_conf_unix_stream_stdio_use(polaris_bexecute_t)

# executes: bash bshell.sh -S -P ---- __CMD__ ---- -f /tmp/sdwan_tech_support_command_file_out.txt
polaris_conf_unix_stream_stdio_use(polaris_bshell_t)
#####

# write to /tmp/out_$(date "+%Y%m%d%H%M%S%N") for base version verification on smu install
polaris_install_tmp_write(polaris_bexecute_t)

# Nutella-XE install image
#/bin/bash /usr/binos/conf/brelay.sh -E -f rp 0 16023 -c /usr/binos/conf/install_engine.sh --operation install_commit
--isremote
polaris_conf_tmp_use_fifo(polaris_bexecute_t)

#awk -v what=^.BuildPath: $pkginfo_file ~ what { print $2 } /tmp/sw/rp/0/0/rp_security/mount/.pkginfo
polaris_read_packages_conf(polaris_bexecute_t)

dev_read_rand(polaris_bexecute_t)

# /usr/bin/python3 /usr/binos/conf/issu_client_comp.py compare -b /usr/binos/conf/base_clients.txt -n
/bootflash/installer/current_clients.txt
polaris_disk_install_read(polaris_bexecute_t)

# allow "/usr/binos/conf/module_direct.py" (bexecute_t) to execute
# "/usr/sbin/ethtool" (ifconfig_exec_t) when invoking CLI
# "show platform1 hardware subslot <slot/card> backplane statistics"
sysnet_domtrans_ifconfig(polaris_bexecute_t)
# Write into pipe created by stack_mgr
# Parent Child Relation - stack_mgr -> mcp_trace_request -> brelay (to relay output to active)
optional_policy(
    polaris_use_stack_mgr_fifo(polaris_bexecute_t)
)

polaris_etc_list(polaris_bexecute_t)
#manage /tmp/existing_rommon_info file
polaris_manage_rommon_info(polaris_capsule_upgrade_t)

```

```
#Policies for "upgrade rom-monitor capsule primary switch 1 R0" CLI
#/usr/binos/conf/bexecute.sh -c /usr/binos/conf/cat9k-primary-capsule-upgrade.sh
#cat9k-primary-capsule-upgrade.sh have to run in its own domain
```

```
polaris_utility_domain_template(capsule_upgrade)
```

```
polaris_bootflash_manage(polaris_capsule_upgrade_t)
```

```
type polaris_capsule_upgrade_log_t;
polaris_pfile_type(polaris_capsule_upgrade_log_t)
```

```
polaris_capsule_upgrade_log_use(polaris_capsule_upgrade_t)
```

```
polaris_bexecute_domain(polaris_capsule_upgrade_t, polaris_capsule_upgrade_exec_t)
```

```
polaris_bexecute_domtrans(polaris_capsule_upgrade_t)
corecmd_exec_bin(polaris_capsule_upgrade_t)
auth_use_nsswitch(polaris_capsule_upgrade_t)
polaris_chasfs_manage(polaris_capsule_upgrade_t)
polaris_cpld_read(polaris_capsule_upgrade_t)
telnet_use_ptys(polaris_capsule_upgrade_t)
```

```
polaris_rommon_device_read(polaris_capsule_upgrade_t)
```

```
# For "/bin/sh /usr/binos/conf/mcp_chvrf.sh eobc
# /usr/binos/conf/bexecute.sh -c /usr/binos/conf/install_engine.sh
# --operation install_c",
# uses unix stream socket created by confd as standard I/O.
polaris_conf_unix_stream_stdio_use(polaris_chvrf_t)
```

```
#####
# mcp_dmesg_service
#####
polaris_utility_domain_template(mcp_dmesg)
```

```
polaris_bexecute_domain(polaris_mcp_dmesg_t, polaris_mcp_dmesg_exec_t)
polaris_bexecute_domtrans(polaris_mcp_dmesg_t)
dmesg_domtrans(polaris_mcp_dmesg_t)
corecmd_exec_bin(polaris_mcp_dmesg_t)
polaris_smand_use_fifo(polaris_mcp_dmesg_t)
auth_use_nsswitch(polaris_mcp_dmesg_t)
telnet_use_ptys(polaris_mcp_dmesg_t)
```

```
# allow creation/access of temporary files like /tmp/sh-thd-1608024622
type polaris_mcp_dmesg_tmp_t;
files_type(polaris_mcp_dmesg_tmp_t)
files_tmp_file(polaris_mcp_dmesg_tmp_t)
```

```
files_tmp_filetrans(polaris_mcp_dmesg_t, polaris_mcp_dmesg_tmp_t, file)
manage_files_pattern(polaris_mcp_dmesg_t, polaris_mcp_dmesg_tmp_t, polaris_mcp_dmesg_tmp_t)
fs_getattr_tmpfs(polaris_mcp_dmesg_t)
```

```
# allowing reload_fru.sh for doing systemctl list-jobs
systemd_config_generic_services(polaris_bexecute_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbexecute.te
No license file was found, but licenses were detected in source scan.
```

```
#
# July 2017, Victor Kamensky
#
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#
```

```
/dev/quack -c gen_context(system_u:object_r:polaris_quack_device_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisquack.fc
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```

```
#
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#
```

```
policy_module(polarisdbm, 1.0);
```

```
gen_require(`
    type polaris_dbm_t;
`)
```

```
#####
# mqipc manual, one that missing in platform tdl file
#####
```

```
ifdef(`nyquist_platform',`
gen_require(`
    type polaris_bt_logger_dbm_mqipc_t;
`)
# dbm may start first and create this mqipc channel
polaris_mqipc_create_name(polaris_dbm_t, polaris_bt_logger_dbm_mqipc_t, bt_logger_dbm)
`)
```

```

polaris_btrace_data_manage(polaris_dbm_t)
polaris_crft_data_manage(polaris_dbm_t)
polaris_chasfs_manage(polaris_dbm_t)
polaris_tdlresolve_read(polaris_dbm_t)
polaris_tdlldb_list_dirs(polaris_dbm_t)
polaris_cpld_read(polaris_dbm_t)
polaris_flashlib_read(polaris_dbm_t)

polaris_ripc_sman_ui_serv_connect(polaris_dbm_t)

polaris_db_tdlldb_dir_use(polaris_dbm_t)

polaris_libeiutil_build_config_directory(polaris_dbm_t)

polaris_cfg_data_manage(polaris_dbm_t)

allow polaris_dbm_t self:capability { sys_resource };
allow polaris_dbm_t self:process setrlimit;

# dbm listen on 9090 port; in case of ultra only in tcp6
corenet_tcp_bind_websm_port(polaris_dbm_t)

polaris_dyncfg_tmp_read(polaris_dbm_t)

allow polaris_dbm_t self:capability dac_override;

# port 9090, is it exclusively wnc_mgrd port?
corenet_tcp_bind_polaris_wnc_mgrd_port(polaris_dbm_t)
allow polaris_dbm_t self:tcp_socket {shutdown};

# working dbm persistent files in /bootflash/.dbpersist
type polaris_disk_dbm_t;
polaris_disk_type(polaris_disk_dbm_t)

polaris_tdlldbpersist_setup(polaris_dbm_t)

# dbm on active syncs with /bootflash/.dbpersist on standby
# related call dbm_persist_binary_cfg_sync_to_standby()
gen_require(
    type rsync_t;
)
rsync_entry_domtrans(polaris_dbm_t, rsync_t)

polaris_tmp_tdlldb_persist_setup(polaris_dbm_t)

logging_send_syslog_msg(polaris_dbm_t)

```

corecmd\_exec\_bin(polaris\_dbm\_t)

corecmd\_exec\_shell(polaris\_dbm\_t)

# dbm needs access to "/flash1/user/.installer/install\_issu\_state"

polaris\_disk\_install\_read(polaris\_dbm\_t)

# runs over /usr/bin/rsync

corenet\_tcp\_connect\_rsync\_port(polaris\_dbm\_t)

# tar invocation in dbm code necessitates this permission

auth\_map\_passwd(polaris\_dbm\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdbm.te

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#

# Sep 2020, Sridhar C

#

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#

/tmp/tlscd(/.\*)? gen\_context(system\_u:object\_r:polaris\_tlscd\_uds\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristlscd.fc

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#

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#

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#

/tmp/fp/lipc -d gen\_context(system\_u:object\_r:polaris\_lipc\_t,s0)

/tmp/rp/lipc -d gen\_context(system\_u:object\_r:polaris\_lipc\_t,s0)

/tmp/cc/lipc -d gen\_context(system\_u:object\_r:polaris\_lipc\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislipc.fc

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#

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#

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```

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#

policy_module(polarisdmincshdfwd, 1.0);

gen_require(
    type polaris_dmi_ncsshd_fwd_t;
)

polaris_btrace_data_manage(polaris_dmi_ncsshd_fwd_t)
polaris_chasfs_manage(polaris_dmi_ncsshd_fwd_t)
polaris_tdlresolve_read(polaris_dmi_ncsshd_fwd_t)
polaris_tdlldb_list_dirs(polaris_dmi_ncsshd_fwd_t)
polaris_cpld_read(polaris_dmi_ncsshd_fwd_t)
polaris_flashlib_read(polaris_dmi_ncsshd_fwd_t)

polaris_ripc_sman_ui_serv_connect(polaris_dmi_ncsshd_fwd_t)

allow polaris_dmi_ncsshd_fwd_t self:unix_stream_socket create_stream_socket_perms;

type polaris_dmi_ncsshd_log_t;
files_tmp_file(polaris_dmi_ncsshd_log_t)
manage_files_pattern(polaris_dmi_ncsshd_fwd_t, polaris_dmi_ncsshd_log_t, polaris_dmi_ncsshd_log_t)
manage_sock_files_pattern(polaris_dmi_ncsshd_fwd_t, polaris_dmi_ncsshd_log_t, polaris_dmi_ncsshd_log_t)
files_tmp_filetrans(polaris_dmi_ncsshd_fwd_t, polaris_dmi_ncsshd_log_t, { file sock_file })

logging_send_syslog_msg(polaris_dmi_ncsshd_fwd_t)

polaris_cpld_read(polaris_dmi_ncsshd_fwd_t)

# allow to execute execute_confd_cli.sh under confd domain
polaris_confd_domtrans(polaris_dmi_ncsshd_fwd_t)

# starts bexec.sh
polaris_bexecute_domtrans(polaris_dmi_ncsshd_fwd_t)
polaris_send_signal_to_bexecute(polaris_dmi_ncsshd_fwd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmincshdfwd.te
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#

```

```
/usr/binos/conf/cyan_init\sh -- gen_context(system_u:object_r:polaris_dynconf_exec_t,s0)
/usr/binos/conf/dynconf_setup\sh -- gen_context(system_u:object_r:polaris_dynconf_exec_t,s0)
```

```
# temp files created by cyan_init.sh
```

```
/tmp/cyan/cyan.log gen_context(system_u:object_r:polaris_dynconf_log_t,s0)
/tmp/cyan/cyan_runtime.log gen_context(system_u:object_r:polaris_dynconf_log_t,s0)
```

```
/tmp/cyan(/.*)? gen_context(system_u:object_r:polaris_dynconf_tmp_t,s0)
/tmp/cyan\lock gen_context(system_u:object_r:polaris_dynconf_tmp_t,s0)
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscyan.fc
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```

```
#
```

```
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```

```
#
```

```
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```

```
# All rights reserved
```

```
#
```

```
## <summary>Polaris bexecute Policy Rules.</summary>
```

```
#####
```

```
## <summary>
```

```
## Execute bexecute in the polaris_bexecute domain.
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed to transition.
```

```
## </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_bexecute_domtrans`,`
gen_require(`
type polaris_bexecute_t, polaris_bexecute_exec_t;
`)

```

```
corecmd_search_bin($1)
domtrans_pattern($1, polaris_bexecute_exec_t, polaris_bexecute_t)
')
```

```
#####
```

```
## <summary>
```

```
## Allow domain to be started by bexecute with
```

```
## transition into specific service domain.
```

```
## </summary>
```

```
## <param name="domain">
```

```

## <summary>
## Type to be used to run utility.
## </summary>
## </param>
## <param name="entry_point">
## <summary>
## Type of the program to be used as an entry point to this domain.
## </summary>
## </param>
interface(`polaris_bexecute_domain`,`
gen_require(`
type polaris_bexecute_t;
`)

domtrans_pattern(polaris_bexecute_t, $2, $1)
`)

```

```

#####
## <summary>
## Execute mcp_chvrf.sh in the polaris_chvrf domain.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_chvrf_domtrans`,`
gen_require(`
type polaris_chvrf_t, polaris_chvrf_exec_t;
`)

corecmd_search_bin($1)
domtrans_pattern($1, polaris_chvrf_exec_t, polaris_chvrf_t)
`)

```

```

#####
## <summary>
## Execute mcp_chvrf.sh in the caller domain.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_exec_chvrf`,`

```

```

gen_require(`
    type polaris_chvrf_exec_t;
`)

corecmd_search_bin($1)
can_exec($1, polaris_chvrf_exec_t)
`)

#####
## <summary>
## Execute ngio_module_session.sh in the polaris_ngio_module_session domain
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_ngio_module_session_domtrans`,`
gen_require(`
    type polaris_ngio_module_session_t, polaris_ngio_module_session_exec_t;
`)

corecmd_search_bin($1)
domtrans_pattern($1, polaris_ngio_module_session_exec_t, polaris_ngio_module_session_t)
`)

#####
#####
## <summary>
## Allow the specified domain to send signals to any
## polaris process.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_send_signal_to_bexecute`,`
gen_require(`
    type polaris_bexecute_t;
`)

allow $1 polaris_bexecute_t:process signal_perms;
`)

#####

```

```

## <summary>
## Allow manage of polaris_bash_tmp_t.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_bash_tmp_manage`,`
    gen_require(`
        type user_home_dir_t;
        type polaris_bash_tmp_t;
    `)

    manage_dirs_pattern($1, user_home_dir_t, polaris_bash_tmp_t)
    manage_files_pattern($1, polaris_bash_tmp_t, polaris_bash_tmp_t)
)

```

```

#####
## <summary>
## Execute bexecute in the polaris_bexecute domain.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_bconsole_domtrans`,`
    gen_require(`
        type polaris_bconsole_t, polaris_bconsole_exec_t;
    `)

    corecmd_search_bin($1)
    domtrans_pattern($1, polaris_bconsole_exec_t, polaris_bconsole_t)
)

```

```

#####
## <summary>
## Send messages to ioucon unix datagram sockets.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_ioucon_dgram_send',`
    gen_require(`
        type polaris_ioucon_t;
    `)

    allow $1 polaris_ioucon_t:unix_dgram_socket sendto;
)

#####
## <summary>
##   Execute cat9k-primary-capsule-upgrade.sh , cat9k-capsule-upgrade.sh in its own domain.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_capsule_upgrade_domtrans',`
    gen_require(`
        type polaris_capsule_upgrade_t, polaris_capsule_upgrade_exec_t;
    `)

    corecmd_search_bin($1)
    domtrans_pattern($1, polaris_capsule_upgrade_exec_t, polaris_capsule_upgrade_t)
)

#####
## <summary>
##   Work(open,create,append,getattr) with /capsule-upgrade.log file
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_capsule_upgrade_log_use',`
    gen_require(`
        type polaris_disk_bootflash_t;
        type polaris_capsule_upgrade_log_t;
    `)

    allow $1 polaris_capsule_upgrade_log_t:filesystem getattr;

    filetrans_pattern($1, polaris_disk_bootflash_t, polaris_capsule_upgrade_log_t, file, "capsule-upgrade.log")
    manage_files_pattern($1, polaris_capsule_upgrade_log_t, polaris_capsule_upgrade_log_t)
    create_files_pattern($1, polaris_capsule_upgrade_log_t, polaris_capsule_upgrade_log_t)
    getattr_files_pattern($1, polaris_capsule_upgrade_log_t, polaris_capsule_upgrade_log_t)
)

```

```
append_files_pattern($1, polaris_capsule_upgrade_log_t, polaris_capsule_upgrade_log_t)
allow $1 polaris_capsule_upgrade_log_t:file map;
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbexecute.if

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```
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#
```

```
policy_module(polarisobfl, 1.0);
```

```
#####
# Obfl policy
#####
```

```
type polaris_obfl_data_t;
files_type(polaris_obfl_data_t)
```

```
gen_require(
    type init_t;
    type default_t;
    type tmp_t;
    attribute domain;
)
```

```
filetrans_pattern(domain, default_t, polaris_obfl_data_t, lnk_file, "obfl")
# edison uses obfl0 name
filetrans_pattern(domain, default_t, polaris_obfl_data_t, lnk_file, "obfl0")
# /tmp/obfl
files_tmp_filetrans(domain, polaris_obfl_data_t, dir, "obfl")
```

```
# allow obfl data file reside on persistent storage
polaris_pfile_type(polaris_obfl_data_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisobfl.te

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```
#
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```

```

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#

policy_module(polarisbtlogger, 1.0);

gen_require(
    type polaris_bt_logger_t;
)

polaris_btrace_data_manage(polaris_bt_logger_t)
polaris_crft_data_manage(polaris_bt_logger_t)
polaris_chasfs_manage(polaris_bt_logger_t)
polaris_tdlresolve_read(polaris_bt_logger_t)
polaris_tdlldb_list_dirs(polaris_bt_logger_t)
polaris_cpld_read(polaris_bt_logger_t)
polaris_flashlib_read(polaris_bt_logger_t)

polaris_ripc_sman_ui_serv_connect(polaris_bt_logger_t)

polaris_db_tdlldb_dir_use(polaris_bt_logger_t)

#####
# mqipc manual, one that missing in platform tdl file
#####

# mq.-bt_logger_dbm
type polaris_bt_logger_dbm_mqipc_t;
polaris_mqipc_type(polaris_bt_logger_dbm_mqipc_t)

# mq.-bt_logger_fman-rp
type polaris_bt_logger_fman_rp_mqipc_t;
polaris_mqipc_type(polaris_bt_logger_fman_rp_mqipc_t)

# mq.-bt_logger_iosd
type polaris_bt_logger_iosd_mqipc_t;
polaris_mqipc_type(polaris_bt_logger_iosd_mqipc_t)

# mq.-bt_logger_smd
type polaris_bt_logger_smd_mqipc_t;
polaris_mqipc_type(polaris_bt_logger_smd_mqipc_t)

polaris_mqipc_create_name(polaris_bt_logger_t, polaris_bt_logger_dbm_mqipc_t, bt_logger_dbm)
polaris_mqipc_create_name(polaris_bt_logger_t, polaris_bt_logger_fman_rp_mqipc_t, bt_logger_fman-rp)
polaris_mqipc_create_name(polaris_bt_logger_t, polaris_bt_logger_iosd_mqipc_t, bt_logger_iosd)
polaris_mqipc_create_name(polaris_bt_logger_t, polaris_bt_logger_smd_mqipc_t, bt_logger_smd)

allow polaris_bt_logger_t self:capability { dac_override };

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtlogger.te

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#

# November 2017, Victor Kamensky

#

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#

## <summary>Polaris gnmib Policy Rules.</summary>

#####

## <summary>

## Create rule for ndbutils file ".l.schema\_use.gnmib" under /var/lock/ndbutil

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_gnmib\_ndbutil\_lock`,`

gen\_require(`

type polaris\_confd\_ndbutil\_lock\_t;

type polaris\_gnmib\_ndbutil\_t;

`)

filetrans\_pattern(\$1, polaris\_confd\_ndbutil\_lock\_t, polaris\_gnmib\_ndbutil\_t, file, \$2)

manage\_files\_pattern(\$1, polaris\_confd\_ndbutil\_lock\_t, polaris\_gnmib\_ndbutil\_t)

allow \$1 polaris\_gnmib\_ndbutil\_t:file { watch watch\_reads };

)

#####

## <summary>

## Allow reading gnoi image files

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_gnmib\_gnoi\_images\_read`,`

gen\_require(`

type polaris\_gnmib\_gnoi\_images\_t;

```

    ')

    read_files_pattern($1, polaris_gnmib_gnoi_images_t, polaris_gnmib_gnoi_images_t)
    mmap_files_pattern($1, polaris_gnmib_gnoi_images_t, polaris_gnmib_gnoi_images_t)
')

#####
## <summary>
## Allow manage gnoi image files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_gnmib_gnoi_images_manage`,
    gen_require(`
        type polaris_gnmib_gnoi_images_t;
    `)

    manage_files_pattern($1, polaris_gnmib_gnoi_images_t, polaris_gnmib_gnoi_images_t)
    mmap_files_pattern($1, polaris_gnmib_gnoi_images_t, polaris_gnmib_gnoi_images_t)
')

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisgnmib.if
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```

```

#
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#
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#

```

```

policy_module(polaristdldb, 1.0);

```

```

#####
# Polaris tdldb (infra/tdllib)
#####
type polaris_tdldb_t;
polaris_tdldb_type(polaris_tdldb_t)

```

```

attribute polaris_tdldb;

```

```

# any process creating tdldb in /tmp/rp/tdldb should transition into its domain
gen_require(`

```

```

    attribute domain;
)
files_tmp_filetrans(domain, polaris_tdlldb_t, dir, "tdlldb")

# DB_DIR database is not described in TDL
type polaris_dir_db_tdlldb_t;
polaris_tdlldb_type(polaris_dir_db_tdlldb_t)

type polaris_tdlldb_persist_t;
polaris_tdlldb_type(polaris_tdlldb_persist_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristdlldb.te
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#
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#
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#

policy_module(polarislfts, 1.0);

#####
# Polaris lfts
#####

type polaris_lfts_device_t;
dev_node(polaris_lfts_device_t)

# "ip netns add foo" commands mounts "foo" under "/var/run/netns"
gen_require(^
    type ifconfig_t;
    type var_run_t;
)
allow ifconfig_t var_run_t:dir mounton;

# "ip netns exec 16 sysctl -w net.core.vrfid=16" commands mounts "16" to "/sys"
gen_require(^
    type ifconfig_t;
    type unlabeled_t;
)
allow ifconfig_t unlabeled_t:dir mounton;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarislfts.te

```

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```
#
# March 2017, Victor Kamensky
#
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#

/var/tmp/trace/nginx_access.log      gen_context(system_u:object_r:httpd_log_t, s0)
/var/tmp/trace/nginx_error.log      gen_context(system_u:object_r:httpd_log_t, s0)
/var/tmp/trace/nginx.pid            gen_context(system_u:object_r:httpd_log_t, s0)
/var/tmp/trace/nginx.lock.accept    gen_context(system_u:object_r:httpd_log_t, s0)
/var/tmp/trace/nginx.lock.cookie_tbl gen_context(system_u:object_r:httpd_log_t, s0)
/var/tmp/trace/nginx.lock.login_count gen_context(system_u:object_r:httpd_log_t, s0)
/tmp/nginx_aaa                     gen_context(system_u:object_r:polaris_nginx_tmp_t, s0)
/tmp/nginx_master                   gen_context(system_u:object_r:polaris_nginx_tmp_t, s0)
/tmp/nginx_session                  gen_context(system_u:object_r:polaris_nginx_tmp_t, s0)

#/tmp base folder for nginx apps to create temporary files.
/tmp/nginx_webui_tmp -d gen_context(system_u:object_r:polaris_nginx_tmp_t, s0)
/tmp/nginx -d gen_context(system_u:object_r:polaris_nginx_tmp_t, s0)

# Polaris WebUI Aireos translator files
/usr/binos/conf/aireos_translate_helper.sh
gen_context(system_u:object_r:polaris_nginx_webui_aireos_translator_exec_t, s0)
/var/scripts/python/aireosConfigTranslator(/.*)? --
gen_context(system_u:object_r:polaris_aireos_translator_scripts_t,s0)

/var/scripts/webui_install.sh gen_context(system_u:object_r:polaris_nginx_webui_exec_t, s0)
/usr/binos/conf/webui_upgrade_helper.sh gen_context(system_u:object_r:polaris_nginx_webui_install_exec_t, s0)
/usr/binos/conf/webui_smu_helper.sh gen_context(system_u:object_r:polaris_nginx_webui_install_exec_t, s0)
/usr/binos/conf/ra_trace_webui_helper.sh
gen_context(system_u:object_r:polaris_nginx_webui_trace_filter_exec_t, s0)
/usr/binos/conf/nginx-conf gen_context(system_u:object_r:httpd_config_t, s0)
/usr/binos/conf/nginx-conf/servers gen_context(system_u:object_r:httpd_config_t, s0)

/tmp/fts_client gen_context(system_u:object_r:polaris_fts_client_tmp_t, s0)
/usr/binos/conf/nginx_helper.sh gen_context(system_u:object_r:polaris_nginx_helper_exec_t, s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisnginx.fc
```

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```
#
# May 2017, Victor Kamensky
#
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```

```

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#

policy_module(polarismdtpubd, 1.0);

gen_require(`
    type polaris_mdt_pubd_t;
`)

polaris_btrace_data_manage(polaris_mdt_pubd_t)
polaris_chasfs_manage(polaris_mdt_pubd_t)
polaris_tdlresolve_read(polaris_mdt_pubd_t)
polaris_tdlldb_list_dirs(polaris_mdt_pubd_t)
polaris_cpld_read(polaris_mdt_pubd_t)
polaris_lua_read(polaris_mdt_pubd_t)
polaris_flashlib_read(polaris_mdt_pubd_t)

polaris_ripc_sman_ui_serv_connect(polaris_mdt_pubd_t)

polaris_db_tdlldb_dir_use(polaris_mdt_pubd_t)

#For initializing capabilities DB cfg file
polaris_libeiutil_build_config_directory(polaris_mdt_pubd_t)
polaris_cfg_data_manage(polaris_mdt_pubd_t)

optional_policy(`
# deals with /dev/shm/confd setup (schema and pid)
polaris_confd_shm_setup(polaris_mdt_pubd_t)
# and allow read shared schema
polaris_confd_shared_schema_read(polaris_mdt_pubd_t)
# read /proc/confd_pid/exe file
polaris_confd_read(polaris_mdt_pubd_t)
`)

# pubd could be configured to connect any port on DNAC
# please see cndp_setup_tcp_socket function
polaris_lfts_dev_use(polaris_mdt_pubd_t)
corenet_tcp_connect_all_ports(polaris_mdt_pubd_t)

polaris_ndbload_lock_use(polaris_mdt_pubd_t)

corenet_tcp_connect_polaris_pttcd_port(polaris_mdt_pubd_t)

corenet_tcp_bind_polaris_netconf_interceptor_port(polaris_mdt_pubd_t)
corenet_tcp_bind_all_unreserved_ports(polaris_mdt_pubd_t)

allow polaris_mdt_pubd_t self:capability { dac_override dac_read_search };

```

```

# create ndbutil directory under /var/lock
polaris_confnd_ndbutil_create(polaris_mdt_pubd_t)

polaris_ndbutil_lock_template(polaris_mdt_pubd_t, pubd, ".l.schema_use.pubd")

# grpc library through sysconf accesses /sys/devices/system/cpu
# to get number of CPUs
dev_read_sysfs(polaris_mdt_pubd_t)

# handling /tmp/rp/.telemetry and /tmp/rp/telemetry
type polaris_mdt_pubd_tmp_t;
files_tmp_file(polaris_mdt_pubd_tmp_t)
files_tmp_filetrans(polaris_mdt_pubd_t, polaris_mdt_pubd_tmp_t, dir, "telemetry")
files_tmp_filetrans(polaris_mdt_pubd_t, polaris_mdt_pubd_tmp_t, dir, ".telemetry")
gen_require(
    type tmp_t;
)
manage_dirs_pattern(polaris_mdt_pubd_t, { tmp_t polaris_mdt_pubd_tmp_t }, polaris_mdt_pubd_tmp_t)
manage_files_pattern(polaris_mdt_pubd_t, polaris_mdt_pubd_tmp_t, polaris_mdt_pubd_tmp_t)

# from evconfd_dynamic_load
polaris_confnd_shared_schema_watch(polaris_mdt_pubd_t)

# allow grpc library to shutdown socket
allow polaris_mdt_pubd_t self:tcp_socket create_socket_perms;

# allow pubd to access logging facility
logging_send_syslog_msg(polaris_mdt_pubd_t)

# enabling access to /etc/netns and /etc/hosts
polaris_namespace_set_netns_with_etc(polaris_mdt_pubd_t)
gen_require(
    type net_conf_t;
)
files_etc_filetrans(polaris_mdt_pubd_t, net_conf_t, file, "hosts")
files_etc_filetrans(polaris_mdt_pubd_t, net_conf_t, file, "resolv.conf")
files_etc_filetrans(polaris_mdt_pubd_t, net_conf_t, dir, "netns")

# allow pubd to create, modify, delete system network config files/dir
sysnet_manage_config(polaris_mdt_pubd_t)
sysnet_manage_config_dirs(polaris_mdt_pubd_t)

# allow pubd to connect socket
allow polaris_mdt_pubd_t self:udp_socket connect;

# allow pubd (object net_conf_t) to watch /etc/netns/1/resolv.conf
allow polaris_mdt_pubd_t net_conf_t:{file dir} watch;

```

```
# read access to /dev/random
dev_read_rand(polaris_mdt_pubd_t)
```

```
#DB persistence
polaris_tdlldbpersist_setup(polaris_mdt_pubd_t)
polaris_tmp_tdlldb_persist_setup(polaris_mdt_pubd_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismdtpubd.te
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```

```
#
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#
```

```
# polarisstackmgr file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisstackmgr.fc
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```

```
dnl
dnl Mar 2020, Manu Roy
dnl
dnl Copyright (c) 2020 by Cisco Systems, Inc.
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dnl
dnl Hellcat Platform Max Bay Limits
max_bay_map_set(`rp', `per_bay', 0)
max_bay_map_set(`cc', `per_bay', 0)
max_bay_map_set(`fp', `per_bay', 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/hellcatmaps.m4
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
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#
```

```
policy_module(polarisperiodic, 1.0);
```

```

gen_require(
    type polaris_periodic_t;
)

corecmd_exec_bin(polaris_periodic_t)
corecmd_exec_shell(polaris_periodic_t)

# allow to read /proc/meminfo
kernel_read_system_state(polaris_periodic_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_periodic_t)

# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_periodic_t)

# read /etc/init.d/common-utility-functions
init_read_script_files(polaris_periodic_t)

fs_getattr_all_fs(polaris_periodic_t)

# work with /tmp files
type polaris_periodic_tmp_t;
files_tmp_file(polaris_periodic_tmp_t)
manage_files_pattern(polaris_periodic_t, tmp_t, polaris_periodic_tmp_t)
files_tmp_filetrans(polaris_periodic_t, polaris_periodic_tmp_t, file)

allow polaris_periodic_t self:capability sys_resource;

polaris_btrace_data_manage(polaris_periodic_t)
polaris_chasfs_manage(polaris_periodic_t)
polaris_cpuid_read(polaris_periodic_t)
polaris_proc_rmonbifo_read(polaris_periodic_t)
polaris_rmonbifo_tmp_read(polaris_periodic_t)
polaris_boot_tmp_read(polaris_periodic_t)
polaris_read_debug_conf(polaris_periodic_t)
polaris_persistent_manage(polaris_periodic_t)

# reads /tmp/issu_proc
polaris_install_tmp_read(polaris_periodic_t)

optional_policy(
    polaris_ncd_tmp_read(polaris_periodic_t)
)
# "install add file" CLI triggers logger sending syslog messages
logging_send_syslog_msg(polaris_periodic_t)
# "install add file" CLI triggers logger executing "pidof linux_iosd-image" which
# read "/sys/devices/system/cpu/online"

```

```

dev_read_sysfs(polaris_periodic_t)
#
# /usr/bin/conf/cleanup.sh do_cleanup does packages and other umount calls
mount_domtrans(polaris_periodic_t)
polaris_sw_data_manage(polaris_periodic_t)

# determine if the installer is executing
domain_read_all_domains_state(polaris_periodic_t)

# access to /cdrom0/ when *ova image is booted during
# first instance of vwlc on ucs server
polaris_removable_read(polaris_periodic_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisperiodic.te
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#
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#
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#

/tmp/pm_post_result -- gen_context(system_u:object_r:polaris_ngwc_plfm_mgr_tmp_t,s0)
/tmp/microcode_update(/.*)? gen_context(system_u:object_r:polaris_ngwc_plfm_mgr_tmp_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwcplfmmgr.fc
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#
# February 2020, Victor Kamensky
#
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#

policy_module(polarisfpm, 1.0);

gen_require(
    type polaris_fpm_t;
)
polaris_chasfs_manage(polaris_fpm_t)
polaris_cpld_read(polaris_fpm_t)
polaris_flashlib_read(polaris_fpm_t)
polaris_tdlresolve_read(polaris_fpm_t)

```

```
polaris_ripc_sman_ui_serv_connect(polaris_fpm_t)

polaris_db_tdlb_dir_use(polaris_fpm_t)

logging_send_syslog_msg(polaris_fpm_t)

# vconfd_load_shared_schemas
polaris_confd_shared_schema_read(polaris_fpm_t)

# /var/run/.fpm socket and pid
type polaris_fpm_var_run_t;
files_pid_file(polaris_fpm_var_run_t)
manage_files_pattern(polaris_fpm_t, polaris_fpm_var_run_t, polaris_fpm_var_run_t)
manage_sock_files_pattern(polaris_fpm_t, polaris_fpm_var_run_t, polaris_fpm_var_run_t)
files_pid_filetrans(polaris_fpm_t, polaris_fpm_var_run_t, { file sock_file })

polaris_ttm_var_sock_write(polaris_fpm_t)

# fp_scaling_init calls posix_sysconf
dev_read_sysfs(polaris_fpm_t)

# PLEASE LOOK AT ME: write access to /boot/hugepage.conf
# which on ultra translates into /varied/hugepage.conf access
# But no code in polaris uses it
polaris_disk_varied_manage(polaris_fpm_t)
files_manage_boot_files(polaris_fpm_t)

polaris_cedge_tmpfs_manage(polaris_fpm_t)

polaris_fmrp2fpm_mqipc_use(polaris_fpm_t)

# manually create mqipc channel: missing in TDL
type polaris_fpm2fmrp_mqipc_t;
polaris_mqipc_type(polaris_fpm2fmrp_mqipc_t)
polaris_mqipc_create_name(polaris_fpm_t, polaris_fpm2fmrp_mqipc_t, fpm2fmrp_vulcan_mqipc)

# fp_scaling_read_core_count accesses cgroups file at
# /sys/fs/cgroup/cpuset/iosxe_control_processes/cpuset.cpus
fs_read_cgroup_files(polaris_fpm_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfpm.te

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dnl

dnl April 2018, Victor Kamensky

dnl

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```

dnl All rights reserved
dnl
divert(-1)

include(`polaris_process.m4')
include(`polaris_process_te.m4')

include(`polaris_ipc_mqipc.m4')
include(`polaris_ipc_mqipc_te.m4')

include(`polaris_ipc_ripc.m4')
include(`polaris_ipc_ripc_te.m4')

include(`polaris_ipc_lipc.m4')
include(`polaris_ipc_lipc_te.m4')

dnl Stub out non existent one
define(`polaris_websocket_service_server',`)
define(`polaris_cipc_service_server',`)

include(`polaris_max_scope.m4')

divert(0)dnl
#
# This is a generated file! Instead of modifying this file,
# modify proper platform TDL file.
#
policy_module(polarisplatformipcauto, 1.0);

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_te.m4
No license file was found, but licenses were detected in source scan.

#
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#
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#

## <summary>Polaris polarisbhytoolsd Policy Rules.</summary>

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbhytoolsd.if
No license file was found, but licenses were detected in source scan.

#
# March 2017, Victor Kamensky

```

```
#
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#

/tmp/tdlresolve_tmp(/.)*?          gen_context(system_u:object_r:polaris_tdlresolve_t,s0)
/tmp/tdlresolve(/.)*?              gen_context(system_u:object_r:polaris_tdlresolve_t,s0)

/usr/binos/conf/global.service.conf -- gen_context(system_u:object_r:polaris_global_service_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristdlresolve.fc
No license file was found, but licenses were detected in source scan.
```

```
#
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#

## <summary>Polaris ttm Policy Rules.</summary>
```

```
#####
```

```
## <summary>
##   Write ttm /var/run socket file
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_ttm_var_sock_write',`
    gen_require(`
        type polaris_ttm_t;
        type polaris_ttm_var_run_t;
        type var_run_t;
    `)
    write_sock_files_pattern($1, var_run_t, polaris_ttm_var_run_t)
    allow $1 polaris_ttm_t:unix_stream_socket { connectto };
)`)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristtm.if
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
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#
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#

## <summary>Polaris CYAN Policy Rules.</summary>
```

```
#####
```

```
## <summary>
## Execute dyncfg in the dyncfg domain.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
```

```
interface(`polaris_dyncfg_domtrans`,`
gen_require(`
type polaris_dyncfg_t, polaris_dyncfg_exec_t;
`)

corecmd_search_bin($1)
domtrans_pattern($1, polaris_dyncfg_exec_t, polaris_dyncfg_t)
')
```

```
#####
```

```
## <summary>
## Make the specified domain able to read tmp file created by
## cyan_init.sh like /tmp/cyan/mono.cdb
## </summary>
## <param name="type">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
```

```
interface(`polaris_dyncfg_tmp_read`,`
gen_require(`
type polaris_dyncfg_tmp_t;
type tmp_t;
`)

read_files_pattern($1, { tmp_t polaris_dyncfg_tmp_t }, polaris_dyncfg_tmp_t)
read_lnk_files_pattern($1, { tmp_t polaris_dyncfg_tmp_t }, polaris_dyncfg_tmp_t)
allow $1 polaris_dyncfg_tmp_t:file map;
```

```

    # need by shell that is called from luajit script
    auth_read_passwd($1)
)

#####
## <summary>
##   Make the specified domain able to manage tmp file created by
##   cyan_init.sh like /tmp/cyan.lock
## </summary>
## <param name="type">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_dyncfg_tmp_manage`,`
    gen_require(`
        type polaris_dyncfg_tmp_t;
        type tmp_t;
    `)

    manage_files_pattern($1, { tmp_t polaris_dyncfg_tmp_t }, polaris_dyncfg_tmp_t)
    manage_lnk_files_pattern($1, { tmp_t polaris_dyncfg_tmp_t }, polaris_dyncfg_tmp_t)
    allow $1 polaris_dyncfg_tmp_t:file map;
)

#####
## <summary>
##   Execute /tmp/dyncfg/N intialization within given domain.
##
##   Effectively one need this if it needs to run dyncfg_db_run_init_script,
##   dyncfg_db_init functions within domain context.
##
##   Note it involves lua execution that leads to execmem. Also lua script
##   may execve shell and some other simple bin processes like mkdir or ln.
## </summary>
## <param name="type">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_dyncfg_setup`,`
    gen_require(`
        type polaris_dyncfg_tmp_t;
        type tmp_t;
    `)
)

```

```

files_tmp_filetrans($1, polaris_dyncfg_tmp_t, dir, "cyan")
manage_dirs_pattern($1, polaris_dyncfg_tmp_t, polaris_dyncfg_tmp_t)
manage_files_pattern($1, { tmp_t polaris_dyncfg_tmp_t }, polaris_dyncfg_tmp_t)
manage_lnk_files_pattern($1, { tmp_t polaris_dyncfg_tmp_t }, polaris_dyncfg_tmp_t)
allow $1 polaris_dyncfg_tmp_t:file map;

# dyncfg_setup calls luajit and luajit needs execute JIT generated code
allow $1 self:process execmem;

# LOOK AT ME lua initialization code still uses system function call do some
# trivial things like mkdir. But because of that we need to grant shell and
# bin access to all callers of
corecmd_exec_shell($1)
corecmd_exec_bin($1)

# In chassis_attrs.lua method THIS.WIRELESS checks whether wireless package is installed
# by opening (why open, not stat) wncmgrd binary.
optional_policy(
    gen_require(
        type polaris_wncmgrd_exec_t;
        type bin_t;
    )
    read_files_pattern($1, bin_t, polaris_wncmgrd_exec_t)
)

# lua code reads /tmp/sw/boot/rmonbifo/boardtype
polaris_rmonbifo_tmp_read($1)
)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscyan.if
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#
# March 2017, Victor Kamensky
#
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#

policy_module(polariscppcp, 1.0);

gen_require(
    type polaris_cpp_cp_t;
)

polaris_btrace_data_manage(polaris_cpp_cp_t)
polaris_crft_data_manage(polaris_cpp_cp_t)

```

```

polaris_chasfs_manage(polaris_cpp_cp_t)
polaris_tdlresolve_read(polaris_cpp_cp_t)
polaris_tdlldb_list_dirs(polaris_cpp_cp_t)
polaris_cpld_read(polaris_cpp_cp_t)
polaris_flashlib_read(polaris_cpp_cp_t)

polaris_ripc_sman_ui_serv_connect(polaris_cpp_cp_t)

polaris_db_tdlldb_dir_use(polaris_cpp_cp_t)

polaris_cpp_process(polaris_cpp_cp_t)
polaris_cpp_dev_use(polaris_cpp_cp_t)

polaris_icc_broken_relocations(polaris_cpp_cp_t)

logging_send_syslog_msg(polaris_cpp_cp_t)

polaris_cpp_cavium_sdk_ipc_use(polaris_cpp_cp_t)

# LOOK AT ME: raw memory access in cavium vendor SDK
# related to octeon driver (BUG CSCvh58515)
#ifdef(`crankshaft_family',`
polaris_dev_mem_use(polaris_cpp_cp_t)
')

# cpp_palci_wallelock_time_ticks function reads /var/lock/subsys/sntp.offset
files_read_all_locks(polaris_cpp_cp_t)

# allow objstore access
polaris_disk_objstore_read(polaris_cpp_cp_t)

optional_policy(`
polaris_spa_dev_use(polaris_cpp_cp_t)
')

# handle geodb file access
polaris_geodb_files_manage(polaris_cpp_cp_t)

optional_policy(`
polaris_cbdma_dev_use(polaris_cpp_cp_t)

polaris_hkp_dev_use(polaris_cpp_cp_t)
# Access /dev/astro
polaris_astro_dev_use(polaris_cpp_cp_t)
polaris_vega_dev_use(polaris_cpp_cp_t)
')
polaris_cpp_tmpfs_manage(polaris_cpp_cp_t)
polaris_cpld_dev_use(polaris_cpp_cp_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppcp.te

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#

# July 2017, Victor Kamensky

#

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#

policy\_module(polariscppstats, 1.0);

gen\_require(`

type polaris\_cpp\_stats\_t;

`)

polaris\_btrace\_data\_manage(polaris\_cpp\_stats\_t)

polaris\_crft\_data\_manage(polaris\_cpp\_stats\_t)

polaris\_chasfs\_manage(polaris\_cpp\_stats\_t)

polaris\_tdlresolve\_read(polaris\_cpp\_stats\_t)

polaris\_tdlldb\_list\_dirs(polaris\_cpp\_stats\_t)

polaris\_cpld\_read(polaris\_cpp\_stats\_t)

polaris\_flashlib\_read(polaris\_cpp\_stats\_t)

polaris\_ripc\_sman\_ui\_serv\_connect(polaris\_cpp\_stats\_t)

polaris\_cpp\_tmp\_files\_use(polaris\_cpp\_stats\_t)

# works with /dev/cpp\_dev\_info, /dev/cpp and /dev/cpp\_kipc

polaris\_cpp\_dev\_use(polaris\_cpp\_stats\_t)

polaris\_cpp\_tmpfs\_ifdev\_rw(polaris\_cpp\_stats\_t)

polaris\_icc\_broken\_relocations(polaris\_cpp\_stats\_t)

# get attributes of /dev/shm from glibc where\_is\_shmfs function

fs\_getattr\_tmpfs(polaris\_cpp\_stats\_t)

optional\_policy(`

polaris\_cbdma\_dev\_use(polaris\_cpp\_stats\_t)

`)

polaris\_cpp\_tmpfs\_manage(polaris\_cpp\_stats\_t)

polaris\_cpld\_dev\_use(polaris\_cpp\_stats\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppstats.te

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```

#
# March 2017, Victor Kamensky
#
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#

policy_module(polarislm, 1.0);

gen_require(
    type polaris_lm_t;
)

polaris_btrace_data_manage(polaris_lm_t)
polaris_crft_data_manage(polaris_lm_t)
polaris_chasfs_manage(polaris_lm_t)
polaris_tdlresolve_read(polaris_lm_t)
polaris_tdlldb_list_dirs(polaris_lm_t)
polaris_cpld_read(polaris_lm_t)
polaris_flashlib_read(polaris_lm_t)

polaris_ripc_sman_ui_serv_connect(polaris_lm_t)

allow polaris_lm_t self:capability { dac_override };

# allow to read /proc/mtd
kernel_read_system_state(polaris_lm_t)

# work with /tmp files (/tmp/iosd_level)
type polaris_lm_tmp_t;
files_tmp_file(polaris_lm_tmp_t)
files_tmp_filetrans(polaris_lm_t, polaris_lm_tmp_t, file, "iosd_level")
files_tmp_filetrans(polaris_lm_t, polaris_lm_tmp_t, file, "stack_apcount")
manage_files_pattern(polaris_lm_t, tmp_t, polaris_lm_tmp_t)

polaris_dyncfg_tmp_read(polaris_lm_t)

polaris_disk_license_manage(polaris_lm_t)

polaris_disk_csl_manage(polaris_lm_t)

logging_send_syslog_msg(polaris_lm_t)

polaris_lua_read(polaris_lm_t)
# permission to access /tmp/rp/lipc/lmanrtu_stackrtu_socket
# polaris_lm_t policy
allow polaris_lm_t self:unix_stream_socket connectto;

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislm.te

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#

# August 2017, Victor Kamensky

#

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#

/usr/binos/conf/flash\_check.sh -- gen\_context(system\_u:object\_r:polaris\_flashcheck\_exec\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisflashcheck.fc

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#

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#

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#

policy\_module(polarislipc, 1.0);

#####

# LIPC policy

#####

gen\_require(`

    type polaris\_pvp\_t;

    attribute polaris\_extended\_domain;

')

type polaris\_lipc\_t;

files\_type(polaris\_lipc\_t)

files\_tmp\_filetrans(polaris\_extended\_domain, polaris\_lipc\_t, dir, "lipc")

init\_script\_tmp\_filetrans(polaris\_extended\_domain, polaris\_lipc\_t, dir, "lipc")

# in some cases pvp.sh creates lipc tmp directory it needs permissions for that

manage\_dirs\_pattern(polaris\_pvp\_t, tmp\_t, polaris\_lipc\_t)

gen\_require(`

    attribute polaris\_extended\_domain;

    type polaris\_pvp\_tmp\_t;

')

```
filetrans_pattern(polaris_extended_domain, polaris_pvp_tmp_t, polaris_lipc_t, dir, "lipc")
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarislipc.te
```

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```
#
```

```
# September 2018, Anubha Balani
```

```
#
```

```
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```

```
# All rights reserved
```

```
#
```

```
## <summary>Polaris Memory Service Policy Rules.</summary>
```

```
#####
```

```
# Polaris memory: libmaroon and such
```

```
#####
```

```
#####
```

```
## <summary>
```

```
## Allow the specified domain to check existence of  
## /lib/systemd/system/ksm.service file. Effectively checking  
## whether KSM kernel feature is enabled on device or not.
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_ksm_run_check`,`
```

```
    gen_require(`  
        type systemd_unit_file_t;  
    `)
```

```
    getattr_files_pattern($1, systemd_unit_file_t, systemd_unit_file_t)
```

```
`)
```

```
#####
```

```
## <summary>
```

```
## Manage temporary maroon files
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```

## <rolebase/>
#
interface(`polaris_maroon_data_manage_all',`

gen_require(`
    attribute polaris_maroon_data_domain;
    type polaris_maroon_base_t;
`)

    manage_files_pattern($1, polaris_maroon_base_t, polaris_maroon_data_domain)
    allow $1 polaris_maroon_data_domain:file map;

    # manage temporary files in maroon_stats directory
    manage_files_pattern($1, polaris_maroon_base_t, polaris_maroon_base_t)
)

```

```

#####
## <summary>
## Make the specified type usable as maroon data file type.
## </summary>
## <param name="type">
## <summary>
## Type to be used for files.
## </summary>
## </param>
#

```

```

interface(`polaris_maroon_data_type',`
    files_type($1)
    gen_require(`
        attribute polaris_maroon_data_domain;
    `)
    typeattribute $1 polaris_maroon_data_domain;
)

```

```

#####
## <summary>
## Process to manage its own maroon files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <param name="file_type">
## <summary>
## File type of maroon that corresponds to given domain.
## </summary>
## </param>

```

```

## <rolebase/>
#
interface(`polaris_maroon_data_client',`
gen_require(
    type polaris_maroon_base_t;
)

    manage_files_pattern($1, polaris_maroon_base_t, $2)
    allow $1 $2:file map;
    filetrans_pattern($1, polaris_maroon_base_t, $2, file)
)

#####
## <summary>
##     Process to manage its own maroon files
## </summary>
## <param name="domain_stem">
##     <summary>
##         Domain allowed access.
##     </summary>
## </param>
## <rolebase/>
#
interface(`polaris_maroon_data_client_template',`
gen_require(
    type polaris_maroon_base_t;
)

    type polaris_$1_maroon_t;
    polaris_maroon_data_type(polaris_$1_maroon_t)

    polaris_maroon_data_client(polaris_$1_t, polaris_$1_maroon_t)
)

#####
## <summary>
##     Getattr of polaris_zram_device_t files
## </summary>
## <param name="domain">
##     <summary>
##         Domain allowed access.
##     </summary>
## </param>
## <rolebase/>
#
interface(`polaris_zram_getattr',`
    gen_require(
        type device_t;

```

```
        type polaris_zram_device_t;
    )
    getattr_blk_files_pattern($1, device_t, polaris_zram_device_t)
)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismemory.if
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```

```
#
# March 2017, Victor Kamensky
#
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#
```

```
/bootflash/.dbpersist(/.*)?      gen_context(system_u:object_r:polaris_disk_dbm_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdbm.fc
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```

```
#
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#
```

```
policy_module(polarisreflector, 1.0);
```

```
polaris_process_domain_template(reflector)
```

```
corecmd_exec_bin(polaris_reflector_t)
```

```
# allow to read /proc/meminfo
kernel_read_system_state(polaris_reflector_t)
```

```
# allow read of /etc/passwd
auth_use_nsswitch(polaris_reflector_t)
```

```
# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_reflector_t)
```

```
# read /etc/hosts file
sysnet_read_config(polaris_reflector_t)
```

```
# work with /tmp files
```

```

type polaris_reflector_tmp_t;
files_tmp_file(polaris_reflector_tmp_t)
manage_dirs_pattern(polaris_reflector_t, tmp_t, polaris_reflector_tmp_t)
manage_files_pattern(polaris_reflector_t, polaris_reflector_tmp_t, polaris_reflector_tmp_t)
manage_fifo_files_pattern(polaris_reflector_t, polaris_reflector_tmp_t, polaris_reflector_tmp_t)
files_tmp_filetrans(polaris_reflector_t, polaris_reflector_tmp_t, { file dir })

# reflector can work with droputil tmp files
polaris_droputil_manage_tmp_files(polaris_reflector_t)

#rsync_exec(polaris_reflector_t)
gen_require(`
    type rsync_t;
`)
rsync_entry_domtrans(polaris_reflector_t, rsync_t)
allow rsync_t polaris_reflector_t:process sigchld;
# upon exec rsync inherits reflector.sh stdout/stderr which are
# polaris_reflector_t fifo_files
allow rsync_t polaris_reflector_t:fifo_file write;

allow polaris_reflector_t self:capability { sys_resource dac_override };
allow polaris_reflector_t self:process setpgid;

polaris_btrace_data_manage(polaris_reflector_t)
polaris_cpld_read(polaris_reflector_t)
polaris_chasfs_manage(polaris_reflector_t)
polaris_boot_tmp_read(polaris_reflector_t)
polaris_read_debug_conf(polaris_reflector_t)
polaris_disk_crashinfo_getattr(polaris_reflector_t)
polaris_rmonbifo_tmp_read(polaris_reflector_t)

# watch over /tmp/rp/dropbox
polaris_droputil_tmp_watch(polaris_reflector_t)

# Allow /tmp/ufs/bootflash & /tmp/ufs/harddisk read access
optional_policy(`
polaris_ncd_tmp_read(polaris_reflector_t)
`)

# 'rm -rf /tmp/rp/reflector'
fs_getattr_tmpfs(polaris_reflector_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisreflector.te
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#
# March 2017, Victor Kamensky

```

```

#
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#

policy_module(polarispman, 1.0);

polaris_process_domain_template(pman)

#reassess all permissions granted here for new pman
# - do we clone this domain to pmanc, or replace it?

gen_require(
    type polaris_psvp_t;
    type polaris_pvp_t;
)

corecmd_exec_bin(polaris_pman_t)
corecmd_exec_shell(polaris_pman_t)
# can execute process in polaris domain
polaris_exec(polaris_pman_t)

# LOOK AT ME start-stop-daemon from busy box iterates all
# /proc/<pid> directories and reads /proc/<pid>/cmdline
# /proc/<pid>/exe. I.e it need quite a bit of priviledges
domain_read_all_domains_state(polaris_pman_t)

# pman wants to write to /proc/<pid>/oom_adj of each process
# it started. Now oom_adj is under label of process that owns
# it, so for now let pman to be able to write into any file
# in polaris_domain. Latter try to clean it up by transitioning
# oom_adj into separate domain?
gen_require(
    attribute polaris_domain;
)
manage_files_pattern(polaris_pman_t, polaris_domain, polaris_domain)

# allow to read /proc/meminfo
kernel_read_system_state(polaris_pman_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_pman_t)

# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_pman_t)

# read /proc/sys/vm/nr_hugepages
kernel_read_vm_sysctls(polaris_pman_t)

```

```

# read/write cgroups files
fs_rw_cgroup_files(polaris_pman_t)

dmidecode_domtrans(polaris_pman_t)

allow polaris_pman_t self:capability { sys_nice sys_resource dac_override sys_rawio sys_admin };

polaris_btrace_data_manage(polaris_pman_t)
polaris_chasfs_manage(polaris_pman_t)
polaris_cpld_read(polaris_pman_t)
ifdef(^ngwc_family',`
polaris_cpld_write(polaris_pman_t)
`)
polaris_proc_rmonbifo_read(polaris_pman_t)
polaris_rmonbifo_tmp_read(polaris_pman_t)
polaris_boot_tmp_read(polaris_pman_t)
polaris_read_debug_conf(polaris_pman_t)
polaris_disk_crashinfo_getattr(polaris_pman_t)

# work with /tmp files
type polaris_pman_tmp_t;
files_tmp_file(polaris_pman_tmp_t)
manage_dirs_pattern(polaris_pman_t, tmp_t, polaris_pman_tmp_t)
manage_files_pattern(polaris_pman_t, polaris_pman_tmp_t, polaris_pman_tmp_t)
manage_fifo_files_pattern(polaris_pman_t, polaris_pman_tmp_t, polaris_pman_tmp_t)
files_tmp_filetrans(polaris_pman_t, polaris_pman_tmp_t, { file dir })
filetrans_pattern(domain, tmp_t, polaris_pman_tmp_t, dir, "process")
filetrans_pattern(domain, tmp_t, polaris_pman_tmp_t, dir, "pman_ports")

# pcohort reads files in /tmp/rp/process directory
gen_require(`
    attribute polaris_extended_domain;
`)
read_files_pattern(polaris_extended_domain, polaris_pman_tmp_t, polaris_pman_tmp_t)
list_dirs_pattern(polaris_extended_domain, polaris_pman_tmp_t, polaris_pman_tmp_t)

# bash needs setpgid in its make_child function
allow polaris_pman_t self:process { setpgid };

# pmanlite uses getsid
allow polaris_pman_t self:process { getsession };

# pman call renice utility to change process nice level
allow polaris_pman_t self:process { setsched };

# pman needs to work with pvp tmp files
polaris_pvp_manage_tmp_files(polaris_pman_t)

```

```

# on ultra pman waits for /tmp/cpp_ifdev_rep pipes appearance before
# proceeding further before it starts iosd
optional_policy(
polaris_cpp_tmp_ifdev_getattr(polaris_pman_t)

# /tmp/vxe_ucose_image created by some systemd units and accessed
# by pman, lets transition it into polaris_pman_tmp_t domain
gen_require(
    type initrc_t;
    type init_t;
)
files_tmp_filetrans({ initrc_t init_t }, polaris_pman_tmp_t, file, "vxe_ucose_image")
files_tmp_filetrans({ initrc_t init_t }, polaris_pman_tmp_t, file, "wlc_ucose_image")
files_tmp_filetrans({ initrc_t init_t }, polaris_pman_tmp_t, file, "utah_ucose_image")
files_tmp_filetrans({ initrc_t init_t }, polaris_pman_tmp_t, file, "fugazi_ucose_image")
)
# pman needs to manage cgroups membership of dofferent processes
# See move_to_cgroup pman function. It needs setsched permission
domain_setpriority_all_domains(polaris_pman_t)

# pman.sh can call logger command
logging_send_syslog_msg(polaris_pman_t)

# pman can receive signals from any polaris domain process
polaris_receive_signal_from_domain(polaris_pman_t)

# pman.sh calls pidof command (similar to ps)
# pidof needs access to /sys/devices/system/cpu/online
dev_read_sysfs(polaris_pman_t)
# pidof commands wants sys_ptrace
allow polaris_pman_t self:capability sys_ptrace;

# pman can send signal to anything
domain_signal_all_domains(polaris_pman_t)

# pmanlite can getpgid to its child group processes
domain_getpgid_all_domains(polaris_pman_t)

# pmanlite uses killpg(<child pid>,SIGNULL) to test its child processes
domain_signull_all_domains(polaris_pman_t)

term_use_unallocated_ttys(polaris_pman_t)

optional_policy(
polaris_repm_tmp_manage(polaris_pman_t)
)

```

```

optional_policy(`
# pman on nyquist ls /tmp/ufs/crashinfo
polaris_ncd_tmp_read(polaris_pman_t)
`)

# runs find over /proc
kernel_getattr_proc(polaris_pman_t)

# PLEASE LOOK AT ME: pman removes /tmp/subpkg directory after CSCvm14562 commit
# back out and change properly after CSCvm51181 is fixed
polaris_install_tmp_manage(polaris_pman_t)

# rm from coreutils-8.30 wants to know filesystem type
fs_getattr_tmpfs(polaris_pman_t)
fs_getattr_xattr_fs(polaris_pman_t)

# domain for gdbserver started by pman

polaris_utility_domain_template(gdb)

domtrans_pattern(polaris_pman_t, polaris_gdb_exec_t, polaris_gdb_t)

# pman starts gdbserver with stdout pointing to btrace fifo
polaris_use_btrace_fifo(polaris_gdb_t)

# gdbserver reads /proc/$pid/exe of a process it gets attached to.
# Allow to read state of all processes for now.
domain_read_all_domains_state(polaris_gdb_t)

# allow gdbserver to bind to all unreserved ports for now
corenet_tcp_bind_unreserved_ports(polaris_gdb_t)
corenet_tcp_bind_generic_node(polaris_gdb_t)

allow polaris_gdb_t self:process { ptrace setpgid };
allow polaris_gdb_t self:tcp_socket { accept bind create getattr listen setopt };

# pman update iosxe_control_processes/iosxe_mgmt_processes/tasks
fs_manage_cgroup_dirs(polaris_pman_t)
fs_manage_cgroup_files(polaris_pman_t)

optional_policy(`
container_runtime_domtrans(polaris_pman_t)
`)

# pman calls show_version for dockerd executable
optional_policy(`
polaris_container_runtime_show_version(polaris_pman_t)
`)

```

```

# needs to access nsfs file during killall invocation
fs_read_nsfs_files(polaris_pman_t)

#runs over /proc/<pid>/net/arp
kernel_read_network_state(polaris_pman_t)

#runs over /proc/<pid>/net/stat
kernel_read_network_state_symlinks(polaris_pman_t)

#runs over /proc/<pid>/net/rpc
kernel_read_rpc_sysctls(polaris_pman_t)

# LOOK AT ME: why pman doing it
# from mgmt/confd/confd/src/confd_startup_sh_post_exit.sh archive_errlog function
polaris_btrace_persistent_data_manage(polaris_pman_t)
polaris_confd_log_manage(polaris_pman_t)
allow polaris_pman_t self:process setfscreate;

# access /bootflash/.installer/install_issu_state
polaris_disk_install_read(polaris_pman_t)

# /usr/binos/conf/umbrella_init.sh that runs under pman
# copies into /bootflash/ios_core.p7b
polaris_bootflash_manage(polaris_pman_t)

optional_policy(`
# we may write bits to the exiting_bays file in /proc
polaris_rw_exiting_bays(polaris_pman_t)
`)

ifdef(^ngwc_family`,`
# linux_iods_image_post_exit.sh restores the slot-based address
# for the management ethernet should be restored on dual RP system.
polaris_chvrf_domtrans(polaris_pman_t)
sysnet_domtrans_ifconfig(polaris_pman_t)

# For use of flashutil preparing for reload
polaris_flashlib_read(polaris_pman_t)
polaris_flashlib_write(polaris_pman_t)
`)

# File description leaks for TDL db lock files as processes are managed by
# pman.
# TODO Eventually these fd leaks should be fixed in the calling processes
#
# Note that TDL db lock file interfaces are typically generated by TDL and
# are not found in our local .if files

```

```

polaris_tdlresolve_read(polaris_pman_t)
polaris_db_tdlldb_ios_oper_use(polaris_pman_t)

ifdef(`nyquist_platform',`
polaris_db_tdlldb_ewlc_operational_use(polaris_pman_t)
polaris_db_tdlldb_rogued_use(polaris_pman_t)
polaris_db_tdlldb_ewlc_config_use(polaris_pman_t)
polaris_db_tdlldb_wstatsd_use(polaris_pman_t)
polaris_db_tdlldb_client_global_use(polaris_pman_t)
')

# delete /tmp/booted from linux_iosd_image_post_exit.sh when iosd goes down.
# For example: preparing for reload.
gen_require(`
    type polaris_iosd_tmp_files_t;
')
allow polaris_pman_t polaris_iosd_tmp_files_t:file { delete_file_perms open };

# Upon exit of a process, pman needs to remove sai directory and files
# associated with the process
polaris_pvp_delete_sai_files(polaris_pman_t)
#rsync port want to establish Tcp connection
#runs over /usr/bin/rsync
corenet_tcp_connect_rsync_port(polaris_pman_t)
rsync_entry_type(polaris_pman_t)

ifdef(`crankshaft_family',`
# Provide process signal perms to pman.
polaris_caf_proc_signal_perms(polaris_pman_t)
')

# open connections from processes managed by pman can leak. The selinux
# errors associated with these typically come from a forked and renamed
# elastic process like wncd_0. During process forking/startup, node
# binds may cause denials as they are brought up by pman
ifdef(`ngwc_family',`
corenet_tcp_bind_generic_node(polaris_pman_t)
corenet_udp_bind_generic_node(polaris_pman_t)
corenet_tcp_connect_lisp_cons_control_port(polaris_pman_t)
')

# pman can stop itself on reload
allow polaris_pman_t self:capability kill;

# For pmanlite, allow pman's grand-children rsync to be able to operate on pipe created by pman.
gen_require(`
    type rsync_t;
')

```

```
polaris_use_pman_fifo(rsync_t)
```

```
ifdef(`sumatra_platform',`  
# Allow pman to execute cman_fp in the polaris_cm_fp_t domain  
polaris_cm_fp_domtrans(polaris_pman_t)  
)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispman.te  
No license file was found, but licenses were detected in source scan.
```

```
dnl
```

```
dnl April 2018, Victor Kamensky
```

```
dnl
```

```
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```

```
dnl All rights reserved
```

```
dnl
```

```
dnl Nyquist Platform Max Bay Limits
```

```
max_bay_map_set(`rp', `per_bay', 0)
```

```
max_bay_map_set(`cc', `per_bay', 0)
```

```
max_bay_map_set(`fp', `per_bay', 0)
```

```
dnl in elastic scope each process has its own value
```

```
max_elastic_map_set(`rp', `elastic', BPROC_ODM, 0)
```

```
max_elastic_map_set(`cc', `elastic', BPROC_ODM, 0)
```

```
max_elastic_map_set(`fp', `elasitic', BPROC_ODM, 0)
```

```
max_elastic_map_set(`rp', `elastic', BPROC_WNCD, 0)
```

```
max_elastic_map_set(`cc', `elastic', BPROC_WNCD, 0)
```

```
max_elastic_map_set(`fp', `elastic', BPROC_WNCD, 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/nyquistmaps.m4  
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
# Aug 2020, Sridhar
```

```
#
```

```
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# All rights reserved
```

```
#
```

```
## <summary>Polaris xcopy Policy Rules.</summary>
```

```
#####
```

```
## <summary>
```

```
## Execute xcopy related scripts in its own domain.
```

```
## </summary>
```

```

## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_xcopy_script_domtrans`,`
    gen_require(`
        type polaris_xcopy_script_t, polaris_xcopy_script_exec_t;
    `)

    domtrans_pattern($1, polaris_xcopy_script_exec_t, polaris_xcopy_script_t)
`)
#
#####
## <summary>
## xcopy progress temp file access
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolebase/>
#
interface(`polaris_xcopy_tmp_manage`,`
    gen_require(`
        type polaris_xcopy_tmp_t;
    `)

    manage_dirs_pattern($1,polaris_xcopy_tmp_t, polaris_xcopy_tmp_t)
    manage_files_pattern($1,polaris_xcopy_tmp_t, polaris_xcopy_tmp_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisxcopy.if

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```

#
# April 2017, Victor Kamensky
#
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#
## <summary>Polaris dmi_ncsshd_mgmt Policy Rules.</summary>
#####
## <summary>

```

```

## Read polaris_ncsshd_keys_t files, effectively access
## /tmp/.ncsshd_authorized_keys created by psd and read by ncssh
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_ncsshd_authorized_keys_read`,`
    gen_require(`
        type polaris_ncsshd_keys_t;
    `)
    read_files_pattern($1, polaris_ncsshd_keys_t, polaris_ncsshd_keys_t)
    list_dirs_pattern($1, polaris_ncsshd_keys_t, polaris_ncsshd_keys_t)
`)

#####
## <summary>
## Watch /var/run/netns and list contents
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_watch_netns`,`
    gen_require(`
        type ifconfig_var_run_t;
    `)
    list_dirs_pattern($1, ifconfig_var_run_t, ifconfig_var_run_t)
    allow $1 ifconfig_var_run_t:dir watch;
`)

#####
## <summary>
## Manage polaris_pttcd_tmp_t files, effectively files
## under /tmp/tmpub/interceptor
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_interceptor_manage`,`
    gen_require(`

```

```

        type polaris_pttcd_tmp_t;
    ')
    manage_files_pattern($1, polaris_pttcd_tmp_t, polaris_pttcd_tmp_t)
    manage_dirs_pattern($1, polaris_pttcd_tmp_t, polaris_pttcd_tmp_t)
    allow $1 polaris_pttcd_tmp_t:{ dir file } watch;
)

#####
## <summary>
##   Execute a domain transition to run ncsshd polaris process.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_ncsshd_mgmt_domtrans',`
    gen_require(`
        type polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_exec_t;
    ')

    domtrans_pattern($1, polaris_dmi_ncsshd_mgmt_exec_t, polaris_dmi_ncsshd_mgmt_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmincsshdmgmt.if  
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```

#
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#
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#

## <summary>Polaris cm_rp Policy Rules.</summary>

#####
## <summary>
##   Execute cmand_fp in the polaris_cm_fp_t domain.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#

```

```

interface(`polaris_cm_rp_domtrans',`
gen_require(`
type polaris_cm_rp_t, polaris_cm_rp_exec_t;
`)

corecmd_search_bin($1)
domtrans_pattern($1, polaris_cm_rp_exec_t, polaris_cm_rp_t)
`)

#####
## <summary>
## Write into fifo file created by cmrp, typical case when
## cmrp starts script under popen.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolecap/>
#
interface(`polaris_cmrp_use_fifo',`
gen_require(`
type polaris_cm_rp_t;
`)

write_fifo_files_pattern($1, polaris_cm_rp_t, polaris_cm_rp_t)
`)

#####
## <summary>
## Write/read /tmp/pfu_overtime.lock file
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_cm_rp_tmp_manage',`
gen_require(`
type polaris_cm_rp_tmp_t;
type tmp_t;
`)
manage_dirs_pattern($1, { tmp_t polaris_cm_rp_tmp_t }, polaris_cm_rp_tmp_t)
manage_files_pattern($1, { tmp_t polaris_cm_rp_tmp_t }, polaris_cm_rp_tmp_t)
`)

```

```
#####
## <summary>
##   Setup policies to access dir and file
##   /vol/harddisk/.inv/inv_log_file
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cm_rp_inv_log_setup`,`
    gen_require(`
        type polaris_cm_rp_inv_log_file_t;
        type polaris_disk_harddisk_t;
        type polaris_disk_bootflash_t;
    `)
    filetrans_pattern($1, {polaris_disk_harddisk_t polaris_disk_bootflash_t}, polaris_cm_rp_inv_log_file_t, dir,
".inv")
    # allow access to /vol/harddisk/.inv
    manage_dirs_pattern($1, {polaris_disk_harddisk_t polaris_disk_bootflash_t}, polaris_cm_rp_inv_log_file_t)
    # allow access to /vol/harddisk/.inv/inv_log_file
    manage_files_pattern($1,{polaris_cm_rp_inv_log_file_t}, polaris_cm_rp_inv_log_file_t)
)`)

```

```
#####
## <summary>
##   Write into /tmp/codesign.txt file created by cm_rp
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_cm_rp_tmp_write`,`
    gen_require(`
        type polaris_cm_rp_tmp_t;
    `)
    write_files_pattern($1, { tmp_t polaris_cm_rp_tmp_t }, polaris_cm_rp_tmp_t)
)`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscmrp.if  
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```
#
# February 2020, Victor Kamensky
```

```

#
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#

policy_module(polarisvdaemon, 1.0);

gen_require(
    type polaris_vdaemon_t;
)
polaris_chasfs_manage(polaris_vdaemon_t)
# read and write /bootflash/sdwan/etc/vdaemon_gen_id
polaris_bootflash_manage(polaris_vdaemon_t)
polaris_tdlresolve_read(polaris_vdaemon_t)
polaris_cpld_read(polaris_vdaemon_t)
polaris_flashlib_read(polaris_vdaemon_t)

polaris_ripc_sman_ui_serv_connect(polaris_vdaemon_t)

polaris_db_tdlldb_dir_use(polaris_vdaemon_t)

logging_send_syslog_msg(polaris_vdaemon_t)

# vconfd_load_shared_schemas
polaris_conf_d_shared_schema_read(polaris_vdaemon_t)

# manage /etc/viptela
polaris_cedge_etc_manage(polaris_vdaemon_t)

polaris_cedge_reset_ns(polaris_vdaemon_t)

# calls ifconfig for tun_0_0 interface
sysnet_domtrans_ifconfig(polaris_vdaemon_t)

# calls dmidecode get system serial number
dmidecode_domtrans(polaris_vdaemon_t)

# /var/run/.vdaemon socket and pid
type polaris_vdaemon_var_run_t;
files_pid_file(polaris_vdaemon_var_run_t)
manage_files_pattern(polaris_vdaemon_t, polaris_vdaemon_var_run_t, polaris_vdaemon_var_run_t)
manage_sock_files_pattern(polaris_vdaemon_t, polaris_vdaemon_var_run_t, polaris_vdaemon_var_run_t)
files_pid_filetrans(polaris_vdaemon_t, polaris_vdaemon_var_run_t, { file sock_file })

polaris_ttm_var_sock_write(polaris_vdaemon_t)

# generate_instance_uuid reads /sys/devices/virtual/dmi/id/product_uuid
dev_read_sysfs(polaris_vdaemon_t)

```

```

# vip_util_set_fd_limits calls setrlimit
allow polaris_vdaemon_t self:process { setrlimit setpgid };

allow polaris_vdaemon_t self:capability { dac_override fowner sys_resource };

# vdaemon_init_tunn_intf initialize tun_0_0 in vrf 1
allow polaris_vdaemon_t self:tun_socket create;
corenet_rw_tun_tap_dev(polaris_vdaemon_t)

polaris_persistent_watch(polaris_vdaemon_t)
# from vdaemon_misc.c vdaemon_init_inotify function
polaris_cedge_etc_watch(polaris_vdaemon_t)

# set_netns_with_etc mounts on / and /sys
# set_netns_with_etc opens /etc/netns/1 dir
polaris_namespace_set_netns_with_etc(polaris_vdaemon_t)
# DNS thread complains about tmp_t mounton
# on /sys when switching namespace
gen_require(
    type tmp_t;
)
allow polaris_vdaemon_t tmp_t:dir mounton;

# vip_util_set_ns opens /var/run/netns/*
polaris_cedge_set_ns(polaris_vdaemon_t)
# vip_dns_process_request switches namespace from linux n/w namespace to
# original mount namespace
allow polaris_vdaemon_t self:capability { net_admin sys_chroot };
allow polaris_vdaemon_t self:udp_socket { bind connect create getattr getopt shutdown };

# control linux routes vip_route_delete and vdaemon_setup_system_ip_route
allow polaris_vdaemon_t self:netlink_route_socket { bind create getattr nlmsg_read nlmsg_write };

# binds to vbond udp ports
corenet_udp_bind_generic_node(polaris_vdaemon_t)
corenet_udp_bind_polaris_vbond_port(polaris_vdaemon_t)

# though default ports exist, users can configure the tcp ports in vManage and vSmart
corenet_tcp_connect_all_ports(polaris_vdaemon_t)

# vbond_proc_hello executes VIP_CDB_BACKUP_SCRIPT
polaris_confdomtrans(polaris_vdaemon_t)
# VIP_CDB_BACKUP_SCRIPT makes use of /etc/confd/confd_ipc_secret
auth_map_passwd(polaris_vdaemon_t)

# vdaemon_write_authorized_keys_to_ncsshd opens VDAEMON_NCSSHD_AUTH_KEY_FILE file
polaris_ncsshd_keys_manage(polaris_vdaemon_t)

```

```
# vbond_encode_version opens /etc/version
polaris_conf_d_etc_read(polaris_vdaemon_t)

# generate_or_parse_uuid() invokes uuid_generate that needs read on
# random-number generator devices (e.g., /dev/random).
dev_read_rand(polaris_vdaemon_t)

# vdaemon_exec_iptables() is invoked by vdaemon all over the place
iptables_domtrans(polaris_vdaemon_t)

allow polaris_vdaemon_t self:capability net_raw;
allow polaris_vdaemon_t self:rawip_socket create_socket_perms;
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisvdaemon.te

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```
#
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#
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#

## <summary>Polaris fman_rp Policy Rules.</summary>
```

```
#####
## <summary>
##   Manage mqipc fmrp2fpm shared memory file in /dev/shm directory
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_fmrp2fpm_mqipc_use',`
gen_require(`
type polaris_fmrp2fpm_mqipc_t;
')
polaris_mqipc_use($1, polaris_fmrp2fpm_mqipc_t)
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfmanrp.if

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dnl

```

dnl May 2019
dnl
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dnl
dnl confined and permissive domain maps
divert(-1)
define(`permissive_domain', `defn(format(`permissive_domain[%s]', `$1'))')
define(`permissive_domain_set', `define(format(`permissive_domain[%s]', `$1'), `$2'))

define(`confined_domain', `defn(format(`confined_domain[%s]', `$1'))')
define(`confined_domain_set', `define(format(`confined_domain[%s]', `$1'), `$2'))

dnl
dnl list of all subjects that should be in confined mode
dnl
confined_domain_set(`polaris_iosd_t', `polaris_iosd_t')

dnl
dnl list of all subjects that should be placed in permissive mode
dnl
permissive_domain_set(`polaris_nginx_t', `polaris_nginx_t')
permissive_domain_set(`polaris_nginx_webui_t', `polaris_nginx_webui_t')
permissive_domain_set(`polaris_nginx_webui_install_t', `polaris_nginx_webui_install_t')
divert(0)dnl

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/domainmaps.m4
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```

```

#
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#
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#

```

```

/tmp/dbgmn_log_svr gen_context(system_u:object_r:polaris_fed_sock_t,s0)

```

```

/tmp/fed_post_result -- gen_context(system_u:object_r:polaris_fed_tmp_t,s0)

```

```

/flash/shfwd_params.txt gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwcfed.fc

```

No license file was found, but licenses were detected in source scan.

```
#
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#
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#

policy_module(polarisrollbacktimer, 1.0);

polaris_process_domain_template(rbtimer)

corecmd_exec_bin(polaris_rbtimer_t)

# allow to read /proc/meminfo
kernel_read_system_state(polaris_rbtimer_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_rbtimer_t)

# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_rbtimer_t)

# work with /tmp files
type polaris_rbtimer_tmp_t;
files_tmp_file(polaris_rbtimer_tmp_t)
manage_dirs_pattern(polaris_rbtimer_t, tmp_t, polaris_rbtimer_tmp_t)
manage_files_pattern(polaris_rbtimer_t, polaris_rbtimer_tmp_t, polaris_rbtimer_tmp_t)
manage_fifo_files_pattern(polaris_rbtimer_t, polaris_rbtimer_tmp_t, polaris_rbtimer_tmp_t)
files_tmp_filetrans(polaris_rbtimer_t, polaris_rbtimer_tmp_t, { file dir })

# work with /bootflash/.rollback_timer (RBT_CONTROL_DIR) file
type polaris_rbtimer_bootflash_t;
polaris_disk_type(polaris_rbtimer_bootflash_t)
polaris_rbtimer_bootflash_manage(polaris_rbtimer_t)

allow polaris_rbtimer_t self:capability sys_resource;
allow polaris_rbtimer_t self:capability dac_override;
allow polaris_rbtimer_t self:process setpgid;

polaris_btrace_data_manage(polaris_rbtimer_t)
polaris_chasfs_manage(polaris_rbtimer_t)
polaris_cpld_read(polaris_rbtimer_t)
polaris_boot_tmp_read(polaris_rbtimer_t)
polaris_read_debug_conf(polaris_rbtimer_t)
polaris_proc_rmonbifo_read(polaris_rbtimer_t)
polaris_rmonbifo_tmp_read(polaris_rbtimer_t)
```

```

polaris_disk_crashinfo_getattr(polaris_rbtimer_t)
polaris_disk_harddisk_read_lnk(polaris_rbtimer_t)
polaris_bootflash_manage(polaris_rbtimer_t)

logging_send_syslog_msg(polaris_rbtimer_t)

# uses pidof
domain_read_all_domains_state(polaris_rbtimer_t)
dev_read_sysfs(polaris_rbtimer_t)

#rollbacktimer runs install_engine.sh
polaris_install_engine_domtrans(polaris_rbtimer_t)

polaris_script_errmsg_use(polaris_rbtimer_t)

# watch over /bootflash/.rollback_timer
allow polaris_rbtimer_t polaris_rbtimer_bootflash_t:dir watch;
# watch over /tmp/rp/rollback_timer
allow polaris_rbtimer_t polaris_rbtimer_tmp_t:dir watch;

# access to /tmp/ufs//crashinfo
optional_policy(`
polaris_ncd_tmp_read(polaris_rbtimer_t)
`)
# access to read packages.conf
polaris_read_packages_conf(polaris_rbtimer_t)

# access to /cdrom0/ when *ova image is booted during
# first instance of vwlc on ucs server
polaris_removable_read(polaris_rbtimer_t)

# access to "/bootflash/.installer/install_abort_timer_val"
polaris_disk_install_read(polaris_rbtimer_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrollbacktimer.te
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#
# March 2017, Victor Kamensky
#
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#

policy_module(polarisbhytoolsd, 1.0);

polaris_process_domain_template(bhytoolsd)

```

```

polaris_btrace_data_manage(polaris_bhytoolsd_t)
polaris_chasfs_manage(polaris_bhytoolsd_t)
polaris_cpld_read(polaris_bhytoolsd_t)

# vmttoolsd transtions from polaris_bhytoolsd_t to vmttools_t -
# bhytoolsd is small wrapper that calls vmttoolsd
vmttools_domtrans(polaris_bhytoolsd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbhytoolsd.te
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#
# August 2017, Shawn Lu
#
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#

policy_module(polarismobilityd, 1.0);

gen_require(
    type polaris_mobilityd_t;
)

polaris_btrace_data_manage(polaris_mobilityd_t)
polaris_crft_data_manage(polaris_mobilityd_t)
polaris_chasfs_manage(polaris_mobilityd_t)
polaris_tdlresolve_read(polaris_mobilityd_t)
polaris_tdlldb_list_dirs(polaris_mobilityd_t)
polaris_cpld_read(polaris_mobilityd_t)
polaris_lua_read(polaris_mobilityd_t)
polaris_flashlib_read(polaris_mobilityd_t)

polaris_ripc_sman_ui_serv_connect(polaris_mobilityd_t)

polaris_db_tdlldb_dir_use(polaris_mobilityd_t)

# allow to use setrlimit
allow polaris_mobilityd_t self:capability sys_resource;
allow polaris_mobilityd_t self:process setrlimit;
allow polaris_mobilityd_t self:capability dac_override;
allow polaris_mobilityd_t self:udp_socket { create_socket_perms recv_msg send_msg };

logging_send_syslog_msg(polaris_mobilityd_t)

polaris_lfts_dev_use(polaris_mobilityd_t)

```

polaris\_cpld\_read(polaris\_mobilityd\_t)

polaris\_odm\_clnt2svr\_mqipc\_create(polaris\_mobilityd\_t)

polaris\_tmp\_tdldb\_persist\_setup(polaris\_mobilityd\_t)

polaris\_tdldbpersist\_setup(polaris\_mobilityd\_t)

corenet\_udp\_bind\_generic\_node(polaris\_mobilityd\_t)

corenet\_udp\_bind\_polaris\_mobility\_ctl\_port(polaris\_mobilityd\_t)

corenet\_udp\_bind\_polaris\_mobility\_data\_port(polaris\_mobilityd\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismobilityd.te

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#

# June 2017, Victor Kamensky

#

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#

/usr/binos/conf/wui-lighttpd-launch.sh -- gen\_context(system\_u:object\_r:polaris\_webui\_lighttpd\_exec\_t,s0)

/usr/binos/conf/wui-app-launch.sh -- gen\_context(system\_u:object\_r:polaris\_webui\_exec\_t,s0)

/usr/binos/conf/wui-tipc-launch.sh -- gen\_context(system\_u:object\_r:polaris\_webui\_exec\_t,s0)

/webui(/.\*)? gen\_context(system\_u:object\_r:polaris\_webui\_file\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswebui.fc

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#

# April 2017, Victor Kamensky

#

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#

/tmp/\.DmiAuth\.socket -s gen\_context(system\_u:object\_r:polaris\_dmi\_dmiauthd\_tmp\_t,s0)

/tmp/netconf-yang-diag(/.\*)? gen\_context(system\_u:object\_r:polaris\_dmi\_dmiauthd\_tmp\_diags\_t,s0)

/usr/binos/conf/dmid\_diag\_logs.sh -- gen\_context(system\_u:object\_r:polaris\_dmid\_diag\_logs\_exec\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmidmauthd.fc

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#

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#

# polarisrmmgr file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrmmgr.fc

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#

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#

## <summary>Polaris pttcd Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispttcd.if

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#

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#

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#

/usr/binos/conf/oom.sh -- gen\_context(system\_u:object\_r:polaris\_oom\_exec\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisoom.fc

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#

# July 2020, Swati Kumari

#

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#

```

policy_module(polarisptpdrp, 1.0);

gen_require(
    type polaris_ptpd_rp_t;
)
polaris_chasfs_read(polaris_ptpd_rp_t)
polaris_cpld_read(polaris_ptpd_rp_t)
polaris_tdlresolve_read(polaris_ptpd_rp_t)
polaris_lsmpi_dev_use(polaris_ptpd_rp_t)

# ptpd needs to have open,read,write access with /dev/ds31408
polaris_ds31408_dev_use(polaris_ptpd_rp_t)

# blzi device
polaris_blzi_dev_use(polaris_ptpd_rp_t)

allow polaris_ptpd_rp_t self:capability sys_nice;
allow polaris_ptpd_rp_t self:process setsched;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisptpdrp.te
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#

/tmp/lsn.log -- gen_context(system_u:object_r:polaris_epc_ws_liaison_tmp_t,s0)

/tmp/epc_ws(/.*)? gen_context(system_u:object_r:polaris_epc_ws_liaison_tmp_t,s0)

# CLI: show platform software wireshark
/usr/binos/conf/wireshark_show.sh -- gen_context(system_u:object_r:polaris_wireshark_show_exec_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisepcwsliaison.fc
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#

```

```

policy_module(polarisgsdrp, 1.0);

gen_require(
    type polaris_gsd_rp_t;
)

#allow to run readlink /dev/loop0 & /bin/date
corecmd_exec_bin(polaris_gsd_rp_t)

#run ldd, which in turn exec "ld.so --verify"
libs_exec_ld_so(polaris_gsd_rp_t)

# allow to run mount in its own domain
mount_domtrans(polaris_gsd_rp_t)
# awk -v what=^.BuildPath: $pkginfo_file ~ what { print $2 } /tmp/sw/boot/pkginfo
polaris_boot_tmp_read(polaris_gsd_rp_t)
polaris_btrace_data_manage(polaris_gsd_rp_t)
polaris_chasfs_manage(polaris_gsd_rp_t)
polaris_read_debug_conf(polaris_gsd_rp_t)
polaris_disk_crashinfo_getattr(polaris_gsd_rp_t)
polaris_guestshell_exec_files_exec(polaris_gsd_rp_t)
polaris_guestshell_files_read(polaris_gsd_rp_t)
polaris_ncd_tmp_read(polaris_gsd_rp_t)
polaris_proc_rmonbifo_read(polaris_gsd_rp_t)
polaris_cpld_read(polaris_gsd_rp_t)
polaris_bootflash_read(polaris_gsd_rp_t)
polaris_harddisk_read(polaris_gsd_rp_t)

# read /proc/cmdline
kernel_read_system_state(polaris_gsd_rp_t)

auth_use_nsswitch(polaris_gsd_rp_t)
polaris_rmonbifo_tmp_read(polaris_gsd_rp_t)

allow polaris_gsd_rp_t self:capability { dac_override sys_resource };
allow polaris_gsd_rp_t self:process setpgid;

type polaris_gsd_rp_tmp_t;
files_tmp_file(polaris_gsd_rp_tmp_t)
manage_dirs_pattern(polaris_gsd_rp_t, tmp_t, polaris_gsd_rp_tmp_t)
manage_files_pattern(polaris_gsd_rp_t, tmp_t, polaris_gsd_rp_tmp_t)
manage_fifo_files_pattern(polaris_gsd_rp_t, polaris_gsd_rp_tmp_t, polaris_gsd_rp_tmp_t)
# work with /tmp/guestshell_stk directory
files_tmp_filetrans(polaris_gsd_rp_t, polaris_gsd_rp_tmp_t, dir, "guestshell_stk")

gen_require(
    type rsync_t;

```

```

')
rsync_entry_domtrans(polaris_gsd_rp_t, rsync_t)
allow rsync_t polaris_gsd_rp_t:process sigchld;

# read /opt/cisco/caf directory
polaris_caf_files_read(polaris_gsd_rp_t)

gen_require(
    type polaris_caf_api_port_t;
    type polaris_caf_exec_t;
)
allow polaris_gsd_rp_t polaris_caf_api_port_t:tcp_socket name_connect;
allow polaris_gsd_rp_t polaris_caf_exec_t:file { getattr open read };
allow polaris_gsd_rp_t tmp_t:dir { create rmdir };

polaris_flashlib_read(polaris_gsd_rp_t)
polaris_flashlib_write(polaris_gsd_rp_t)

# watch over /tmp/udev/etc/udev
polaris_udev_tmp_read(polaris_gsd_rp_t)
polaris_udev_tmp_watch(polaris_gsd_rp_t)
# watch over /bootflash/gs_script
polaris_persistent_watch(polaris_gsd_rp_t)
#allow iox_ha_utils.sh to read /etc/docker/daemon.json.
gen_require(
    type container_config_t;
)
read_files_pattern(polaris_gsd_rp_t, container_config_t, container_config_t)

# allow guestshell_ha.sh to log messages
logging_send_syslog_msg(polaris_gsd_rp_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisgsdrp.te

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```

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#

## <summary>Polaris Rmonbifo Policy Rules.</summary>

```

```

#####
# Polaris Rmonbifo Driver policy
#####

```

```
#####
## <summary>
##   Read /proc/rmbonbifo files.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_proc_rmonbifo_read`,`
gen_require(`
type polaris_proc_rmonbifo_t;
`)
read_files_pattern($1, polaris_proc_rmonbifo_t, polaris_proc_rmonbifo_t)
list_dirs_pattern($1, polaris_proc_rmonbifo_t, polaris_proc_rmonbifo_t)
`
)
```

```
#####
## <summary>
##   Getattr of /proc/rmbonbifo files.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_proc_rmonbifo_getattr`,`
gen_require(`
type polaris_proc_rmonbifo_t;
`)
getattr_files_pattern($1, polaris_proc_rmonbifo_t, polaris_proc_rmonbifo_t)
`
)
```

```
#####
## <summary>
##   Read /tmp/sw/boot/rmbonbifo files.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_rmonbifo_tmp_read`,`
gen_require(`
```

```
type polaris_rmonbifo_tmp_t;
    type polaris_boot_tmp_t;
)
read_files_pattern($1, polaris_rmonbifo_tmp_t, polaris_rmonbifo_tmp_t)
# /tmp/sw/boot/rmonbifo dir is inside of polaris_boot_tmp_t dir
search_dirs_pattern($1, polaris_boot_tmp_t, polaris_rmonbifo_tmp_t)
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrmonbifo.if

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```
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#
```

```
/usr/binos/conf/ncd.sh -- gen_context(system_u:object_r:polaris_ncd_exec_t,s0)
/etc/conf/unifiedfs/mount_data gen_context(system_u:object_r:polaris_ncd_etc_t,s0)
```

```
/usr/binos/conf/iosd_console_attach.sh -- gen_context(system_u:object_r:polaris_console_attach_exec_t,s0)
```

```
/usr/binos/conf/unifiedfs/unifiedfs_helper.sh -- gen_context(system_u:object_r:polaris_ufs_helper_exec_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisncd.fc

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```
#
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#
```

```
## <summary>Polaris iosd Policy Rules.</summary>
```

```
#####
```

```
## <summary>
```

```
## Make the specified domain able to work with /tmp/restconf
```

```
## </summary>
```

```
## <param name="type">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```

## </param>
#
interface(`polaris_restconf_tmp_use',`
    gen_require(`
        type polaris_restconf_tmp_t;
    `)

    manage_files_pattern($1, polaris_restconf_tmp_t, polaris_restconf_tmp_t)
    manage_dirs_pattern($1, polaris_restconf_tmp_t, polaris_restconf_tmp_t)
)

```

```

#####
## <summary>
##   Create domain for IOSD Polaris processes. Note
##   depending on policy build setting it could be confined or
##   not confined
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
## <param name="entry_point">
## <summary>
## Type of the program to be used as an entry point to this domain.
## </summary>
## </param>
#
interface(`polaris_iosd_domain',`
    polaris_process_domain_confined($1, $2)

    polaris_iosd_maybe_unconfined($1)
)

```

```

#####
## <summary>
##   Make the specified domain able to work with iosd2iox files
## </summary>
## <param name="type">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_iosd2iox_tmp_manage',`
    gen_require(`
        type polaris_iosd2iox_tmp_t;
    `)

```

```
)

manage_files_pattern($1, polaris_iosd2iox_tmp_t, polaris_iosd2iox_tmp_t)
)
```

```
#####
## <summary>
## Make the specified domain able to read iosd2iox files
## </summary>
## <param name="type">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_iosd2iox_tmp_read`,`
gen_require(`
type polaris_iosd2iox_tmp_t;
`
)
```

```
read_files_pattern($1,polaris_iosd2iox_tmp_t,polaris_iosd2iox_tmp_t)
)
```

```
#####
## <summary>
## Send messages to iosd unix datagram sockets.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_iosd_dgram_send`,`
gen_require(`
type polaris_iosd_t;
`
)
```

```
allow $1 polaris_iosd_t:unix_dgram_socket sendto;
)
```

```
#####
## <summary>
## Make the specified domain to read /tmp/rp/.iosp_dmiauthd
## </summary>
## <param name="type">
## <summary>
## Domain allowed access.
```

```

## </summary>
## </param>
#
interface(`polaris_dmiauthd_token_read`,`
    gen_require(`
        type polaris_dmiauthd_token_t;
    `)

    read_files_pattern($1, polaris_dmiauthd_token_t, polaris_dmiauthd_token_t)
)

```

```
#####
```

```

## <summary>
##   Make the specified domain to read /tmp/rp/.iosp_gnmib
## </summary>
## <param name="type">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_gnmib_token_read`,`
    gen_require(`
        type polaris_gnmib_token_t;
    `)

    manage_files_pattern($1, polaris_gnmib_token_t, polaris_gnmib_token_t)
)

```

```
#####
```

```

## <summary>
##   Make the specified domain able to work with files
##   with polaris_iosd_tmp_files_t
## </summary>
## <param name="type">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_iosd_tmp_file_use`,`
    gen_require(`
        type polaris_iosd_tmp_files_t;
    `)

    manage_files_pattern($1, polaris_iosd_tmp_files_t, polaris_iosd_tmp_files_t)
    allow $1 polaris_iosd_tmp_files_t:sock_file { manage_sock_file_perms};
)

```

```
#####
## <summary>
##   Manage /bootflash/geodb/ files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_geodb_files_manage',`
    gen_require(`
        type polaris_geodb_files_t;
    `)

    manage_files_pattern($1, polaris_geodb_files_t, polaris_geodb_files_t)
    manage_dirs_pattern($1, polaris_geodb_files_t, polaris_geodb_files_t)
    manage_lnk_files_pattern($1, polaris_geodb_files_t, polaris_geodb_files_t)
`)

#####
## <summary>
##   Allow the specified domain to read /boot/vcpu_template.txt
## or /csl_p_0/vcpu_template.txt
## </summary>
## <param name="type">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_iosd_vcpu_read',`
    gen_require(`
        type polaris_iosd_vcpu_t;
        type polaris_disk_varied_t;
        type polaris_disk_csl_p_t;
    `)

    read_files_pattern($1, { polaris_disk_varied_t polaris_disk_csl_p_t }, polaris_iosd_vcpu_t)
`)

#####
## <summary>
##   Allow the specified domain to read /tmp/usb-disable
## </summary>
## <param name="type">
```

```

## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_iosd_usb_disable_tmp_manage`,`
    gen_require(`
        type polaris_iosd_usb_disable_tmp_t;
    `)

    manage_files_pattern($1, polaris_iosd_usb_disable_tmp_t, polaris_iosd_usb_disable_tmp_t)
    files_tmp_filetrans($1, polaris_iosd_usb_disable_tmp_t, file, "usb-disable")
)

```

```

#####
## <summary>
## Allow the specified domain to access /bootflash/EFI
## </summary>
## <param name="type">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_efi_files_list_dirs`,`
    gen_require(`
        type polaris_efi_files_t;
    `)

    list_dirs_pattern($1, polaris_efi_files_t, polaris_efi_files_t)
)

```

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```

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#

```

# polarissmd file contexts place holder

```

# dc_profile_dir
/mnt/sd3/user/dc_profile_dir(/.*)? gen_context(system_u:object_r:polaris_smd_disk_t,s0)
/flash1/user/dc_profile_dir(/.*)? gen_context(system_u:object_r:polaris_smd_disk_t,s0)

```

```
/bootflash/dc_profile_dir(/.*)? gen_context(system_u:object_r:polaris_smd_disk_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissmd.fc
```

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```
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#  
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#
```

```
# polarismqipc file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismqipc.fc
```

No license file was found, but licenses were detected in source scan.

```
#  
# July 2017, Victor Kamensky  
#  
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# All rights reserved  
#
```

```
## <summary>Polaris iomd Policy Rules.</summary>
```

```
#####
```

```
## <summary>  
## Work (read, write, ioctl) with /dev/ngio[0-9+] devices  
## </summary>  
## <param name="domain">  
## <summary>  
## Domain allowed access.  
## </summary>  
## </param>
```

```
#  
interface(`polaris_ngio_dev_use',`  
gen_require(`  
type device_t;  
type polaris_ngio_device_t;  
)  
write_chr_files_pattern($1, device_t, polaris_ngio_device_t)  
read_chr_files_pattern($1, device_t, polaris_ngio_device_t)  
)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisiomd.if
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
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```

```
# All rights reserved
```

```
#
```

```
policy_module(polarisrepm, 1.0);
```

```
gen_require(`
```

```
    type polaris_repm_t;
```

```
`)
```

```
polaris_btrace_data_manage(polaris_repm_t)
```

```
polaris_crft_data_manage(polaris_repm_t)
```

```
polaris_chasfs_manage(polaris_repm_t)
```

```
polaris_tdlresolve_read(polaris_repm_t)
```

```
polaris_tdldb_list_dirs(polaris_repm_t)
```

```
polaris_cpld_read(polaris_repm_t)
```

```
polaris_lua_read(polaris_repm_t)
```

```
polaris_flashlib_read(polaris_repm_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_repm_t)
```

```
polaris_db_tdldb_dir_use(polaris_repm_t)
```

```
# allow to read /proc/meminfo
```

```
kernel_read_system_state(polaris_repm_t)
```

```
allow polaris_repm_t self:capability { sys_resource dac_override };
```

```
allow polaris_repm_t self:process setrlimit;
```

```
# temporary files created for repm in /tmp/replication
```

```
type polaris_repm_tmp_t;
```

```
files_tmp_file(polaris_repm_tmp_t)
```

```
polaris_systemd_tmpfiles_tmp_filetrans(polaris_repm_tmp_t, dir, "replication")
```

```
manage_files_pattern(polaris_repm_t, polaris_repm_tmp_t, polaris_repm_tmp_t)
```

```
polaris_dyncfg_tmp_read(polaris_repm_t)
```

```
polaris_tdldbpersist_setup(polaris_repm_t)
```

```
polaris_tmp_tdldb_persist_setup(polaris_repm_t)
```

```
# send syslog
```

```

logging_send_syslog_msg(polaris_repm_t)

# mq.-local_rp_1_0
type polaris_repm_local_rp_mqipc_t;
polaris_mqipc_type(polaris_repm_local_rp_mqipc_t)

polaris_mqipc_create_name(polaris_repm_t, polaris_repm_local_rp_mqipc_t, local_rp_1_0)
polaris_mqipc_create_name(polaris_repm_t, polaris_repm_local_rp_mqipc_t, local_rp_0_0)

# repm peer mqipc queues under /dev/shm/repm_peer_mq folder
type polaris_repm_peer_mqipc_t;
polaris_mqipc_type(polaris_repm_peer_mqipc_t)
polaris_mqipc_create_name_dir(polaris_repm_t, polaris_repm_peer_mqipc_t, repm_peer_mq)

# repm invokes installer_api_* api's which need access to /bootflash/.installer/install_issu_state
polaris_install_disk_read(polaris_repm_t)

#ifdef(^petra_platform',
#allow access to polaris_cm_rp sem for chasfs
polaris_cm_rp_sem_use(polaris_repm_t)
#allow access to /flash12/moncfg/cfg.dat for config
polaris_swipedrive_file_manage(polaris_repm_t)

)

# execute /bin/tar
corecmd_exec_bin(polaris_repm_t)
# tar reads /etc/passwd
auth_use_nsswitch(polaris_repm_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrepm.te
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#

## <summary>Polaris NGWC Platform Policy Rules.</summary>

#####
## <summary>
##   Manage ngwc shared memory /dev/shm/ngwc_shm.
## </summary>
## <param name="domain">

```

```

## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_ngwc_shm_manage',`
    gen_require(`
        type tmpfs_t;
        type polaris_ngwc_shm_t;
    `)
    fs_getattr_tmpfs($1)
    manage_files_pattern($1, tmpfs_t, polaris_ngwc_shm_t)
    allow $1 polaris_ngwc_shm_t:file map;
    filetrans_pattern($1, tmpfs_t, polaris_ngwc_shm_t, file, "ngwc_shm")
)

#####
## <summary>
## Manage ngwc shared memory /dev/shm/ngwc_scc_shm.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_ngwc_scc_shm_manage',`
    gen_require(`
        type tmpfs_t;
        type polaris_ngwc_scc_shm_t;
    `)
    fs_getattr_tmpfs($1)
    manage_files_pattern($1, tmpfs_t, polaris_ngwc_scc_shm_t)
    allow $1 polaris_ngwc_scc_shm_t:file map;
    filetrans_pattern($1, tmpfs_t, polaris_ngwc_scc_shm_t, file, "ngwc_scc_shm")
)

#####
## <summary>
## Manage ngwc shared memory /dev/shm/iomd_to_fed_ptp_offload.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_ngwc_itfpo_manage',`
    gen_require(`
        type tmpfs_t;
        type polaris_ngwc_itfpo_t;
    `)
    fs_getattr_tmpfs($1)
    manage_files_pattern($1, tmpfs_t, polaris_ngwc_itfpo_t)
    allow $1 polaris_ngwc_itfpo_t:file map;
    filetrans_pattern($1, tmpfs_t, polaris_ngwc_itfpo_t, file, "iomd_to_fed_ptp_offload")
)

```

```

#####
## <summary>
##   Manage ngwc sdm shared memory /dev/shm/sdm.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_sdm_shm_manage',`
    gen_require(`
        type tmpfs_t;
        type polaris_sdm_shm_t;
    `)
    fs_getattr_tmpfs($1)
    manage_files_pattern($1, tmpfs_t, polaris_sdm_shm_t)
    filetrans_pattern($1, tmpfs_t, polaris_sdm_shm_t, file, "sdm")
    allow $1 polaris_sdm_shm_t:file map;
)

```

```

#####
# MMAP Driver for mapping ASIC Memory space
#####
#####
## <summary>
##   Work (read, write, ioctl) with /dev/chdrvmmmap
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_chdrvmmmap_dev_use',`
    gen_require(`

```

```

        type device_t;
        type polaris_chdrvmmmap_device_t;
    )
    read_chr_files_pattern($1, device_t, polaris_chdrvmmmap_device_t)
    write_chr_files_pattern($1, device_t, polaris_chdrvmmmap_device_t)
    allow $1 polaris_chdrvmmmap_device_t:chr_file map;
)

#####
## <summary>
##   Work (read, write, ioctl) with /dev/gettysburg_dev1
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_gettysburg_fpga_dev_use',`
gen_require(`
    type device_t;
    type polaris_gettysburg_fpga_device_t;
)
    write_chr_files_pattern($1, device_t, polaris_gettysburg_fpga_device_t)
    read_chr_files_pattern($1, device_t, polaris_gettysburg_fpga_device_t)
    mmap_chr_files_pattern($1, device_t, polaris_gettysburg_fpga_device_t)
)

#####
## <summary>
##   Work (read, write, ioctl) with /dev/cisco/dplriomem
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_dplr_iomem_mmapdrv_dev_use',`
gen_require(`
    type device_t;
    type polaris_dplr_iomem_mmapdrv_device_t;
)
    write_chr_files_pattern($1, device_t, polaris_dplr_iomem_mmapdrv_device_t)
    read_chr_files_pattern($1, device_t, polaris_dplr_iomem_mmapdrv_device_t)
    allow $1 polaris_dplr_iomem_mmapdrv_device_t:chr_file map;
)

```

```
#####
## <summary>
## Allow access to semaphore of quake flashlib. Pure hack
## semaphore got created by dyncfg accidently, need to change to
## POSIX semaphore code ASAP.
## LOOK AT ME
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_quake_flashlib_sem_use`,`
    gen_require(`
        type polaris_dyncfg_t;
    `)
    allow $1 polaris_dyncfg_t:sem rw_sem_perms;
`)
```

```
#####
## <summary>
## Manage quake i2c semaphores /dev/shm/sem.i2c_sem00N
## and work with corresponding i2c devices (/dev/i2c-XXX)
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_quake_i2c_manage`,`
    gen_require(`
        type tmpfs_t;
        type polaris_quake_i2c_t;
    `)
    manage_files_pattern($1, tmpfs_t, polaris_quake_i2c_t)
    polaris_i2c_use($1)
`)
```

```
#####
## <summary>
## Allow caller to read or write the exiting_bays file
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
```

```

## </param>
interface(`polaris_rw_exiting_bays`,`
gen_require(`
type polaris_proc_exiting_bays_t;
type proc_t;
`)

rw_files_pattern($1, polaris_proc_exiting_bays_t, polaris_proc_exiting_bays_t)
# FIXME/TODO:
# The kernel does not reliably create /proc/exiting_bays on all platforms
# The following lines should be removed when CSCvv27097 is addressed
allow $1 polaris_proc_exiting_bays_t:file create;
allow $1 proc_t:file create;
allow $1 proc_t:dir { add_name write };
`)

#####
## <summary>
## Allow caller to create open write /tmp/fpga_upgrade
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_fpga_upgrade_tmp_use`,`
gen_require(`
type polaris_fpga_upgrade_tmp_t;
`)
allow $1 polaris_fpga_upgrade_tmp_t:file { create open write };
`)

#####
## <summary>
## Execute a domain transition to run cat9k_ssd_unmount.sh
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_ssd_unmount_domtrans`,`
gen_require(`
type polaris_ssd_unmount_t, polaris_ssd_unmount_exec_t;
`)
domtrans_pattern($1, polaris_ssd_unmount_exec_t, polaris_ssd_unmount_t)

```

)

#####

## <summary>

## Read lnk\_file /ucode0, polaris\_disk\_ucode0\_t.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_disk\_ucode0\_read\_lnk`,`

gen\_require(`

type polaris\_disk\_ucode0\_t;

`)

read\_lnk\_files\_pattern(\$1, polaris\_disk\_ucode0\_t, polaris\_disk\_ucode0\_t)

)

#####

## <summary>

## Work (read, write, ioctl) with /dev/cisco/fpga\_iomem

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_fpga\_iomem\_mmapfpga\_dev\_use`,`

gen\_require(`

type device\_t;

type polaris\_fpga\_iomem\_mmapfpga\_device\_t;

`)

allow \$1 polaris\_fpga\_iomem\_mmapfpga\_device\_t:chr\_file map;

write\_chr\_files\_pattern(\$1, device\_t, polaris\_fpga\_iomem\_mmapfpga\_device\_t)

read\_chr\_files\_pattern(\$1, device\_t, polaris\_fpga\_iomem\_mmapfpga\_device\_t)

)

#####

## <summary>

## Read Write access to /bootflash/nplusm-power

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

```
#
interface(`polaris_nplum_power_manage',`
    gen_require(`
        type polaris_nplum_power_file_t;
        type polaris_disk_bootflash_t;
    `)
    filetrans_pattern($1, polaris_disk_bootflash_t, polaris_nplum_power_file_t, file, "nplum-power")
    allow $1 polaris_nplum_power_file_t:file { write create read open getattr unlink };
)`)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwc.if
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
# Copyright (c) 2016-2019 by Cisco Systems, Inc.
# All rights reserved
#
```

```
/usr/binos/conf/boothelper_evt.sh -- gen_context(system_u:object_r:polaris_boothelper_evt_exec_t,s0)
/tmp/udev(/.*)?          gen_context(system_u:object_r:polaris_udev_tmp_files_t,s0)
```

```
/tmp/rommon_upgrade_ngwc(/.*)?    gen_context(system_u:object_r:polaris_boothelper_tmp_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisboothelper.fc
No license file was found, but licenses were detected in source scan.
```

```
#
# December 2018, Victor Kamensky
#
# Copyright (c) 2018-2019 by Cisco Systems, Inc.
# All rights reserved
#
```

```
## <summary>Polaris ezman_cc Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisezmancc.if
No license file was found, but licenses were detected in source scan.
```

```
dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
```

```
dnl
define(`polaris_lipc_service_server',`)
define(`polaris_lipc_service_client',`')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_lipc_fc.m4
```

No license file was found, but licenses were detected in source scan.

```
#
# July 2019, Victor Kamensky
#
# Copyright (c) 2019 by Cisco Systems, Inc.
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#
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisgrmgr.fc
```

No license file was found, but licenses were detected in source scan.

```
#
# July 2017, Victor Kamensky
#
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#
```

```
/usr/binos/conf/install_issu_monitor.sh -- gen_context(system_u:object_r:polaris_issu_monitor_exec_t,s0)
/tmp/rp/issu_mon_dir -d gen_context(system_u:object_r:polaris_issu_monitor_tmp_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisissumonitor.fc
```

No license file was found, but licenses were detected in source scan.

```
#
# March 2019, Shikhar Dogra
#
# Copyright (c) 2019 by Cisco Systems, Inc.
# All rights reserved
#
```

```
## <summary>Polaris fman_cc Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfmancc.if
```

No license file was found, but licenses were detected in source scan.

```
#
# March 2017, Victor Kamensky
```

```

#
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#

## <summary>Polaris smand Policy Rules.</summary>

#####
## <summary>
## Allow domain to be started by smand with
##   transition into specific service domain.
## </summary>
## <param name="domain">
## <summary>
## Type to be used to run utility.
## </summary>
## </param>
## <param name="entry_point">
## <summary>
## Type of the program to be used as an entry point to this domain.
## </summary>
## </param>
interface(`polaris_smand_domain`,`
  gen_require(`
    type polaris_smand_t;
  `)

  domtrans_pattern(polaris_smand_t, $2, $1)
)

#####
## <summary>
## Write into fifo file created by smand, typical case when
##   smand starts script under popen.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolecap/>
#
interface(`polaris_smand_use_fifo`,`
  gen_require(`
    type polaris_smand_t;
  `)

  write_fifo_files_pattern($1, polaris_smand_t, polaris_smand_t)
)

```

```

)

#####
## <summary>
##   Read access to CRDU fifo file created by smand
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolecap/>
#
interface(`polaris_smand_crdu_pipe_read`,`
    gen_require(`
        type polaris_crdu_pipe_tmp_t;
    `)

    read_fifo_files_pattern($1, polaris_crdu_pipe_tmp_t, polaris_crdu_pipe_tmp_t)
)

#####
## <summary>
##   Manage CRDU fifo file created by smand
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolecap/>
#
interface(`polaris_smand_crdu_pipe_manage`,`
    gen_require(`
        type polaris_crdu_pipe_tmp_t;
    `)

    manage_fifo_files_pattern($1, polaris_crdu_pipe_tmp_t, polaris_crdu_pipe_tmp_t)
)

#####
## <summary>
##   Write to polaris_sman_bshell_serv_lipc_t
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to connect and write into this lipc file.
##   </summary>

```

```

## </param>
#
interface(`polaris_sman_bshell_serv_lipc_write`,`
    gen_require(`
        type polaris_sman_bshell_serv_lipc_t;
        type polaris_smand_t;
    `)
    polaris_lipc_write($1, polaris_sman_bshell_serv_lipc_t, polaris_smand_t)
`)

#####
## <summary>
## Manage /tmp/show_ports_tmp
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to manage tmp files.
## </summary>
## </param>
## <rolecap/>
interface(`polaris_trans_ports_tmp_manage`,`
    gen_require(`
        type polaris_trans_stats_tmp_t;
    `)
    manage_files_pattern($1, polaris_trans_ports_tmp_t, polaris_trans_ports_tmp_t)
`)

#####
## <summary>
## create /tmp/trans_tmp and /tmp/trans_tmp.1 to store lsof output
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to manage tmp files.
## </summary>
## </param>
## <rolecap/>
interface(`polaris_trans_stats_tmp_manage`,`
    gen_require(`
        type polaris_trans_stats_tmp_t;
    `)
    manage_files_pattern($1, polaris_trans_stats_tmp_t, polaris_trans_stats_tmp_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarissmand.if

No license file was found, but licenses were detected in source scan.

#

```
# July 2017, Victor Kamensky
#
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#
```

```
/usr/cpp/bin/cpp_cdm_svr -- gen_context(system_u:object_r:polaris_cpp_cdm_exec_t,s0)
```

```
Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscppcdm.fc
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
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#
```

```
## <summary>Polaris Flashlib Policy Rules.</summary>
```

```
#####
# Flashlib policy (infra/flashlib)
#####
```

```
#####
```

```
## <summary>
## Read Polaris /tmp/.flashlock file
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
```

```
interface(`polaris_flashlib_lock`,`
gen_require(`
    type tmp_t;
    type polaris_flashlib_lock_t;
`)
```

```
manage_files_pattern($1, tmp_t, polaris_flashlib_lock_t)
allow $1 self:capability dac_override;
```

```
ifdef(`quake_platform`,`
    polaris_quake_flashlib_sem_use($1)
`)
```

```
# access of .flashlock on ultra
```

```

    ifdef(`vxe_family',`
        allow $1 self:capability dac_override;
    ')
)

#####
## <summary>
## Write Polaris /tmp/flashdev.log file
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_flashlib_log',`
    gen_require(`
        type tmp_t;
        type polaris_flashlib_log_t;
    ')

    manage_files_pattern($1, tmp_t, polaris_flashlib_log_t)
)

#####
## <summary>
## Read partition disk device that contains rommon variables.
## C8KV reads object store and reads grub files in BIOS and EFI partitions.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_flashlib_read',`
    gen_require(`
        type device_t;
        type polaris_flashlib_device_t;
    ')

    polaris_flashlib_lock($1)
    polaris_flashlib_log($1)
    read_blk_files_pattern($1, device_t, polaris_flashlib_device_t)
    read_chr_files_pattern($1, device_t, polaris_flashlib_device_t)
    ifdef(`vxe_family',`
        polaris_vxeinstall_info_read($1)
        polaris_grub_info_read($1)
    ')
)

```

```

ifdef(`vwlc_platform',`
    polaris_vwlcinstall_info_read($1)
    polaris_vwlc_grub_info_read($1)
`)

# processes that use tdlld/DB will access romvar
# via flashlib mcp_getmonvar API which read /objstore.
optional_policy(`
    polaris_disk_objstore_read($1)
`)
polaris_flash_shm_manage($1)
`)

#####
## <summary>
## Write partition disk device that contains rommon variables.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_flashlib_write',`
    gen_require(`
        type device_t;
        type polaris_flashlib_device_t;
    `)

    polaris_flashlib_lock($1)
    write_blk_files_pattern($1, device_t, polaris_flashlib_device_t)
    polaris_flash_shm_manage($1)
`)

#####
## <summary>
## Manage ngwc shared memory /dev/shm/flash_shm.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_flash_shm_manage',`
    gen_require(`
        type tmpfs_t;
        type polaris_flash_shm_t;
    `)

```

```
)  
fs_getattr_tmpfs($1)  
manage_files_pattern($1, tmpfs_t, polaris_flash_shm_t)  
allow $1 polaris_flash_shm_t:file map;  
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisflashlib.if

No license file was found, but licenses were detected in source scan.

```
#  
# March 2017, Victor Kamensky  
#  
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#
```

```
## <summary>Polaris LUA Policy Rules.</summary>
```

```
#####  
# Lua policy  
#####
```

```
#####
```

```
## <summary>  
## Read Polaris lua files (/lua)  
## </summary>  
## <param name="domain">  
## <summary>  
## Domain allowed access.  
## </summary>  
## </param>  
#
```

```
interface(`polaris_lua_read`,  
gen_require(`  
type polaris_lua_file_t;  
)
```

```
allow $1 polaris_lua_file_t:file read_file_perms;  
allow $1 polaris_lua_file_t:dir { read_file_perms search_dir_perms };  
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislua.if

No license file was found, but licenses were detected in source scan.

```
#  
# July 2017, Victor Kamensky
```

```
#
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#

## <summary>Polaris tamd_rp Policy Rules.</summary>
```

```
Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristamdrp.if
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
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#
```

```
## <summary>Polaris polarisiptbl Policy Rules.</summary>
```

```
Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisiptbl.if
No license file was found, but licenses were detected in source scan.
```

```
#
# April 2018, Victor Kamensky
#
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#
```

```
# autopolarisplatformipcbase file contexts place holder
```

```
Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/autopolarisplatformipcbase.fc
No license file was found, but licenses were detected in source scan.
```

```
#
# February 2020, Victor Kamensky
#
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#
```

```
policy_module(polarisdmiportsfetch, 1.0);
```

```
gen_require(^
    type polaris_dmi_ports_fetch_t;
```

```
)  
polaris_chasfs_manage(polaris_dmi_ports_fetch_t)  
polaris_tdlresolve_read(polaris_dmi_ports_fetch_t)  
polaris_cpld_read(polaris_dmi_ports_fetch_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmiportsfetch.te
```

No license file was found, but licenses were detected in source scan.

```
#  
# July 2018, Victor Kamensky  
#  
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# All rights reserved  
#
```

```
policy_module(polarisngwcfeddebug, 1.0);
```

```
gen_require(  
    type polaris_ngwc_fed_debug_mgr_t;  
)
```

```
polaris_bootflash_manage(polaris_ngwc_fed_debug_mgr_t)  
polaris_btrace_data_manage(polaris_ngwc_fed_debug_mgr_t)  
polaris_cpld_read(polaris_ngwc_fed_debug_mgr_t)  
polaris_flashlib_read(polaris_ngwc_fed_debug_mgr_t)  
polaris_chasfs_read(polaris_ngwc_fed_debug_mgr_t)  
polaris_tdlresolve_read(polaris_ngwc_fed_debug_mgr_t)
```

```
polaris_disk_bootflash_read_lnk(polaris_ngwc_fed_debug_mgr_t)  
polaris_dmammap_dev_use(polaris_ngwc_fed_debug_mgr_t)  
polaris_chdrvmmmap_dev_use(polaris_ngwc_fed_debug_mgr_t)  
polaris_dplr_iomem_mmapdrv_dev_use(polaris_ngwc_fed_debug_mgr_t)
```

```
# opens /proc/pid/net/dev  
kernel_read_network_state(polaris_ngwc_fed_debug_mgr_t)
```

```
# calls tcpdump, let it run in its own domain  
netutils_domtrans(polaris_ngwc_fed_debug_mgr_t)
```

```
# calls system function  
corecmd_exec_shell(polaris_ngwc_fed_debug_mgr_t)
```

```
# calls lspci and other utilities  
corecmd_exec_bin(polaris_ngwc_fed_debug_mgr_t)
```

```
auth_use_nsswitch(polaris_ngwc_fed_debug_mgr_t)
```

```

# lspci needs sysfs access
dev_list_sysfs(polaris_ngwc_fed_debug_mgr_t)
dev_read_sysfs(polaris_ngwc_fed_debug_mgr_t)

# dope.py /tmp/idope_svr, /tmp/shfwd_svr socket files
type polaris_fed_debug_sock_t;
files_tmp_file(polaris_fed_debug_sock_t)

files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_sock_t, sock_file, "idope_svr")
files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_sock_t, sock_file, "shfwd_svr")

gen_require(
    type tmp_t;
)
manage_sock_files_pattern(polaris_ngwc_fed_debug_mgr_t, tmp_t, polaris_fed_debug_sock_t)

# allow show-forward to use following temp files in /tmp dir
type polaris_fed_debug_tmp_t;
files_tmp_file(polaris_fed_debug_tmp_t)
files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_tmp_t, file, "pktgen.txt")
files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_tmp_t, file, "DopeElam.sh")
files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_tmp_t, file, "MemDumpElam.sh")
gen_require(
    type tmp_t;
)
manage_files_pattern(polaris_ngwc_fed_debug_mgr_t, { tmp_t polaris_fed_debug_tmp_t },
polaris_fed_debug_tmp_t)

# talk to fed over unix sockets
polaris_fed_sock_write(polaris_ngwc_fed_debug_mgr_t)

# /dcmlog.txt
type polaris_fed_debug_dcmlog_t;
files_type(polaris_fed_debug_dcmlog_t)
gen_require(
    type root_t;
)
filetrans_pattern(polaris_ngwc_fed_debug_mgr_t, root_t, polaris_fed_debug_dcmlog_t, file, "dcmlog.txt")
manage_files_pattern(polaris_ngwc_fed_debug_mgr_t, root_t, polaris_fed_debug_dcmlog_t)

# dope.py listens on port 12255
corenet_tcp_bind_generic_node(polaris_ngwc_fed_debug_mgr_t)
allow polaris_ngwc_fed_debug_mgr_t self:tcp_socket { getattr setopt ioctl getopt bind create listen accept connect
read write };
corenet_tcp_bind_polaris_fed_debug_trace_rpc_port(polaris_ngwc_fed_debug_mgr_t)
corenet_tcp_connect_polaris_fed_debug_trace_rpc_port(polaris_ngwc_fed_debug_mgr_t)

# dope.py listens on port 5389 for shfwd commands

```

```

corenet_tcp_bind_polaris_fed_debug_shfwd_command_port(polaris_ngwc_fed_debug_mgr_t)

# LOOK AT ME: /dev/mem access restriction remove after fix for CSCvm07702 is
# committed.
#ifdef(`nyquist_platform',`
polaris_dev_mem_use(polaris_ngwc_fed_debug_mgr_t)
`)
#ifdef(`starfleet_platform',`
polaris_dev_mem_use(polaris_ngwc_fed_debug_mgr_t)
`)
#ifdef(`quake_platform',`
polaris_dev_mem_use(polaris_ngwc_fed_debug_mgr_t)
`)

# /tmp/asic_config.pickle file access
type polaris_fed_debug_asic_config_t;
files_tmp_file(polaris_fed_debug_asic_config_t);
files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_asic_config_t, file, "asic_config.pickle")
gen_require(`
    type tmp_t;
`)
manage_files_pattern(polaris_ngwc_fed_debug_mgr_t, tmp_t, polaris_fed_debug_asic_config_t)

# dope.py invokes scapy.py for DP trace which needs to create socket to seek
# interface info via ioctl ifreq
allow polaris_ngwc_fed_debug_mgr_t self:udp_socket { create ioctl };

# /tmp/rdope_ffi handle directory where libffi will create file with execute
# mapping. Files system should be executable and /tmp so far is. Note TMPDIR
# environment variable is the first choice where to create libffi executable
# mapped files.
type polaris_fed_debug_ffi_t;
files_tmp_file(polaris_fed_debug_ffi_t);
files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_ffi_t, dir, "rdope_ffi")
gen_require(`
    type tmp_t;
`)
manage_dirs_pattern(polaris_ngwc_fed_debug_mgr_t, tmp_t, polaris_fed_debug_ffi_t)
manage_files_pattern(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_ffi_t, polaris_fed_debug_ffi_t)
allow polaris_ngwc_fed_debug_mgr_t polaris_fed_debug_ffi_t:file { execute map };

# allow to read /proc/mtd called from mcp_getmonvar
kernel_read_system_state(polaris_ngwc_fed_debug_mgr_t)

polaris_remap_mem_dev_use(polaris_ngwc_fed_debug_mgr_t)

allow polaris_ngwc_fed_debug_mgr_t self:capability sys_resource;

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngwcfeddebug.te

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dnl

dnl April 2018, Victor Kamensky

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dnl

dnl Process Names Map

```
define(`process_map', `defn(format(`process_map[%s]', ` $1'))')
```

```
define(`process_map_set', `define(format(`process_map[%s]', ` $1'), ` $2'))')
```

dnl Process Names and Labels

```
define(`process_short_name', `patsubst($1, `^BPROC_', `')')
```

```
define(`process_default_stem', `translit(process_short_name($1), `A-Z', `a-z')')
```

```
define(`process_stem', `ifelse(process_map(process_short_name($1)), `', process_default_stem($1),  
process_map(process_short_name($1)))')
```

```
define(`process_label', `format(` polaris_%s_t', process_stem($1))')
```

```
define(`process_exec_label', `format(` polaris_%s_exec_t', process_stem($1))')
```

dnl Process Type Map: track that type declations unique

```
define(`process_type_map', `defn(format(`process_type_map[%s]', ` $1'))')
```

```
define(`process_type_map_set', `define(format(`process_type_map[%s]', ` $1'), ` $2'))')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_process.m4

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dnl

```
process_map_set(AUTO_UPGRADE_CLIENT_RP, autoupgrade)
```

```
process_map_set(BSM_RP, bsm)
```

```
process_map_set(BTM_CC, btman)
```

```
process_map_set(BTM_FP, btman)
```

```
process_map_set(BTM_RP, btman)
```

```
process_map_set(BTM_BP, btman)
```

```
process_map_set(CCD_RP, caf)
```

```
process_map_set(DMI_CONFD, confd)
```

```
process_map_set(DMI_PTTCD, pttcd)
```

```
process_map_set(SDWAN_CONFD, confd)
```

```
process_map_set(EMD_CC, emd)
```

```
process_map_set(EMD_FP, emd)
process_map_set(EMD_RP, emd)
process_map_set(FCD_RP, flashcheck)
process_map_set(FM_FP, fman_fp)
process_map_set(FM_CC, fman_cc)
process_map_set(FM_RP, fman_rp)
process_map_set(HM_CC, hm)
process_map_set(HM_FP, hm)
process_map_set(HM_RP, hm)
process_map_set(IOMD_CC, iomd)
process_map_set(IOSD_CC, iosd)
process_map_set(IOSD_RP, iosd)
process_map_set(IOSD_BP, iosd)
process_map_set(IOXM_RP, ioxman)
process_map_set(ISSU_STK, issu_stack)
process_map_set(LM_RP, lm)
process_map_set(MAINT_RP, periodic)
process_map_set(PLOGD_CC, plogd)
process_map_set(PLOGD_FP, plogd)
process_map_set(PLOGD_RP, plogd)
process_map_set(REPM_RP, repm)
process_map_set(SERVICE_MGR_RP, service_mgr)
process_map_set(SERVICE_MGR_FP, service_mgr)
process_map_set(SM, smand)
process_map_set(SORT_RP, sort_files)
process_map_set(VMAN_RP, vman)
process_map_set(POLJVM, jvm)
process_map_set(CLUSTERMGR, clustermgr)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/processmap.m4
```

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dnl

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dnl

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dnl

divert(-1)

```
include(`polaris_process.m4')
```

```
include(`polaris_database_db.m4')
```

```
include(`polaris_database_db_if.m4')
```

```
include(`polaris_max_scope.m4')
```

```
divert(0)dnl
#
# This is a generated file! Instead of modifying this file,
# modify proper platform TDL file.
#
## <summary>Polaris Platform DB Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_database_if.m4
No license file was found, but licenses were detected in source scan.
```

```
dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2020 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl VXE Platform Max Bay Limits
max_bay_map_set(`rp', `per_bay', 0)
max_bay_map_set(`cc', `per_bay', 0)
max_bay_map_set(`fp', `per_bay', 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/vxemaps.m4
No license file was found, but licenses were detected in source scan.
```

```
#
# January 2021, Gabriel Lee, Shawn Liu
#
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# All rights reserved
#
```

```
/ezManage_v1/ezManage_sms_handler.py -- gen_context(system_u:object_r:polaris_ezmanage_exec_t,s0)
```

```
/ezManage_v1(/.*)? gen_context(system_u:object_r:polaris_ezmanage_file_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisezmanage.fc
No license file was found, but licenses were detected in source scan.
```

```
#
# April 2017, Victor Kamensky
#
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#
```

## <summary>Polaris dmi\_vtyserverutild Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmi\_vtyserverutild.if  
No license file was found, but licenses were detected in source scan.

```
#
# August 2017, Victor Kamensky
#
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# All rights reserved
#

# polarisbsm file contexts place holder
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbsm.fc  
No license file was found, but licenses were detected in source scan.

```
#
# February 2020, Victor Kamensky
#
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#
```

## <summary>Polaris dmi\_ports\_fetch Policy Rules.</summary>

#####

## <summary>

## Work with /bootflash/sdavc

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_sdavc\_proxy\_manage`,`

gen\_require(`

type polaris\_sdavc\_proxy\_files\_t;

`)

manage\_files\_pattern(\$1, polaris\_sdavc\_proxy\_files\_t, polaris\_sdavc\_proxy\_files\_t)

manage\_dirs\_pattern(\$1, polaris\_sdavc\_proxy\_files\_t, polaris\_sdavc\_proxy\_files\_t)

`)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisssdavcproxy.if

No license file was found, but licenses were detected in source scan.

```
#
# March 2017, Victor Kamensky
#
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#

/usr/binos/bin/cman_fp_ledp -- gen_context(system_u:object_r:polaris_cm_fp_exec_t,s0)
/usr/binos/bin/cman_fp_us_ledp -- gen_context(system_u:object_r:polaris_cm_fp_exec_t,s0)
/usr/binos/bin/cman_fp_vwlc -- gen_context(system_u:object_r:polaris_cm_fp_exec_t,s0)
/usr/binos/bin/cman_fp_vwlc_ledp -- gen_context(system_u:object_r:polaris_cm_fp_exec_t,s0)
/usr/binos/bin/cman_fp_sumatra_ledp -- gen_context(system_u:object_r:polaris_cm_fp_exec_t,s0)

/usr/binos/conf/mcp_pcie_status_cmd.sh -- gen_context(system_u:object_r:polaris_pcie_status_cmd_exec_t,s0)

/dev/hkp -c gen_context(system_u:object_r:polaris_hkp_device_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscmfp.fc
No license file was found, but licenses were detected in source scan.
```

```
#
# June 2020, Manu Roy
#
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#
```

```
# /bootflash labels
/bootflash(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/bootflash/.ssh(/.*)? gen_context(system_u:object_r:ssh_home_t,s0)
/bootflash/.ssh/ssh_host.*_key\pub gen_context(system_u:object_r:ssh_key_t,s0)
/bootflash/.ssh/ssh_host.*_key gen_context(system_u:object_r:ssh_key_t,s0)
/bootflash/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)

# /flash is symbolic link /flash10/USER
/flash gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

#/flash1
/flash1(/.*)? gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)
/flash1/CRASH(/.*)? gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)
/flash1/CRASH/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/flash7(/.*)? gen_context(system_u:object_r:polaris_disk_license_t,s0)
/flash8(/.*)? gen_context(system_u:object_r:polaris_disk_license_t,s0)
/flash9(/.*)? gen_context(system_u:object_r:polaris_obfl_data_t,s0)
```

```

# /flash10
# USER is a reserved selinux keyword - escape it like this
/flash10(/.*)?          gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/flash10/USE[R]/core(/.*)?  gen_context(system_u:object_r:polaris_core_file_t,s0)
/flash10/USE[R]/nvram_config -- gen_context(system_u:object_r:polaris_nvram_file_t,s0)
/flash10/USER/.ssh/ssh_host_rsa_key -- gen_context(system_u:object_r:ssh_key_t,s0)

#sdflash
/dev/mmcblk1p1 -b          gen_context(system_u:object_r:polaris_iots_swipedrive_device_t,s0)
/dev/sdflash              gen_context(system_u:object_r:polaris_iots_swipedrive_file_t,s0)
/sdflash                  gen_context(system_u:object_r:polaris_iots_swipedrive_file_t,s0)
#usb device
/dev/sda1 -b              gen_context(system_u:object_r:polaris_iots_swipedrive_device_t,s0)

#DMA ASIC driver
/dev/mvDmaDrv             gen_context(system_u:object_r:polaris_iots_mvDmaDrv_device_t,s0)
/dev/mvIntDrv             gen_context(system_u:object_r:polaris_iots_mvIntDrv_device_t,s0)

# /crashinfo is symbolic link to /mnt/sd1 created by systemd-tmpfiles
/crashinfo                gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)

#/dev
/dev/petra-fpga -c        gen_context(system_u:object_r:polaris_iots_fpga_device_t,s0)
/dev/petra-zynq-ps-gpio -c  gen_context(system_u:object_r:polaris_iots_fpga_device_t,s0)
/dev/petra-gpio-pc3 -c     gen_context(system_u:object_r:polaris_iots_fpga_device_t,s0)
#Line card fpga driver for mmap
/dev/petra-lc-fpga -c     gen_context(system_u:object_r:polaris_iots_fpga_device_t,s0)

#memory devices
/dev/tm -c                gen_context(system_u:object_r:polaris_iots_tm_device_t,s0)
/dev/hcam -c              gen_context(system_u:object_r:polaris_iots_tm_device_t,s0)
#vlan-virtual ethernet
/dev/petra-krport -c     gen_context(system_u:object_r:polaris_iots_tm_device_t,s0)

/tmp/udev/etc/udev/sdflash/udev-info gen_context(system_u:object_r:polaris_udev_tmp_files_t,s0)

# hellcat
/dev/spidev0.0 -c         gen_context(system_u:object_r:polaris_iots_led_device_t,s0)
/dev/spidev0.1 -c         gen_context(system_u:object_r:polaris_iots_led_device_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisiotsswitch.fc
No license file was found, but licenses were detected in source scan.

#
# March 2017, Victor Kamensky
#
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```

```

# All rights reserved
#

policy_module(polarisngwcfed, 1.0);

gen_require(
    type polaris_ngwc_fed_t;
)

polaris_btrace_data_manage(polaris_ngwc_fed_t)
polaris_chasfs_manage(polaris_ngwc_fed_t)
polaris_tdlresolve_read(polaris_ngwc_fed_t)
polaris_tdlldb_list_dirs(polaris_ngwc_fed_t)
polaris_lua_read(polaris_ngwc_fed_t)
polaris_flashlib_read(polaris_ngwc_fed_t)
polaris_chasync_files_manage(polaris_ngwc_fed_t)

# LOOK AT ME: system() call restriction remove after
# CSCvn19282 is fixed using CSCvn19287.
#
# fed executes cp_trace_request.sh when a sv stack split occurs.
# cp_trace_request.sh does source of pglobals.sh which requires the
# access of /crashinfo.
polaris_disk_crashinfo_getattr(polaris_ngwc_fed_t)

polaris_ripc_sman_ui_serv_connect(polaris_ngwc_fed_t)

polaris_db_tdlldb_dir_use(polaris_ngwc_fed_t)

corecmd_exec_bin(polaris_ngwc_fed_t)
corecmd_exec_shell(polaris_ngwc_fed_t)

# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_ngwc_fed_t)

# allow to read /proc/meminfo
kernel_read_system_state(polaris_ngwc_fed_t)

# allow read/write to /proc/irq/N/irq files
kernel_rw_irq_sysctls(polaris_ngwc_fed_t)

polaris_obfl_data_manage(polaris_ngwc_fed_t)
polaris_lsmapi_dev_use(polaris_ngwc_fed_t)

allow polaris_ngwc_fed_t self:capability { sys_rawio dac_override ipc_owner sys_nice ipc_lock };
allow polaris_ngwc_fed_t self:capability2 block_suspend;

polaris_dyncfg_tmp_read(polaris_ngwc_fed_t)

```

```

optional_policy(
polaris_ngwc_shm_manage(polaris_ngwc_fed_t)
')

optional_policy(
polaris_ngwc_scc_shm_manage(polaris_ngwc_fed_t)
')

# cpp bleeds into switching platforms through fman_fp and fed
# apparently even on nyquist fed creates /tmp/cpp_anon_db
polaris_cpp_process(polaris_ngwc_fed_t)
polaris_cpp_tmp_files_use(polaris_ngwc_fed_t)

optional_policy(
# /dev/dplr_intrpt usage
polaris_dplr_dev_use(polaris_ngwc_fed_t)

# /dev/dmammap usage
polaris_dmammap_dev_use(polaris_ngwc_fed_t)

# /dev/remap_mem0 usage
polaris_remap_mem_dev_use(polaris_ngwc_fed_t)
')

# /dev/cli2xcvr_pipe and /dev/xcvr2cli_pipe
type polaris_fed_xcvr_pipe_t;
files_type(polaris_fed_xcvr_pipe_t)
dev_associate(polaris_fed_xcvr_pipe_t)
gen_require(
    type device_t;
)
filetrans_pattern(polaris_ngwc_fed_t, device_t, polaris_fed_xcvr_pipe_t, fifo_file, "cli2xcvr_pipe")
filetrans_pattern(polaris_ngwc_fed_t, device_t, polaris_fed_xcvr_pipe_t, fifo_file, "xcvr2cli_pipe")
manage_fifo_files_pattern(polaris_ngwc_fed_t, device_t, polaris_fed_xcvr_pipe_t)

polaris_disk_bootflash_search(polaris_ngwc_fed_t)

allow polaris_ngwc_fed_t self:process setsched;

# work with /dev/msi/Slot0/Doppler0/GroupN files
dev_rw_generic_chr_files(polaris_ngwc_fed_t)

# read /sys/devices/system/cpu/online
dev_read_sysfs(polaris_ngwc_fed_t)

# bind to shfwd port
corenet_udp_bind_polaris_ngwc_fed_shfwd_port(polaris_ngwc_fed_t)

```

```

# connect to shfwd port
corenet_tcp_connect_polaris_fed_debug_shfwd_command_port(polaris_ngwc_fed_t)

# creates and write /flash/shfwd_params.txt file
polaris_bootflash_manage(polaris_ngwc_fed_t)

# use polaris_ngwc_fed_t as syslog_client_type
logging_send_syslog_msg(polaris_ngwc_fed_t)

# bind to dbgmn port
corenet_udp_bind_polaris_ngwc_fed_dbgmn_port(polaris_ngwc_fed_t)

corenet_udp_bind_generic_node(polaris_ngwc_fed_t)
allow polaris_ngwc_fed_t self:udp_socket { bind create getopt };

optional_policy(`
# on macallan cman_fp needs access to /dev/cisco/dplriomem
# for mapping dplr io memory to application space.
polaris_dplr_iomem_mmapdrv_dev_use(polaris_ngwc_fed_t);
`)

# On Macallan as part of doppler sdk_asic_init(), a
# rw call is made to /dev/cpld
polaris_cpld_dev_use(polaris_ngwc_fed_t)
polaris_cpld_read(polaris_ngwc_fed_t)
#ptp_init_systemclock() called during fed process init writes
# /sys/devices/platform/cpld/reg_doppe_1588_sync
polaris_cpld_write(polaris_ngwc_fed_t)

optional_policy(`
# In Macallan cards which use Doppler ASIC,
# ngmod_doppler_mmap() api is called to get hold of
# MMapped Asic address. As part of the operation it uses
# /dev/chdrvmmmap device.
polaris_chdrvmmmap_dev_use(polaris_ngwc_fed_t)
`)

# LOOK AT ME: /dev/mem access restriction remove after
# CSCvk00737 is fixed using CSCvk00741
#ifdef(`nyquist_platform',`
polaris_dev_mem_use(polaris_ngwc_fed_t)
`)

# LOOK AT ME: /dev/mem access restriction remove after
# CSCvm34589 is fixed using CSCvm34617
#ifdef(`starfleet_platform',`

```

```

polaris_dev_mem_use(polaris_ngwc_fed_t)
')

# LOOK AT ME: /dev/mem access restriction remove after
# CSCvn64182 is fixed using CSCvn64184
#ifdef(^quake_platform',`
polaris_dev_mem_use(polaris_ngwc_fed_t)
')

#ifdef(^sumatra_platform',`
# LOOK AT ME: After direct usage of /dev/mem is removed (CSCvw80796)
polaris_dev_mem_use(polaris_ngwc_fed_t)
polaris_sumatra_doppler_dev_use(polaris_ngwc_fed_t)
')

# LOOK AT ME: /dev/mem access restriction remove after
# CSCvn08008 is fixed using CSCvn08019.
# FED accesses raw memory (/dev/mem) for sending/receiving OOB
# traffic on an FSS interface.
#ifdef(^passport_platform',`
polaris_dev_mem_use(polaris_ngwc_fed_t)
')

#Entropy number is read from ACT2 and stored in /tmp/hw_entropy
#Allow sesa library read from /tmp/hw_entropy to update random
#number seed.
polaris_hw_entropy_read(polaris_ngwc_fed_t)

# fed is server for /tmp/dbgmn_log_svr socket file
type polaris_fed_sock_t;
files_tmp_file(polaris_fed_sock_t)

files_tmp_filetrans(polaris_ngwc_fed_t, polaris_fed_sock_t, sock_file, "dbgmn_log_svr")

gen_require(
    type tmp_t;
)
manage_sock_files_pattern(polaris_ngwc_fed_t, tmp_t, polaris_fed_sock_t)

optional_policy(
# talk to rdope.sh over unix sockets
polaris_fed_debug_sock_write(polaris_ngwc_fed_t)
)

# /dev/shm/sdm access
optional_policy(
polaris_sdm_shm_manage(polaris_ngwc_fed_t)
)

```

```

)

# creates few files under /tmp/installer (e.g like
# /tmp/installer/phy_shannon_ver_1) to indicate current h/w conditions
polaris_install_tmp_manage(polaris_ngwc_fed_t)

# communication between the nif manager and fed use directories under /tmp/sv
polaris_sv_tmp_use(polaris_ngwc_fed_t)

optional_policy(
    polaris_quake_i2c_manage(polaris_ngwc_fed_t)
)

# work with /tmp files (/tmp/fed_post_results)
type polaris_fed_tmp_t;
files_tmp_file(polaris_fed_tmp_t)
files_tmp_filetrans(polaris_ngwc_fed_t, polaris_fed_tmp_t, file, "fed_post_result")
files_tmp_filetrans(polaris_ngwc_fed_t, polaris_fed_tmp_t, dir, "test_mrvlphy")
manage_files_pattern(polaris_ngwc_fed_t, polaris_fed_tmp_t, polaris_fed_tmp_t)
manage_dirs_pattern(polaris_ngwc_fed_t, polaris_fed_tmp_t, polaris_fed_tmp_t)
manage_fifo_files_pattern(polaris_ngwc_fed_t, polaris_fed_tmp_t, polaris_fed_tmp_t)
polaris_cm_rp_tmp_manage(polaris_ngwc_fed_t)

# Allow write to flash. Needed for template support.
polaris_flashlib_write(polaris_ngwc_fed_t)

# CSCvo78054 will be used to fix fed policies on crankshaft properly.
# Below policy is just to unblock Nightwatch boot issue on ISR in
# enforcing mode.
#ifdef(^crankshaft_family',`
# ISR Nightwatch module accesses libraries compiled with icc
polaris_icc_broken_relocations(polaris_ngwc_fed_t)

#ISR Nightwatch module creates softlink /flash -> /bootflash
gen_require(
    type root_t;
)
filetrans_pattern(polaris_ngwc_fed_t, root_t, polaris_disk_bootflash_t, lnk_file, "flash")

)

optional_policy(
    polaris_epc_ws_liaison_tmp_read(polaris_ngwc_fed_t)
)

# ngwc-fed manage /tmp/epc_ws/fed_to_wif_pipe file fifo_file.
optional_policy(
    polaris_epc_ws_liaison_fifo_manage(polaris_ngwc_fed_t)
)

```

)

```
optional_policy(`  
polaris_ngwc_itfpo_manage(polaris_ngwc_fed_t)  
`)
```

```
# access SERDES /tmp/serdes_asic_key_dir/*  
optional_policy(`  
polaris_serdes_asic_key_tmp_manage(polaris_ngwc_fed_t)  
`)
```

```
# ngwc-fed creates /tmp/epc_ws dir  
optional_policy(`  
polaris_epc_ws_liaison_tmp_file(polaris_ngwc_fed_t)  
`)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwcfed.te  
No license file was found, but licenses were detected in source scan.
```

```
#  
# April 2017, Victor Kamensky  
#  
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# All rights reserved  
#
```

```
/usr/binos/sbin/ncsshd -- gen_context(system_u:object_r:polaris_dmi_ncsshd_mgmt_exec_t,s0)  
/var/run/ncsshd_mgmt\,pid -- gen_context(system_u:object_r:polaris_dmi_ncsshd_mgmt_var_run_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmincsshdmgmt.fc  
No license file was found, but licenses were detected in source scan.
```

```
#  
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#  
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#
```

```
/usr/binos/conf/mcp_smartctl_cmds.sh -- gen_context(system_u:object_r:polaris_smartctl_exec_t,s0)  
  
/tmp/smart.pid -- gen_context(system_u:object_r:polaris_smartctl_tmp_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngiolite.fc
```

No license file was found, but licenses were detected in source scan.

```
#  
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#  
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#
```

```
/tmp/tmppub/interceptor(/.*)? gen_context(system_u:object_r:polaris_pttcd_tmp_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispttcd.fc
```

No license file was found, but licenses were detected in source scan.

```
#  
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#  
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#
```

```
## <summary>Polaris Cfg Policy Rules.</summary>
```

```
#####  
# Cfg files policy  
#####
```

```
#####
```

```
## <summary>  
## Manage cfg files (under /tmp/sw/cfg)  
## </summary>  
## <param name="domain">  
## <summary>  
## Domain allowed access.  
## </summary>  
## </param>  
## <rolebase/>  
#
```

```
interface(`polaris_cfg_data_manage`,  
gen_require(`  
type polaris_cfg_data_t;  
)  
  
manage_dirs_pattern($1, polaris_cfg_data_t, polaris_cfg_data_t)  
manage_files_pattern($1, polaris_cfg_data_t, polaris_cfg_data_t)  
manage_lnk_files_pattern($1, polaris_cfg_data_t, polaris_cfg_data_t)  
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscfg.if

No license file was found, but licenses were detected in source scan.

#

# July 2017, Victor Kamensky

#

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#

policy\_module(polarisngiolite, 1.0);

gen\_require(`

    type polaris\_ngiolite\_t;

`)

polaris\_btrace\_data\_manage(polaris\_ngiolite\_t)

polaris\_crft\_data\_manage(polaris\_ngiolite\_t)

polaris\_chasfs\_manage(polaris\_ngiolite\_t)

polaris\_tdlresolve\_read(polaris\_ngiolite\_t)

polaris\_tdlldb\_list\_dirs(polaris\_ngiolite\_t)

polaris\_cpld\_read(polaris\_ngiolite\_t)

polaris\_flashlib\_read(polaris\_ngiolite\_t)

optional\_policy(`

polaris\_cpp\_tmp\_ifdev\_use(polaris\_ngiolite\_t)

`)

# In the file of radium\_xcvr.c allow access to create and bind

# the socket using the API bnxt\_impl\_init\_netlink.

allow polaris\_ngiolite\_t self:netlink\_generic\_socket { bind create getattr setopt };

# in iot platforms, ngiolite needs access to /proc/sys/net/ipv6/conf/mvsw/disable\_ipv6

optional\_policy(`

kernel\_rw\_net\_sysctls(polaris\_ngiolite\_t)

kernel\_search\_network\_sysctl(polaris\_ngiolite\_t)

`)

# PLEASE LOOK AT code should not use sysv IPC ARIs,

# instead POSIX variants must be used. Remove after

# code changed in proper way

# allow access sysv semaphor created by qfp process

ifdef(`crankshaft\_family',`

polaris\_qfp\_sem\_use(polaris\_ngiolite\_t)

polaris\_ggpio\_dev\_read\_write(polaris\_ngiolite\_t)

polaris\_dplr\_dev\_use(polaris\_ngiolite\_t)

```

')

ifdef(^fugazi_platform',`
polaris_qfp_sem_use(polaris_ngiolite_t)
`)

# write access to /sys/bus/pci/rescan
dev_rw_sysfs(polaris_ngiolite_t)
# LOOK AT ME ngiolite does it through "echo 1 > /sys/bus/pci/rescan" seems to much
# to grunt shell and bin access just to write "1" string into the file
corecmd_exec_bin(polaris_ngiolite_t)
corecmd_exec_shell(polaris_ngiolite_t)
# allow read of /etc/passwd
auth_use_nsswitch(polaris_ngiolite_t)

polaris_firmware_read(polaris_ngiolite_t)

polaris_udev_tmp_list_dirs(polaris_ngiolite_t)

# allow access to read the file cman rommon file.
polaris_proc_rmonbifo_getattr(polaris_ngiolite_t)
polaris_proc_rmonbifo_read(polaris_ngiolite_t)

allow polaris_ngiolite_t self:capability { net_admin sys_rawio };

# allow system time capability to check for system timeout
# while checking the state using API cwan_modem_check_ready_state
allow polaris_ngiolite_t self:capability sys_time;

# allow access to nim_xxd file created by cmcc
polaris_nim_xxd_tmp_open_unlink(polaris_ngiolite_t);

# ngiolite needs to work with /dev/sd /dev/sg devices to figure out disk driver
# paramters. drivers/userspace/nim_xxd library
storage_raw_read_fixed_disk(polaris_ngiolite_t)
storage_read_scsi_generic(polaris_ngiolite_t)
storage_write_scsi_generic(polaris_ngiolite_t)

polaris_sysfs_platform_dev_use(polaris_ngiolite_t)

# LOOK AT ME: ngiolite needs to work with /dev/ds31408, which is generic device_t now
gen_require(
    type device_t;
)
rw_chr_files_pattern(polaris_ngiolite_t, device_t, device_t)

# modprobe nim_dm dm_drv_log_level=0x01
ifdef(^crankshaft_family',`

```

```

modutils_domtrans_insmod(polaris_ngiolite_t)
')

polaris_smartctl_domtrans(polaris_ngiolite_t)

# utah_fpge_driver.c needs socket to configure interface parameters
allow polaris_ngiolite_t self:udp_socket create_socket_perms;

polaris_utility_domain_template(smartctl)

corecmd_exec_bin(polaris_smartctl_t)
corecmd_exec_shell(polaris_smartctl_t)

# allow access to polaris_cpp_tmpfs_t file
# Example is ifdev shared memory /dev/shm//cpp_ifdev_shmem
# The ngiolite init function calls the api ifdev_init
# to initialize shared memory control info.
fs_getattr_tmpfs(polaris_ngiolite_t)
polaris_cpp_tmpfs_ifdev_rw(polaris_ngiolite_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_smartctl_t)

logging_send_syslog_msg(polaris_smartctl_t)

fstools_domtrans(polaris_smartctl_t)

# runs tar /bin/tar -xvzf /firmware/MicronP400m-MTFDDAK200MAN.pkg -C /firmware
polaris_firmware_manage(polaris_smartctl_t)
files_getattr_all_dirs(polaris_smartctl_t)
files_read_all_symlinks(polaris_smartctl_t)

# work with /dev/sgX
storage_read_scsi_generic(polaris_smartctl_t)
storage_write_scsi_generic(polaris_smartctl_t)

allow polaris_smartctl_t self:capability { chown dac_override fowner fsetid };

type polaris_smartctl_tmp_t;
files_tmp_file(polaris_smartctl_tmp_t)
files_tmp_filetrans(polaris_smartctl_t, polaris_smartctl_tmp_t, file, "smart.pid")
manage_files_pattern(polaris_smartctl_t, polaris_smartctl_tmp_t, polaris_smartctl_tmp_t)

# script inherits stdout from ngiolite, needs permission to append to it
polaris_use_btrace_fifo(polaris_smartctl_t)

# LOOK AT ME: raw memory access in cavium vendor SDK

```

```

# related to octeon driver (BUG CSCvh55517)
ifdef(`crankshaft_family',`
polaris_dev_mem_use(polaris_ngiolite_t)
`)

ifdef(`sparrow_platform',`
polaris_cm_cc_tmpfs_manage(polaris_ngiolite_t)
polaris_tty_NMEA_dev_use(polaris_ngiolite_t)
`)

ifdef(`blackheart_platform',`
polaris_cm_cc_tmpfs_manage(polaris_ngiolite_t)
`)

ifdef(`cabo_platform',`
polaris_cm_cc_tmpfs_manage(polaris_ngiolite_t)
`)

ifdef(`aventus_platform',`
polaris_cm_cc_tmpfs_manage(polaris_ngiolite_t)
polaris_tty_NMEA_dev_use(polaris_ngiolite_t)
`)

ifdef(`crankshaft_family',`
# allow scan pci/devices proc dir
# The ngiolite init function makes call to o2_cvmx_remote_open to
# open the remote library connection to cavium chip in FFP.
# The octeon library call invokes pci_get_device, which needs to
# access /proc .
kernel_getattr_proc_files(polaris_ngiolite_t)
kernel_write_proc_files(polaris_ngiolite_t)
kernel_read_system_state(polaris_ngiolite_t)

# allow access to /tmp/octeon-remote-lock-pci***
# This is required as part of ngiolite access of octeon chip.
# As part of the init, call is made to octeon_remote_lock()
# which requires access to the /tmp file.
polaris_cm_fp_tmp_filetrans(polaris_ngiolite_t)
polaris_cm_fp_tmp_manage(polaris_ngiolite_t)

#####
## CWAN NGIOLITE process policies start#####
#####
#cwan running as a ngiolite process needs to be able to RW/IOCTL to qcqmiX files
polaris_qcqmi_dev_use(polaris_ngiolite_t)

#RDM thread in CWAN running as ngiolite process needs access to ttyUSB0 for DM logging
term_use_usb_ttys(polaris_ngiolite_t)

```

```

#RDM/Event thread needs to add a newly generated DM log file/Crash dump file to/from bootflash directory
polaris_bootflash_manage(polaris_ngiolite_t)

#Modem Monitor thread uses sendto over a Datagram socket to send datato Turing Thread
allow polaris_ngiolite_t self:unix_dgram_socket sendto;

#Modem Monitor thread opens a socket to UDEV to process Modem USB addition/disconnection events
allow polaris_ngiolite_t self:netlink_kobject_uevent_socket create_socket_perms;

#Modem Monitor thread needs to be able to open/Read and GetAttributes to differentiate between Telit/SWI vendor
udev_rw_db(polaris_ngiolite_t)

#Turing thread needs to gather stats as well as set the IP address to /proc/net/cwan_modem0/cwan0/src_ip
kernel_search_network_state(polaris_ngiolite_t)
polaris_kernel_rw_network_state_files(polaris_ngiolite_t)

#####
## CWAN NGIOLITE process policies end#####
#####
')

# on tsn need access to /sys/devices/platform/moka_fpga
# /sys/devices/platform/moka_fpga/external_int_pending dev
optional_policy(`
polaris_mokafpga_rw(polaris_ngiolite_t)
')

# on radium need to get model info
optional_policy(`
polaris_dash_dev_use(polaris_ngiolite_t)
')

# work with contdev sysfs files
polaris_contdev_dev_read(polaris_ngiolite_t)

sysnet_domtrans_ifconfig(polaris_ngiolite_t)

logging_send_syslog_msg(polaris_ngiolite_t)

ifdef(`neptune_platform',`
polaris_cpp_cavium_sdk_ipc_use(polaris_ngiolite_t)
')

optional_policy(`
polaris_nim_dm_dev_use(polaris_ngiolite_t)
')

```

```

ifdef(`radium_platform',`
#allow ngiolite to access nim_phy_device
polaris_nim_phy_dev_use(polaris_ngiolite_t)
')

# TODO/FIXME, Need to review this permission, this is related to
# the call "echo 1 > /sys/bus/pci/rescan"
dev_manage_sysfs_dirs(polaris_ngiolite_t)
allow polaris_ngiolite_t sysfs_t:file create;

# allow ngiolite to access sfp over i2c bus
polaris_i2c_use(polaris_ngiolite_t)

# on neptune, cavium library in o2_cavm_mem_map wants access to
# /sys/devices/pci0000:00/0000:00:01.0/0000:01:00.0/resource0
optional_policy(`
polaris_cpp_cavium_dma_map(polaris_ngiolite_t)
')

# /dev/sfp-ktr & qfp sem access on Katar
ifdef(`katar_platform',`
polaris_sfp_katar_dev_use(polaris_ngiolite_t)
polaris_qfp_sem_use(polaris_ngiolite_t)
fs_getattr_tmpfs(polaris_ngiolite_t)
polaris_cpp_tmpfs_ifdev_rw(polaris_ngiolite_t)
')

# allow /usr/binos/bin/ngiolite to access /tmp/nim_xxd_present
gen_require(`
    type polaris_cmrp_nim_xxd_tmp_t;
')
files_tmp_file(polaris_cmrp_nim_xxd_tmp_t)
files_tmp_filetrans(polaris_ngiolite_t, polaris_cmrp_nim_xxd_tmp_t, file, "nim_xxd_present")
manage_files_pattern(polaris_ngiolite_t, polaris_cmrp_nim_xxd_tmp_t, polaris_cmrp_nim_xxd_tmp_t)

# allow /usr/binos/bin/ngiolite to access /tmp/hd_sz
gen_require(`
    type udev_tmp_t;
')
read_files_pattern(polaris_ngiolite_t, udev_tmp_t, udev_tmp_t)

# allow /usr/sbin/lvm to be executed and to be operated
lvm_domtrans(polaris_ngiolite_t)

# allow /usr/binos/bin/ngiolite to manage /tmp
type polaris_ngiolite_tmp_t;
files_tmp_file(polaris_ngiolite_tmp_t)
# allow /usr/binos/bin/ngiolite to manage /tmp/smartctl.out and

```

```

#                               /tmp/xxdisplay.ouT
files_tmp_filetrans(polaris_ngiolite_t, polaris_ngiolite_tmp_t, file)
manage_files_pattern(polaris_ngiolite_t, polaris_ngiolite_tmp_t, polaris_ngiolite_tmp_t)

# allow /usr/sbin/smartctl to operate on fsadm_exec_t
fstools_domtrans(polaris_ngiolite_t)

# allow /usr/sbin/smartctl to access nvme device in chr and blk
dev_nvme_chr_files_manage(polaris_ngiolite_t)
dev_nvme_blk_files_manage(polaris_ngiolite_t)

ifdef(`sumatra_platform',`
# dev/cpld
polaris_cpld_dev_use(polaris_ngiolite_t)

# manage "sysctrl_i2c.lck"
gen_require(`
    type polaris_cm_rp_tmp_t;
    ')
files_tmp_filetrans(polaris_ngiolite_t, polaris_cm_rp_tmp_t, file, "sysctrl_i2c.lck")
polaris_cm_rp_tmp_manage(polaris_ngiolite_t)

# access /dev/huron_fpga
polaris_huron_dev_use(polaris_ngiolite_t)

)

ifdef(`crankshaft_family',`
# /var/run/cwan socket and pid
gen_require(`
    type polaris_cwan_svr_var_run_t;
    ')
files_pid_filetrans(polaris_ngiolite_t, polaris_cwan_svr_var_run_t, sock_file, "cwan_ezmanage_cwan_server")
create_sock_files_pattern(polaris_ngiolite_t, polaris_cwan_svr_var_run_t, polaris_cwan_svr_var_run_t)
delete_sock_files_pattern(polaris_ngiolite_t, polaris_cwan_svr_var_run_t, polaris_cwan_svr_var_run_t)
)

# allow /usr/binos/bin/ngiolite to access the the following interface
fs_unmount_xattr_fs(polaris_ngiolite_t)
dev_manage_generic_symlinks(polaris_ngiolite_t)
polaris_udev_tmp_manage(polaris_ngiolite_t)

# ngiolite/ezManage access rules - currently only applies to TSN
optional_policy(`
# Allow ngiolite to access ezManage dgram socket
gen_require(`
    type polaris_ezmanage_t;
    ')
)

```

```

allow polaris_ngiolite_t polaris_ezmanage_t:unix_dgram_socket sendto;

# Allow ngiolite to access ezManage socket file in /var/run
polaris_manage_ezmanage_var_run_files(polaris_ngiolite_t
')

# allow ngiolite to access /dev/nim_phy
ifdef(`crankshaft_family',`
polaris_nim_phy_dev_use(polaris_ngiolite_t
')

# allow ioctl, read, wr permission for ds31408 device
optional_policy(`
polaris_ds31408_dev_use(polaris_ngiolite_t
')

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngiolite.te
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#
# April 2017, Victor Kamensky
#
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#

/tmp/\.ncsshd_bp\sock -s gen_context(system_u:object_r:polaris_dmi_ncsshd_log_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmincsshdfwd.fc
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#
# February 2020, Victor Kamensky
#
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#

## <summary>Polaris vdaemon Policy Rules.</summary>

#####
## <summary>
##   Write vdaemon /var/run socket file
## </summary>
## <param name="domain">
##   <summary>

```

```

## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_vdaemon_var_sock_write`,
    gen_require(`
        type polaris_vdaemon_t;
        type polaris_vdaemon_var_run_t;
        type var_run_t;
    `)
    write_sock_files_pattern($1, var_run_t, polaris_vdaemon_var_run_t)
    allow $1 polaris_vdaemon_t:unix_stream_socket { connectto };
)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisvdaemon.if
```

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```

#
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#
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#

policy_module(polarisboothelper, 1.0);

polaris_process_domain_template(boothelper_evt)

corecmd_exec_bin(polaris_boothelper_evt_t)

# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_boothelper_evt_t)

# allow to read /proc/meminfo
kernel_read_system_state(polaris_boothelper_evt_t)

polaris_cpld_read(polaris_boothelper_evt_t)

#####
# work with /tmp/udev/.

type polaris_udev_tmp_files_t;
files_tmp_file(polaris_udev_tmp_files_t)

polaris_systemd_tmpfiles_tmp_filetrans(polaris_udev_tmp_files_t, dir, "udev")

polaris_bootflash_manage(polaris_boothelper_evt_t)

```

```

type polaris_boothelper_tmp_t;
files_tmp_file(polaris_boothelper_tmp_t)
files_tmp_filetrans(polaris_boothelper_evt_t, polaris_boothelper_tmp_t, dir, "rommon_upgrade_ngwc")
manage_files_pattern(polaris_boothelper_evt_t, polaris_boothelper_tmp_t, polaris_boothelper_tmp_t)
manage_dirs_pattern(polaris_boothelper_evt_t, polaris_boothelper_tmp_t, polaris_boothelper_tmp_t)
# watch over /tmp/rommon_upgrade_ngwc
allow polaris_boothelper_evt_t polaris_boothelper_tmp_t:dir watch;

# nyquist creates /tmp/udev_ssd.log
gen_require(
    type udev_t;
)
files_tmp_filetrans(udev_t, polaris_udev_tmp_files_t, file, "udev_ssd.log")
fs_tmpfs_filetrans(udev_t, polaris_udev_tmp_files_t, file, "udev_ssd.log")

# create /dev/harddisk1 softlink during bootup
ifdef(`crankshaft_family',`
gen_require(
    type device_t;
    type initrc_t;
    type fixed_disk_device_t;
)
filetrans_pattern(initrc_t, device_t, fixed_disk_device_t, lnk_file, "harddisk1")
)
# restorecon under setfiles_t appends to /tmp/udev_ssd.log
gen_require(
    type setfiles_t;
)
polaris_udev_tmp_manage(setfiles_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisboothelper.te

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```

#
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#

```

```

policy_module(polarisnmspd, 1.0);

```

```

gen_require(
    type polaris_nmspd_t;
)

```

```

polaris_btrace_data_manage(polaris_nmspd_t)
polaris_crft_data_manage(polaris_nmspd_t)
polaris_chasfs_manage(polaris_nmspd_t)
polaris_tdlresolve_read(polaris_nmspd_t)
polaris_tdlldb_list_dirs(polaris_nmspd_t)
polaris_cpld_read(polaris_nmspd_t)
polaris_lua_read(polaris_nmspd_t)
polaris_flashlib_read(polaris_nmspd_t)

polaris_ripc_sman_ui_serv_connect(polaris_nmspd_t)

polaris_db_tdlldb_dir_use(polaris_nmspd_t)

#####
# mqipc manual, one that missing in platform tdl file\n
#####
type polaris_nmspd_testclient1_mqipc_t;
polaris_mqipc_type(polaris_nmspd_testclient1_mqipc_t)

type polaris_nmspd_testclient2_mqipc_t;
polaris_mqipc_type(polaris_nmspd_testclient2_mqipc_t)

type polaris_testclient1_nmspd_mqipc_t;
polaris_mqipc_type(polaris_testclient1_nmspd_mqipc_t)

type polaris_testclient2_nmspd_mqipc_t;
polaris_mqipc_type(polaris_testclient2_nmspd_mqipc_t);

polaris_mqipc_create_name(polaris_nmspd_t, polaris_nmspd_testclient1_mqipc_t, nmspd-testclient1)
polaris_mqipc_use(polaris_nmspd_t, polaris_testclient1_nmspd_mqipc_t)

polaris_mqipc_create_name(polaris_nmspd_t, polaris_nmspd_testclient2_mqipc_t, nmspd-testclient2)
polaris_mqipc_use(polaris_nmspd_t, polaris_testclient2_nmspd_mqipc_t)

#stuff related to vrf support of the socket
polaris_lfts_dev_use(polaris_nmspd_t)
polaris_socketat_nsfs_read(polaris_nmspd_t)
# enable listen on tcp port 16113
corenet_tcp_bind_polaris_nmspd_port(polaris_nmspd_t)

allow polaris_nmspd_t self:capability dac_override;

# Allow IPC messages to Btrace Process from NMSPD Process
logging_send_syslog_msg(polaris_nmspd_t)
# Allow NMSPD to read DNS file for namerresolution
sysnet_read_config(polaris_nmspd_t)

# NMSPD uses cURL to open HTTP connections and SSL to open TLS Connections

```

```

# to DNASpaces and CMX respectively
gen_require(
    type node_t;
)
allow polaris_nmospd_t node_t:udp_socket node_bind;
allow polaris_nmospd_t self:udp_socket { bind connect getattr };
corenet_tcp_connect_http_port(polaris_nmospd_t)
polaris_odm_clnt2svr_mqipc_create(polaris_nmospd_t)

#DB persistence
polaris_tdlldbpersist_setup(polaris_nmospd_t)
polaris_tmp_tdlldb_persist_setup(polaris_nmospd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisnmospd.te
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#
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#
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#

policy_module(polarisftm, 1.0);

gen_require(
    type polaris_ftm_t;
)
polaris_chasfs_manage(polaris_ftm_t)
polaris_cpld_read(polaris_ftm_t)
polaris_flashlib_read(polaris_ftm_t)
polaris_tdlresolve_read(polaris_ftm_t)

polaris_ripc_sman_ui_serv_connect(polaris_ftm_t)

polaris_db_tdlldb_dir_use(polaris_ftm_t)

logging_send_syslog_msg(polaris_ftm_t)

corecmd_exec_bin(polaris_ftm_t)
corecmd_exec_shell(polaris_ftm_t)
auth_use_nsswitch(polaris_ftm_t)

# vconfd_load_shared_schemas
polaris_confid_shared_schema_read(polaris_ftm_t)

# work with /tmp/xml

```

```

polaris_cedge_xml_tmp_manage(polaris_ftm_t)

# work with /tmp/tmp
polaris_cedge_tmp_manage(polaris_ftm_t)

polaris_cedge_reset_ns(polaris_ftm_t)

# /var/run/.ftmd-xxx sockets and pid
type polaris_ftm_var_run_t;
files_pid_file(polaris_ftm_var_run_t)
manage_files_pattern(polaris_ftm_t, polaris_ftm_var_run_t, polaris_ftm_var_run_t)
manage_sock_files_pattern(polaris_ftm_t, polaris_ftm_var_run_t, polaris_ftm_var_run_t)
files_pid_filetrans(polaris_ftm_t, polaris_ftm_var_run_t, { file sock_file })

polaris_cfgmgr_var_sock_write(polaris_ftm_t)
polaris_dbg_d_var_sock_write(polaris_ftm_t)
polaris_fpm_var_sock_write(polaris_ftm_t)
polaris_ttm_var_sock_write(polaris_ftm_t)
polaris_vdaemon_var_sock_write(polaris_ftm_t)

# PLEASE LOOK AT ME: write access to /boot/hugepage.conf
# which on ultra translates into /varied/hugepage.conf access
# But no code in polaris uses it
polaris_disk_varied_manage(polaris_ftm_t)
files_manage_boot_files(polaris_ftm_t)

# fp_scaling_init calls posix_sysconf
dev_read_sysfs(polaris_ftm_t)

# vip_execute_nowait uses setpgid
allow polaris_ftm_t self:process setpgid;

polaris_cedge_tmpfs_manage(polaris_ftm_t)

# raw socket access from trace_tunnel_socket_icmp_init ftm_binos_trace.c
allow polaris_ftm_t self:rawip_socket create_socket_perms;
allow polaris_ftm_t self:capability net_raw;

# bind to ftm fnf port
corenet_udp_bind_polaris_ftm_fnf_port(polaris_ftm_t)
corenet_udp_bind_generic_node(polaris_ftm_t)

# ftm may create vrf-based netns on demand, vrf.65528
polaris_vrf_netns_manage(polaris_ftm_t)

# creates /tmp/HTX-IOX/sw-htx-service
optional_policy(
    polaris_htx_iox_tmp_manage(polaris_ftm_t)

```

')

```
# fp_scaling_read_core_count accesses cgroups file at  
# /sys/fs/cgroup/cpuset/iosxe_control_processes/cpuset.cpus  
fs_read_cgroup_files(polaris_ftm_t)
```

```
# ftm_change_default_gw_src_ip calls ip utility  
sysnet_domtrans_ifconfig(polaris_ftm_t)
```

```
# ftm process periodically call nice utility to gzip some xml file  
allow polaris_ftm_t self:process setsched;
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisftm.te
```

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```
#  
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#
```

```
## <summary>Polaris fman_fp Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfmanfp.if
```

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```
#  
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#
```

```
/tmp/replication(/.*)? gen_context(system_u:object_r:polaris_repm_tmp_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrepm.fc
```

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```
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#
```

```

## <summary>Polaris Btrace Policy Rules.</summary>

#####
# Polaris cpp (ultra)
#####

#####
## <summary>
##   Work (read, write, ioctl) with /dev/cpp_dev_info and /dev/cpp_vxe_rsrc
##   devices.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_cpp_dev_use',`
gen_require(`
    type device_t;
    type polaris_cpp_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_cpp_device_t)
    read_chr_files_pattern($1, device_t, polaris_cpp_device_t)
    allow $1 polaris_cpp_device_t:chr_file map;
polaris_i95_dev_use($1)
')

#####
## <summary>
##   Make the specified domain as polaris cpp process.
## </summary>
## <param name="type">
##   <summary>
##     Type to be used as a cpp process.
##   </summary>
## </param>
#
interface(`polaris_cpp_process',`
gen_require(`
    attribute polaris_cpp_domain;
`)
    typeattribute $1 polaris_cpp_domain;
')

```

```
#####
## <summary>
##   Make the specified domain able to use cpp /tmp files.
## </summary>
## <param name="type">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <param name="object">
##   <summary>
##     File name in /tmp that domains creates and other cpp process
##     access.
##   </summary>
## </param>
#
interface(`polaris_cpp_tmp_files_use`,`
    gen_require(`
        type polaris_cpp_tmp_t;
    `)

    files_tmp_filetrans($1, polaris_cpp_tmp_t, file, $2)
    manage_files_pattern($1, tmp_t, polaris_cpp_tmp_t)
    allow $1 polaris_cpp_tmp_t:file map;
`)

#####
## <summary>
##   Specified domain can execute polaris_cpp_tmpifs_t code
##   which resides in /dev/shm/cpp_ucode_dram
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cpp_tmpifs_exec`,`
    gen_require(`
        type polaris_cpp_tmpifs_t;
    `)

    allow $1 polaris_cpp_tmpifs_t:file execute;
`)

#####
## <summary>
##   Read write from polaris_cpp_tmpifs_t file
```

```

## Example is ifdev shared memory /dev/shm/cpp_ifdev_shmem
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_cpp_tmpfs_ifdev_rw`,`
    gen_require(`
        type tmpfs_t;
        type polaris_cpp_tmpfs_t;
    `)

    rw_files_pattern($1, tmpfs_t, polaris_cpp_tmpfs_t)
    allow $1 polaris_cpp_tmpfs_t:file map;
)

#####
## <summary>
## Make the specified domain able to work with cpp /tmp/cpp_ifdev_rep and
## /tmp/cpp_ifdev_req pipe files.
## </summary>
## <param name="type">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_cpp_tmp_ifdev_use`,`
    gen_require(`
        type polaris_cpp_tmp_t;
    `)

    manage_fifo_files_pattern($1, tmp_t, polaris_cpp_tmp_t)
    allow $1 polaris_cpp_tmp_t:file map;
)

#####
## <summary>
## Make the specified domain able to getattr of /tmp/cpp_ifdev_rep and
## /tmp/cpp_ifdev_req pipe files.
## </summary>
## <param name="type">
## <summary>
## Domain allowed access.
## </summary>

```

```

## </param>
#
interface(`polaris_cpp_tmp_ifdev_getattr',`
    gen_require(`
        type polaris_cpp_tmp_t;
    `)

    getattr_fifo_files_pattern($1, tmp_t, polaris_cpp_tmp_t)
)

#####
## <summary>
## Allow process to use Cavium SDK sysv IPC primitives
## created by octeon_pci_dmap.c. Those could be created either
## by cpp_driver (usually) or by cpp_cdm on utah and overlord,
## and by cm_fp on neptune.
##
## </summary>
## <param name="type">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_cpp_cavium_sdk_ipc_use',`
    ifdef(`crankshaft_family',`
        polaris_cpp_driver_sem_use($1)
        polaris_cpp_driver_shm_use($1)
    optional_policy(`
        polaris_cpp_cdm_sem_use($1)
        polaris_cpp_cdm_shm_use($1)
    `)
    optional_policy(`
        polaris_cm_fp_sem_use($1)
        polaris_cm_fp_shm_use($1)
    `)
    # allow scan pci/devices proc dir
    kernel_getattr_proc_files($1)
    kernel_write_proc_files($1)
    kernel_read_system_state($1)
    `)
)

#####
## <summary>
## Work (read, write, ioctl) with /dev/i95 devices
## </summary>
## <param name="domain">

```

```

## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_i95_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_i95_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_i95_device_t)
    read_chr_files_pattern($1, device_t, polaris_i95_device_t)
    allow $1 polaris_i95_device_t:chr_file map;
)

```

```

#####
## <summary>
## Work (read, write, map) with sysfs files required
## by cavium library in o2_cavm_mem_map.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_cpp_cavium_dma_map`,`
    gen_require(`
        type sysfs_t;
    `)

    mmap_files_pattern($1, sysfs_t, sysfs_t)
    dev_rw_sysfs($1)
)

```

```

#####
## <summary>
## Manage /dev/shm files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolebase/>
#
interface(`polaris_cpp_tmpfs_manage`,`
    gen_require(`

```

```

type polaris_cpp_tmpfs_t;
type tmpfs_t;
)

fs_tmpfs_filetrans($1, polaris_cpp_tmpfs_t, file)
manage_files_pattern($1, tmpfs_t, polaris_cpp_tmpfs_t)
allow $1 polaris_cpp_tmpfs_t:file map;
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscpp.if

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```

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#

```

## <summary>Polaris bt\_logger Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtlogger.if

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```

#
# August 2017, Shawn Lu
#
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#

```

# /bootflash labels

```

/bootflash(/.*)?          gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/bootflash/.ssh(/.*)?    gen_context(system_u:object_r:ssh_home_t,s0)
/bootflash/.ssh/ssh_host.*_key\pub  gen_context(system_u:object_r:sshd_key_t,s0)
/bootflash/.ssh/ssh_host.*_key    gen_context(system_u:object_r:sshd_key_t,s0)
/bootflash/tracelogs(/.*)?      gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/bootflash/tan(/.*)?          gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/bootflash/core(/.*)?        gen_context(system_u:object_r:polaris_core_file_t,s0)
/bootflash/debug.conf        gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/bootflash/packages.conf     gen_context(system_u:object_r:polaris_packages_conf_t,s0)

```

# /csl\_p\_0

```

/csl_p_0(/.*)?          gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)

```

# /csl\_p\_1.context

```

/csl_p_1(/.*)?          gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)

# /csl_s_0.context
/csl_s_0(/.*)?          gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)

# /csl_s_1.context
/csl_s_1(/.*)?          gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)

# /obfl is separate on qwlc
/obfl(/.*)?             gen_context(system_u:object_r:polaris_obfl_data_t,s0)

# /varied
/varied(/.*)?           gen_context(system_u:object_r:polaris_disk_varied_t,s0)
/varied/install_info    gen_context(system_u:object_r:polaris_vwlcinstall_info_t,s0)
/varied/obfl_*          gen_context(system_u:object_r:polaris_obfl_data_t,s0)
/varied/grub_cisco_version gen_context(system_u:object_r:polaris_grubver_t,s0)
/varied/grub(/.*)?      gen_context(system_u:object_r:boot_t,s0)
/varied/grub2(/.*)?     gen_context(system_u:object_r:polaris_grub_bios_t,s0)
/varied/grub/menu.*     gen_context(system_u:object_r:bootloader_etc_t, s0)
/sbin/grub*             gen_context(system_u:object_r:bootloader_exec_t,s0)

# /grubenv
/bootefi(/.*)?          gen_context(system_u:object_r:polaris_grub_efi_t, s0)

# hanet driver used by vwlc and ultra, is there better place for it?
/dev/hanet -c gen_context(system_u:object_r:polaris_hanet_device_t,s0)

# from /lib/tmpfiles.d/binos-vxe.conf
/lic0 -l                gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/lic1 -l                gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)

# /harddisk labels (qwlc)
/vol/harddisk(/.*)?     gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)
/vol/harddisk/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/vol/harddisk/tan(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/vol/harddisk/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/vol/harddisk/debug.conf gen_context(system_u:object_r:polaris_debug_conf_t,s0)

# /init is symbolic link to /lib/systemd/systemd
/init -l gen_context(system_u:object_r:init_exec_t,s0)
# /disk0 is symbolic link to /vol/disk0
/disk0 -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

# /dev/epa device on qwlc
/dev/epa[0-9]*          -c gen_context(system_u:object_r:polaris_epa_device_t,s0)
/dev/epactrl[0-9]*     -c gen_context(system_u:object_r:polaris_epa_device_t,s0)

# /dev/luna_fpga on qwlc

```

```

/dev/luna_mbfpga          -c gen_context(system_u:object_r:polaris_luna_mbfpga_device_t,s0)

# /dev/astro on qwlc
/dev/astro                -c gen_context(system_u:object_r:polaris_astro_device_t,s0)

# /dev/cpp_il on qwlc
/dev/cpp_il               -c gen_context(system_u:object_r:polaris_cpp_il_device_t,s0)

# /flash is symbolic link to /bootflash on qwlc
/flash                    gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

# /dev/oob_evfc on qwlc
/dev/oob_evfc            -c gen_context(system_u:object_r:polaris_oob_evfc_device_t,s0)

# /dev/sfp-ktr on katar
/dev/sfp-ktr             -c gen_context(system_u:object_r:polaris_sfp_katar_device_t,s0)

# To store tcpdump output in file haIntCaptureLo.pcap
/bootflash/haIntCaptureLo.pcap  gen_context(system_u:object_r:polaris_netutils_data_t,s0)
/objstore(/.*)?          gen_context(system_u:object_r:polaris_disk_objstore_t,s0)

# /config labels
/config(/.*)?            gen_context(system_u:object_r:polaris_disk_config_t,s0)
/config/.ssh(/.*)?      gen_context(system_u:object_r:ssh_home_t,s0)
/config/.ssh/ssh_host.*_key\pub  gen_context(system_u:object_r:sshd_key_t,s0)
/config/.ssh/ssh_host.*_key    gen_context(system_u:object_r:sshd_key_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswlc.fc

No license file was found, but licenses were detected in source scan.

dnl

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dnl

dnl WLC Platform Max Bay Limits

max\_bay\_map\_set(rp, `per\_bay', 0)

max\_bay\_map\_set(cc, `per\_bay', 0)

max\_bay\_map\_set(fp, `per\_bay', 0)

dnl in elastic scope each process has its own value

max\_elastic\_map\_set(rp, `elastic', BPROC\_ODM, 1)

max\_elastic\_map\_set(cc, `elastic', BPROC\_ODM, 1)

max\_elastic\_map\_set(fp, `elasitic', BPROC\_ODM, 1)

max\_elastic\_map\_set(rp, `elastic', BPROC\_WNCD, 7)

max\_elastic\_map\_set(cc, `elastic', BPROC\_WNCD, 7)

max\_elastic\_map\_set(fp, `elastic', BPROC\_WNCD, 7)

```
max_elastic_ripc_map_set(`rp', `elastic', BPROC_ODM, 1)
max_elastic_ripc_map_set(`cc', `elastic', BPROC_ODM, 1)
max_elastic_ripc_map_set(`fp', `elasic', BPROC_ODM, 1)
```

```
max_elastic_ripc_map_set(`rp', `elastic', BPROC_WNCD, 7)
max_elastic_ripc_map_set(`cc', `elastic', BPROC_WNCD, 7)
max_elastic_ripc_map_set(`fp', `elastic', BPROC_WNCD, 7)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/vwlcmaps.m4
```

No license file was found, but licenses were detected in source scan.

```
#
# June 2017, Victor Kamensky
#
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#
```

```
policy_module(polariswebui, 1.0);
```

```
type polaris_webui_file_t;
files_type(polaris_webui_file_t)
polaris_pfile_type(polaris_webui_file_t)
```

```
polaris_process_domain_template(webui_lighttpd)
```

```
polaris_process_domain_template(webui)
```

```
gen_require(`
    type initrc_t;
')
manage_dirs_pattern(initrc_t, polaris_webui_file_t, polaris_webui_file_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswebui.te
```

No license file was found, but licenses were detected in source scan.

```
#
# March 2017, Victor Kamensky
#
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#
```

```
policy_module(polariscmrp, 1.0);
```

```

gen_require(
    type polaris_cm_rp_t;
)

polaris_btrace_data_manage(polaris_cm_rp_t)
polaris_crft_data_manage(polaris_cm_rp_t)
polaris_chasfs_manage(polaris_cm_rp_t)
polaris_tdlresolve_read(polaris_cm_rp_t)
polaris_tdlldb_list_dirs(polaris_cm_rp_t)
polaris_cpld_read(polaris_cm_rp_t)
polaris_lua_read(polaris_cm_rp_t)
polaris_flashlib_read(polaris_cm_rp_t)
polaris_flashlib_write(polaris_cm_rp_t)
#
# cm_rp opens log file to collect required RP, CC, FP and rommon details
# and write into /vol/harddisk/.inv/inv_log_file
# This file is accessed by crashinfo collecting script and others
type polaris_cm_rp_inv_log_file_t;
polaris_disk_type(polaris_cm_rp_inv_log_file_t)
polaris_cm_rp_inv_log_setup(polaris_cm_rp_t)

polaris_ripc_sman_ui_serv_connect(polaris_cm_rp_t)

polaris_cpld_dev_use(polaris_cm_rp_t)
polaris_lfts_dev_use(polaris_cm_rp_t)
polaris_proc_rmonbifo_read(polaris_cm_rp_t)
polaris_obfl_data_read(polaris_cm_rp_t)

polaris_db_tdlldb_dir_use(polaris_cm_rp_t)
# cman_rp needs read access to cpu identity
# /dev/cpu/0/msr
dev_read_cpuid(polaris_cm_rp_t)
allow polaris_cm_rp_t self:capability { sys_rawio dac_override chown sys_resource };

allow polaris_cm_rp_t self:process setsched;

# on ultra read eeprom through i2c
# type=AVC msg=audit(1479569571.044:3): avc: denied { getattr } for pid=5283 comm="cmand"
path="/sys/devices/i2c-0/i2c-1/1-0056/eeprom" dev="sysfs" ino=25556
scontext=system_u:system_r:polaris_cm_rp_t:s0 tcontext=system_u:object_r:sysfs_t:s0 tclass=file
# type=AVC msg=audit(1479569571.045:4): avc: denied { read write } for pid=5283 comm="cmand"
name="eeprom" dev="sysfs" ino=25556 scontext=system_u:system_r:polaris_cm_rp_t:s0
tcontext=system_u:object_r:sysfs_t:s0 tclass=file
dev_rw_sysfs(polaris_cm_rp_t)

polaris_ggpio_dev_read_write(polaris_cm_rp_t)

# accessing obfl files like /obfl/obfl_uptime_v2.log

```

```

polaris_bootflash_read(polaris_cm_rp_t)
polaris_obfl_data_manage(polaris_cm_rp_t)

corecmd_exec_shell(polaris_cm_rp_t)

# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_cm_rp_t)

# cman_data_chasfs_mgmt_eth_override (cman/rp/src/cman_data.c:1096) tries to do
# ioctl(sk, SIOCGIFHWADDR, &ifr) for "eth2", which is not present on ultra, but
# such ioctl in kernel triggers dev_load attempt in kernel. Since interface
# and module does exist anyway, it is OK to deny it
kernel_dontaudit_request_load_module(polaris_cm_rp_t)

# cmand creates udp socket to get interface hw address cmlib_if_config_addr
allow polaris_cm_rp_t self:udp_socket create_socket_perms;

# dyncfg_setup.sh is started by cmand
polaris_dyncfg_domtrans(polaris_cm_rp_t)
polaris_dyncfg_tmp_read(polaris_cm_rp_t)
# on crankshaft cm_rp does init directly
polaris_dyncfg_setup(polaris_cm_rp_t)

# denied { search read open } subject: polaris_cm_rp_t; object: polaris_disk_varied_t
# name="/" dev="sda5"; path="/varied"
polaris_disk_varied_manage(polaris_cm_rp_t)

#allow polaris_cm_rp_t polaris_udev_tmp_files_t:dir { read search };
polaris_udev_tmp_list_dirs(polaris_cm_rp_t)

# LOOK AT ME: /tmp/rp/chasfs/inventory has symbolic links back to
# /bootflash/core/modules and /bootflash/tracelogs/modules cman_inv_restart_init
# calls chasfs_properties_internal over this node and as result it tries to
# access those directories
polaris_core_file_search(polaris_cm_rp_t)
polaris_disk_bootflash_search(polaris_cm_rp_t)
polaris_btrace_persistent_data_search(polaris_cm_rp_t)

polaris_dyncfg_tmp_manage(polaris_cm_rp_t)

ifdef(`mcp_family',`
polaris_scooby_dev_use(polaris_cm_rp_t)
# read/write /dev/ds3100 chr device
dev_rw_generic_chr_files(polaris_cm_rp_t)
polaris_spa_dev_use(polaris_cm_rp_t)
')

```

```

# temporary files created for repm in /tmp/replication
type polaris_cm_rp_tmp_t;
files_tmp_file(polaris_cm_rp_tmp_t)
gen_require(
    type tmp_t;
)
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "sysctrl_i2c.lck")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "pfu_overtime.lock")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "golden_boot")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "sr_message_debug.txt")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "ngwc_sudi_auth_done")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "codesign.txt")
polaris_cm_rp_tmp_manage(polaris_cm_rp_t)

logging_send_syslog_msg(polaris_cm_rp_t)

# work with /dev/i2c devices
polaris_i2c_use(polaris_cm_rp_t)
dev_getattr_sysfs_fs(polaris_cm_rp_t)

# /var files
gen_require(
    type var_log_t;
)
type polaris_cm_rp_var_log_t;
logging_log_file(polaris_cm_rp_var_log_t)
logging_log_filetrans(polaris_cm_rp_t, polaris_cm_rp_var_log_t, file, "obfl_uptime_v2.log")
manage_files_pattern(polaris_cm_rp_t, var_log_t, polaris_cm_rp_var_log_t)

# needed for "show platform hardware slot R0 eobc interface primary status"
kernel_read_network_state(polaris_cm_rp_t)

#####
# show platform hardware slot R0 pcie status
# mcp_pcie_status_cmd.sh
# /bin/sh /usr/binos/conf/bexec.sh -c /usr/binos/conf/mcp_pcie_status_cmd.sh
#####

polaris_utility_domain_template(pcie_status_cmd)

polaris_bexecute_domtrans(polaris_cm_rp_t)
polaris_bexecute_domain(polaris_pcie_status_cmd_t, polaris_pcie_status_cmd_exec_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_pcie_status_cmd_t)

# "lspci" needs access to files like /sys/devices/pci0000:00/0000:00:00.0/resource

```

```

dev_read_sysfs(polaris_pcie_status_cmd_t)

polaris_send_signal_to_bexecute(polaris_cm_rp_t)

# need write/getattr access for pipes like "pipe:[118396]"
polaris_cmrp_use_fifo(polaris_pcie_status_cmd_t)

corecmd_exec_bin(polaris_pcie_status_cmd_t)

# on utah need to get model info
optional_policy(`
    polaris_dash_dev_use(polaris_cm_rp_t)
    polaris_nios_dev_use(polaris_cm_rp_t)
`)

#access to /dev/dash_fpga device on fugazi platform
ifdef(`fugazi_platform',`
    polaris_dash_dev_mcp_use(polaris_cm_rp_t)
`)

ifdef(`crankshaft_family',`
    polaris_quack_dev_use(polaris_cm_rp_t)
`)

ifdef(`sparrow_platform',`
    polaris_cm_cc_tmpfs_manage(polaris_cm_rp_t)
`)

ifdef(`blackheart_platform',`
    polaris_cm_cc_tmpfs_manage(polaris_cm_rp_t)
`)

ifdef(`cabo_platform',`
    polaris_cm_cc_tmpfs_manage(polaris_cm_rp_t)
`)

ifdef(`aventus_platform',`
    polaris_cm_cc_tmpfs_manage(polaris_cm_rp_t)
    polaris_dio_dev_use(polaris_cm_rp_t)
`)

ifdef(`qwlc_platform',`
    polaris_quack_dev_use(polaris_cm_rp_t)
`)

ifdef(`katar_platform',`
    polaris_quack_dev_use(polaris_cm_rp_t)
`)

```

```

ifdef(`wlc_family',`
netutils_domtrans_ping(polaris_cm_rp_t)
')

ifdef(`ngwc_family',`
# In cman_rp module fips/entropy component
# calls cman_ngwc_tam_platform_get_act2_entropy() to
# retrieve entropy from ACT2 chip.
polaris_act2_dev_use(polaris_cm_rp_t)

# cman-rp init needs access to quack chip
polaris_quack_dev_use(polaris_cm_rp_t)

# read /proc/cmdline
kernel_read_system_state(polaris_cm_rp_t)

#on macallan and nyquist cman_rp needs to access /flash<#>/lic0/sudi_cert_data_v3
polaris_disk_license_read(polaris_cm_rp_t)

#on macallan and starfleet cli "show firmware version lan_spi" triggers ethtool usage
sysnet_domtrans_ifconfig(polaris_cm_rp_t)
')

# cman-rp needs to read /tmp/fed_post_result and /tmp/sm_post_result
# on ngwc platforms
optional_policy(`
polaris_fed_tmp_files_read(polaris_cm_rp_t)
')
optional_policy(`
polaris_sif_mgr_tmp_files_read(polaris_cm_rp_t)
')

ifdef(`starfleet_platform',`
polaris_dmammap_dev_use(polaris_cm_rp_t)
')

ifdef(`nyquist_platform',`
polaris_ngwc_shm_manage(polaris_cm_rp_t)

# /dev/dmammap usage
polaris_dmammap_dev_use(polaris_cm_rp_t)

# /dev/remap_mem0 usage
polaris_remap_mem_dev_use(polaris_cm_rp_t)

```

```
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "pm_post_result")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, dir, "microcode_update")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "mcu_upgrading")
```

```
# executes tar for microcode
allow polaris_cm_rp_t self:capability { fowner fsetid };
')
```

```
ifdef(^radium_platform',`
# /dev/remap_mem0 usage
polaris_remap_mem_dev_use(polaris_cm_rp_t)
')
```

```
ifdef(^sumatra_platform',`
# /dev/remap_mem0 usage
polaris_remap_mem_dev_use(polaris_cm_rp_t)
# LOOK AT ME: After direct usage of /dev/mem is removed (CSCvw80796)
polaris_dev_mem_use(polaris_cm_rp_t)
# access huron FPGA
polaris_huron_dev_use(polaris_cm_rp_t)
')
```

```
ifdef(^quake_platform',`
polaris_ngwc_shm_manage(polaris_cm_rp_t)
```

```
# /dev/dmammap usage
polaris_dmammap_dev_use(polaris_cm_rp_t)
```

```
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "pm_post_result")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, dir, "microcode_update")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "mcu_upgrading")
')
```

```
# LOOK AT ME: /dev/mem access restriction remove after
# CSCvm48950 is fixed using CSCvm48953
ifdef(^nyquist_platform',`
polaris_dev_mem_use(polaris_cm_rp_t)
')
```

```
# LOOK AT ME: /dev/mem access restriction remove after
# CSCvn64182 is fixed using CSCvn64184
ifdef(^quake_platform',`
polaris_dev_mem_use(polaris_cm_rp_t)
')
```

```
#####
```

```

# CLI: "show platform hardware slot R0 xaui statistics"
# this results in cman (/usr/binos/bin/cmand) invoking
# "/bin/sh /usr/binos/conf/bexec.sh -c /usr/binos/conf/dash_fpga_xaui.py show".
# The python script dash_fpga_xaui.py runs in polaris_bexecute_t domain
# and as part of its functionality it needs to create an UDP socket and make an ioctl call.
#####

polaris_utility_domain_template(dash_fpga_xaui)

polaris_bexecute_domain(polaris_dash_fpga_xaui_t, polaris_dash_fpga_xaui_exec_t)
polaris_cmrp_use_fifo(polaris_dash_fpga_xaui_t)
allow polaris_dash_fpga_xaui_t self:udp_socket { create ioctl };

#####
# CLI: show plat soft cpu share
# - invokes functions in binos/tools/bin/cgroup_reports.sh
# - also cman_cli_show_cpu_share_cb in binos/cman/rp/src/cman_cli.c
# allow open/read/search cgroup files like
# /sys/fs/cgroup/cpu,cpuacct/iosxe_control_processes/cpu.shares
#####
fs_read_cgroup_files(polaris_cm_rp_t)
fs_list_cgroup_dirs(polaris_cm_rp_t)

# on tsn need access to /dev/moka_fpga
optional_policy(`
polaris_mokafpga_dev_use(polaris_cm_rp_t)
`)

optional_policy(`
# betelgeuse need access to /dev/sirius_fpga
polaris_sirius_fpga_dev_use(polaris_cm_rp_t)
`)

# on tsn read access to /sys/devices/platform/moka_fpga
optional_policy(`
polaris_mokafpga_read(polaris_cm_rp_t)
`)

optional_policy(`
polaris_tam_getattrs_tmp_dirs(polaris_cm_rp_t)
`)

# on vwlc/macallan, cmand creates /tmp/hw_entropy
polaris_hw_entropy_create(polaris_cm_rp_t)

# on tsn need write access to
# sys/devices/platform/cpld/reg_rp_sku_register
# on starfleet need write access to

```

```

# sys/devices/platform/cpld/reg_fan_fault_shutdown
optional_policy(`
polaris_cpld_write(polaris_cm_rp_t)
`)

# LOOK AT ME: /dev/mem access restriction
ifdef(`tsn_platform',`
polaris_dev_mem_use(polaris_cm_rp_t)
`)

# reads from, populates chasfs with values and deletes /tmp/package_biv_sums
polaris_kgv_data_manage(polaris_cm_rp_t)

optional_policy(`
    polaris_quake_i2c_manage(polaris_cm_rp_t)
`)

ifdef(`qwlc_platform',`
# read/write /dev/ds3100 chr device
dev_rw_generic_chr_files(polaris_cm_rp_t)
`)

ifdef(`katar_platform',`
# read/write /dev/ds3100 chr device
dev_rw_generic_chr_files(polaris_cm_rp_t)
# Read access to /tmp/ldwm_envelope file
polaris_ldwm_envelope_read(polaris_cm_rp_t)
`)

ifdef(`mcp_family',`
# Read access to /tmp/ldwm_envelope file
polaris_ldwm_envelope_read(polaris_cm_rp_t)
`)

# /dev/luna_fpga on qwlc
optional_policy(`
polaris_luna_mbfpga_dev_use(polaris_cm_rp_t)
`)

# open /dev/ttyS0
term_use_unallocated_ttys(polaris_cm_rp_t)

optional_policy(`
polaris_ngwc_scc_shm_manage(polaris_cm_rp_t)
`)

ifdef(`ngwc_family',`
# on nyquist in ngwc_update_member_config nvram_config is

```

```

# copied from /tmp/chassis/local/rp/tam/00001.nvram_config
polaris_nvram_manage(polaris_cm_rp_t)
# CMAN needs to create nvram_config with the right label instead of bootflash_t
gen_require(
    type polaris_nvram_file_t;
    type polaris_disk_bootflash_t;
)
filetrans_pattern(polaris_cm_rp_t, polaris_disk_bootflash_t, polaris_nvram_file_t, file, "nvram_config")
)

# CMANRP needs to create right label instead of bootflash_t
type polaris_user_file_t;
files_type(polaris_user_file_t);
polaris_bootflash_filetrans(polaris_cm_rp_t, polaris_user_file_t, file);
manage_files_pattern(polaris_cm_rp_t, polaris_disk_bootflash_t, polaris_user_file_t)

# on virtual platforms cman reads virtual sudi file /csl_p_0/vudi.pri
ifdef(`vxe_family',`
polaris_disk_csl_read(polaris_cm_rp_t)
)
ifdef(`wlc_family',`
polaris_disk_csl_read(polaris_cm_rp_t)
)

# from cman_util_chasfs_watch_stby_harddisk
polaris_udev_tmp_watch(polaris_cm_rp_t)

# watch read over /tmp/chassis/local/rp/tam by cman_nyq_board_auth_init
polaris_chasfs_watch_read(polaris_cm_rp_t)

# /dev/aikido access
polaris_aikido_dev_use(polaris_cm_rp_t)

# access SERDES /tmp/serdes_asic_key_dir/*
optional_policy(
polaris_serdes_asic_key_tmp_manage(polaris_cm_rp_t)
)

# run /sbin/hwclock in its own domain
clock_domtrans(polaris_cm_rp_t)

ifdef(`crankshaft_family',`
# modprobe sm_nim_adpt.ko for Switzer-CC
modutils_domtrans_insmod(polaris_cm_rp_t)
# /dev/sm_nim_adpt device files for Switzer-CC
polaris_sm_nim_adpt_dev_use(polaris_cm_rp_t)

# "show platform hardware subslot <slot/card> backplane statistics"

```

```

# triggers ethtool with ifconfig_t using fifo_file (pipe) on polaris_cm_rp_t.
gen_require(
    type ifconfig_t;
)

polaris_cmrp_use_fifo(ifconfig_t)
)

polaris_iosd_vcpu_read(polaris_cm_rp_t)

#####
# show platform hardware slot R0 fpga
# mcp_fpga_status_cmd.sh
# /bin/sh /usr/binos/conf/bexec.sh -c /usr/binos/conf/mcp_fpga_status_cmd.sh
#####

polaris_utility_domain_template(fpga_status_cmd)

polaris_bexecute_domtrans(polaris_cm_rp_t)
polaris_bexecute_domain(polaris_fpga_status_cmd_t, polaris_fpga_status_cmd_exec_t)
polaris_cmrp_use_fifo(polaris_fpga_status_cmd_t)

auth_use_nsswitch(polaris_fpga_status_cmd_t)
corecmd_exec_bin(polaris_fpga_status_cmd_t)

# PLEASE LOOK AT ME: /sys/devices/platform/nios should have Cisco specific label
# read content under /sys/devices/platform/nios
dev_read_sysfs(polaris_fpga_status_cmd_t)

ifdef(^sparrow_platform',`
polaris_dio_dev_use(polaris_cm_rp_t)
)

ifdef(^cabo_platform',`
polaris_dio_dev_use(polaris_cm_rp_t)
)

ifdef(^starfleet_platform',`
polaris_fpga_upgrade_tmp_use(polaris_cm_rp_t)
)

type polaris_fpga_upgrade_tmp_t;
files_tmp_file(polaris_fpga_upgrade_tmp_t)
files_tmp_filetrans(polaris_cm_rp_t, polaris_fpga_upgrade_tmp_t, file, "fpga_upgrade")
# cman_rp needs read access to cpu identity
# /dev/cpu/0/msr
dev_read_cpuid(polaris_cm_rp_t)

```

```

# cman_rp needs read/write access to cpu msr
# /dev/cpu/0/msr
# following definition provides that
dev_rw_cpu_microcode(polaris_cm_rp_t)

type polaris_cmrp_nim_xxd_tmp_t;
files_tmp_file(polaris_cmrp_nim_xxd_tmp_t)
files_tmp_filetrans(polaris_cm_rp_t, polaris_cmrp_nim_xxd_tmp_t, file, "nim_xxd_present")
manage_files_pattern(polaris_cm_rp_t, polaris_cmrp_nim_xxd_tmp_t, polaris_cmrp_nim_xxd_tmp_t)

#ifdef(`2kp_platform',`
# blzi device
polaris_blzi_dev_use(polaris_cm_rp_t)
')

#tamlib debug file access
polaris_tamlib_dbg_file_manage(polaris_cm_rp_t)

#ifdef(`wlc_family',`
# tcpdump access for RP
# packet dump is stored in file /bootflash/haIntCaptureLo.pcap
type polaris_netutils_data_t;
polaris_pfile_type(polaris_netutils_data_t)
gen_require(`
    type polaris_disk_bootflash_t;
    type netutils_t;
')
filetrans_pattern(netutils_t, polaris_disk_bootflash_t, polaris_netutils_data_t, file, "haIntCaptureLo.pcap")
manage_files_pattern(netutils_t, polaris_netutils_data_t, polaris_netutils_data_t)

# tcpdump access
netutils_run(polaris_cm_rp_t, system_r)

# pidof access
dev_read_sysfs(polaris_cm_rp_t)
kernel_read_system_state(polaris_cm_rp_t)
domain_read_all_domains_state(polaris_cm_rp_t)

# /usr/sbin/ethtool access for show platform hardware slot x ha_port interface stats command
sysnet_domtrans_ifconfig(polaris_cm_rp_t)
')

optional_policy(`
polaris_ds31408_dev_use(polaris_cm_rp_t)
')

polaris_ddr_dev_use(polaris_cm_rp_t)

```

```

# allow /usr/sbin/smartctl to be operated on fsadm_exec_t
fstools_exec(polaris_cm_rp_t)

# allow access to /tmp/cmlib_eeprom_sim_smartctl.out
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "cmlib_eeprom_sim_smartctl.out")

# allow access to /dev/nvme*
dev_nvme_chr_files_manage(polaris_cm_rp_t)
dev_nvme_blk_files_manage(polaris_cm_rp_t)

#DB persistence
polaris_tldbpersist_setup(polaris_cm_rp_t)
polaris_tmp_tldb_persist_setup(polaris_cm_rp_t)

#code_sign_verify is started by cmand
polaris_code_verify_domtrans(polaris_cm_rp_t)

ifdef(^ngwc_family,`
# SELINUX Mismatch warning when doing power redundancy configuration commands
# Allow access /bootflash/nplusm-power
polaris_nplusm_power_manage(polaris_cm_rp_t)
`)

ifdef(^crankshaft_family,`
# For USB disable feature, /sys/bus/usb/drivers/usb/*/authorized is accessed
gen_require(
type sysfs_t;
)
allow polaris_cm_rp_t sysfs_t:file create;
dev_manage_sysfs_dirs(polaris_cm_rp_t)
`)

ifdef(^petra_platform,`
#allow access to /dev/petra-fpga
polaris_iots_fpga_dev_use(polaris_cm_rp_t)
#allow access to /flash6/moncfg/cfg.dat
polaris_nvram_read(polaris_cm_rp_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscmrp.te

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dnl

dnl April 2018, Victor Kamensky

dnl

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```

dnl
divert(-1)

include(`polaris_process.m4')
dnl Stub out plaris process
define(`polaris_process',`)

dnl Stub out mqipc
define(`polaris_mqipc_service_server',`)
define(`polaris_mqipc_service_client',`)
define(`polaris_mqipc_service_server_elastic_client',`)

dnl Stub out lipc
define(`polaris_lipc_service_server',`)
define(`polaris_lipc_service_client',`)

include(`polaris_ipc_ripc.m4')
include(`polaris_ipc_base_ripc_if.m4')

dnl Stub out non existent one
define(`polaris_websocket_service_server',`)
define(`polaris_cipc_service_server',`)

include(`polaris_max_scope.m4')

divert(0)dnl
#
# This is a generated file! Instead of modifying this file,
# modify proper platform TDL file.
#
## <summary>Polaris Platform Base IPC Policy Rules.</summary>
## <required val="true">
##   Needed for each polaris platform
## </required>

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_base_if.m4
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#
# March 2017, Victor Kamensky
#
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#

policy_module(polarisplogd, 1.0);

```

```

gen_require(
    type polaris_plogd_t;
)

polaris_btrace_data_manage(polaris_plogd_t)
polaris_crft_data_manage(polaris_plogd_t)
polaris_chasfs_manage(polaris_plogd_t)
polaris_tdlresolve_read(polaris_plogd_t)
polaris_tdlldb_list_dirs(polaris_plogd_t)
polaris_cpld_read(polaris_plogd_t)
polaris_flashlib_read(polaris_plogd_t)

polaris_ripc_sman_ui_serv_connect(polaris_plogd_t)

# originally when box starts /dev/log is symbolic link to /run/systemd/journal/dev-log
# but latter plogd reset links to its own socket: make sure that we have proper
# transition
gen_require(
    type devlog_t;
    type syslogd_t;
)
allow polaris_plogd_t devlog_t:sock_file manage_sock_file_perms;
allow polaris_plogd_t devlog_t:lnk_file manage_lnk_file_perms;
dev_filetrans(polaris_plogd_t, devlog_t, sock_file, "log")
# make sure that unix_dgram_socket got transitioned into syslogd_t
type_transition polaris_plogd_t polaris_plogd_t:unix_dgram_socket syslogd_t;
allow polaris_plogd_t syslogd_t:unix_dgram_socket { bind create read };

# autogen script misses connection between plogd
polaris_ripc_plog_serv_connect(polaris_plogd_t)

# why plogd needs dac_override capability?
allow polaris_plogd_t self:capability { dac_override };
allow polaris_plogd_t self:capability2 block_suspend;

polaris_dyncfg_tmp_read(polaris_plogd_t)

# plogd calls journalctl -f to get system logs including our AVC messages
# plogd also signals running journalctl to manage the buffer queues
gen_require(
    type journalctl_t;
)
journalctl_domtrans(polaris_plogd_t)
allow polaris_plogd_t journalctl_t:process signal;

# should be moved into contrib journalctl.te? journalctl tries to read
# /proc/1/environ
gen_require(

```

```

type journalctl_t;
    )
init_read_state(journalctl_t)
allow journalctl_t self:capability sys_resource;
allow journalctl_t self:process setrlimit;

# plogd calls stdbuf to set up journalctl buffering
corecmd_exec_bin(polaris_plogd_t)

# writes into pman fifo stdout
polaris_use_btrace_fifo(journalctl_t)

# /dev/log is symbolic link to /run/systemd/journal/dev-log
# need ability to search in init_var_run_t /run/systemd
# some of subjects that use syslog may not have it
gen_require(
    attribute syslog_client_type;
    )
init_search_pid_dirs(syslog_client_type)
#plog_d calls journalctl to get system log including AVC message.
allow polaris_plogd_t journalctl_t:process signal;

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisplogd.te

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```

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#

```

# polaristamsrp file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristamsrp.fc

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```

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#

```

## <summary>Polaris ftm Policy Rules.</summary>

```
#####
```

```
## <summary>
##   Write ttm /var/run socket file
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_ftm_var_sock_write`,
  gen_require(`
    type polaris_ftm_t;
    type polaris_ftm_var_run_t;
    type var_run_t;
  `)
  write_sock_files_pattern($1, var_run_t, polaris_ftm_var_run_t)
  allow $1 polaris_ftm_t:unix_stream_socket { connectto };
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisftm.if

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```
#
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#
```

```
/usr/binos/conf/iptables.sh -- gen_context(system_u:object_r:polaris_iptbl_exec_t,s0)
```

```
/tmp/rp/iptables      -d gen_context(system_u:object_r:polaris_iptbl_tmp_t,s0)
/tmp/rp/iptables/inot_fifo -p gen_context(system_u:object_r:polaris_iptbl_tmp_t,s0)
```

# in polaris we have xtables-multi at wrong location

```
/usr/bin/xtables-multi -- gen_context(system_u:object_r:iptables_exec_t,s0)
```

#fman (rp/fp) acl mgmt and iptbl modules dependency

```
/tmp/iptables.v4      gen_context(system_u:object_r:polaris_iptbl_tmp_t,s0)
/tmp/iptables.v6      gen_context(system_u:object_r:polaris_iptbl_tmp_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisiptables.fc

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```
#
```

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#

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#

## <summary>Polaris cpp\_sp Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppsp.if

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#

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#

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#

# polarisngwctblmgr file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngwctblmgr.fc

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#

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#

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#

/tmp/sysctrl\_i2c.lck gen\_context(system\_u:object\_r:polaris\_cm\_rp\_tmp\_t,s0)

/tmp/pfu\_overtime.lock gen\_context(system\_u:object\_r:polaris\_cm\_rp\_tmp\_t,s0)

/tmp/golden\_boot gen\_context(system\_u:object\_r:polaris\_cm\_rp\_tmp\_t,s0)

# dash\_fpga\_xaui.py is the backend python code for

# the cli "show platform hardware slot R0 xaui statistics"

/usr/binos/conf/dash\_fpga\_xaui.py -- gen\_context(system\_u:object\_r:polaris\_dash\_fpga\_xaui\_exec\_t,s0)

/usr/binos/bin/cmand\_us -- gen\_context(system\_u:object\_r:polaris\_cm\_rp\_exec\_t,s0)

# relabel /vol/harddisk/.inv

/vol/harddisk/.inv(/.\*)? gen\_context(system\_u:object\_r:polaris\_cm\_rp\_inv\_log\_file\_t,s0)

/vol/harddisk\_internal/.inv(/.\*)? gen\_context(system\_u:object\_r:polaris\_cm\_rp\_inv\_log\_file\_t,s0)

# .inv dir is in /bootflash in Katar eWLC

/bootflash/.inv(/.\*)? gen\_context(system\_u:object\_r:polaris\_cm\_rp\_inv\_log\_file\_t,s0)

```
/usr/binos/conf/mcp_fpga_status_cmd.sh -- gen_context(system_u:object_r:polaris_fpga_status_cmd_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscmrp.fc
```

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```
#
```

```
# August 2017, Shawn Lu
```

```
#
```

```
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```

```
# All rights reserved
```

```
#
```

```
## <summary>Polaris rrm_mgr Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrrmmgr.if
```

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```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
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```

```
# All rights reserved
```

```
#
```

```
## <summary>Polaris LIPC Policy Rules.</summary>
```

```
#####
```

```
# LIPC policy
```

```
#####
```

```
#####
```

```
## <summary>
```

```
##   Manage lipc files
```

```
## </summary>
```

```
## <param name="domain">
```

```
##   <summary>
```

```
##   Domain allowed access.
```

```
##   </summary>
```

```
## </param>
```

```
## <rolebase/>
```

```
#
```

```
interface(`polaris_lipc_manage',`
```

```
gen_require(`
```

```
type polaris_lipc_t;
```

```
`
```

```
manage_dirs_pattern($1, polaris_lipc_t, polaris_lipc_t)
```

```
manage_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
manage_lnk_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
manage_fifo_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
manage_sock_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
')
```

```
#####
```

```
## <summary>
##   Getattr of lipc files directories
## </summary>
```

```
## <param name="domain">
```

```
##   <summary>
##   Domain allowed access.
##   </summary>
```

```
## </param>
```

```
## <rolebase/>
```

```
#
```

```
interface(`polaris_lipc_getattr`,`
```

```
gen_require(`
type polaris_lipc_t;
')
```

```
    getattr_dirs_pattern($1, polaris_lipc_t, polaris_lipc_t)
    getattr_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
    getattr_lnk_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
    getattr_fifo_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
    getattr_sock_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
')
```

```
#####
```

```
## <summary>
##   Create lipc file
## </summary>
```

```
## <param name="domain">
```

```
##   <summary>
##   Domain allowed creating lipc channel.
##   </summary>
```

```
## </param>
```

```
## <param name="channel_domain">
```

```
##   <summary>
##   Domain assigned to lipc channel.
##   </summary>
```

```
## </param>
```

```
## <param name="channel_name">
```

```
##   <summary>
##   File name of lipc channel.
##   </summary>
```

```
## </param>
```

```

#
interface(`polaris_lipc_create_name',`
gen_require(`
type polaris_lipc_t;
`)
type_transition $1 polaris_lipc_t : sock_file $2 $3;
manage_sock_files_pattern($1, polaris_lipc_t, $2)

polaris_socketat_nsfs_read($1)

# not specific enough
# type_transition $1 $1 : unix_stream_socket $2;
# allow $1 $2:unix_stream_socket { listen accept bind create write read };
`)

#####
## <summary>
## Write lipc file
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to connect and write into lipc file.
## </summary>
## </param>
## <param name="channel_domain">
## <summary>
## Domain assigned to lipc channel.
## </summary>
## </param>
## <param name="server">
## <summary>
## Domain of owner of lipc channel.
## </summary>
## </param>
#
interface(`polaris_lipc_write',`
gen_require(`
type polaris_lipc_t;
`)
write_sock_files_pattern($1, polaris_lipc_t, $2)
allow $1 $3:unix_stream_socket { connectto };

polaris_socketat_nsfs_read($1)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislipc.if

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```
dnl
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dnl
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dnl
define(^polaris_lipc_service_server_aux',`dnl
type $1;
files_type($1)
polaris_lipc_$2_create_name($3)

define(^polaris_lipc_service_server_full',`dnl
polaris_lipc_service_server_aux(lipc_label($1), lipc_stem($1), process_label($2))dnl
')

define(^polaris_lipc_service_server',`dnl
ifndef(lipc_type_map($1), `', `polaris_lipc_service_server_full($1, $2)')
lipc_type_map_set(lipc_label($1), process_label($2))
')

define(^polaris_lipc_service_client_aux',`dnl
polaris_lipc_$2_write($3, $4)')

define(^polaris_lipc_service_client',`dnl
polaris_lipc_service_client_aux(lipc_label($1), lipc_stem($1), process_label($2), lipc_type_map(lipc_label($1)))dnl
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_lipc\_te.m4

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```
#
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#
```

```
policy_module(polarisbtman, 1.0);
```

```
gen_require(^
    type polaris_btman_t;
')
```

```
polaris_crft_data_manage(polaris_btman_t)
```

```

polaris_chasfs_manage(polaris_btman_t)
polaris_tdlresolve_read(polaris_btman_t)
polaris_tdlldb_list_dirs(polaris_btman_t)
polaris_cpld_read(polaris_btman_t)
polaris_flashlib_read(polaris_btman_t)

polaris_ripc_sman_ui_serv_connect(polaris_btman_t)

polaris_db_tdlldb_dir_use(polaris_btman_t)

polaris_bexecute_domtrans(polaris_btman_t)

# script starts rsync with mcp_chvrf.sh
polaris_chvrf_domtrans(polaris_btman_t)
polaris_send_signal_to_bexecute(polaris_btman_t)

corecmd_exec_bin(polaris_btman_t)
corecmd_exec_shell(polaris_btman_t)

# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_btman_t)

allow polaris_btman_t self:capability { dac_override fsetid };

polaris_cpld_read(polaris_btman_t)

# operate on all btrace files
polaris_btrace_data_manage_all(polaris_btman_t)

# btman operated on /tmp/tmppub files
type polaris_btrace_tmppub_t;
files_tmp_file(polaris_btrace_tmppub_t)

polaris_systemd_tmpfiles_tmp_filetrans(polaris_btrace_tmppub_t, dir, "tmppub")
filetrans_pattern(polaris_btman_t, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t, { file dir })
manage_files_pattern(polaris_btman_t, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)
manage_dirs_pattern(polaris_btman_t, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)

polaris_persistent_read(polaris_btman_t)

# in purge_old_core_files_from_harddisk function of btrace_rotate_util.c
# script removes outdated core files, so it needs read/write permission
# to polaris_core_file_t files.
polaris_core_file_manage(polaris_btman_t)

fs_getattr_xattr_fs(polaris_btman_t)

# btman checks for presence of /tmp/udev/etc/udev/harddisk

```

```

# through hwutil_is_harddisk_present function of hwutil-common.sh
polaris_udev_tmp_list_dirs(polaris_btman_t)

# when /bootflash or /harddisk are 100% full
allow polaris_btman_t self:capability sys_resource;

# access to /tmp/sw/boot/dmesg
polaris_boot_tmp_read(polaris_btman_t)

polaris_create_ldb_domtrans(polaris_btman_t)

# btman calls update_resolver_luid_paths which eventually calls open_brand function for
# given polaris executable (build_crdu_luid_file_paths, bcrdu_get_proc_path_internal,
# brand_type_string)
polaris_read_exec_domain(polaris_btman_t)

# btman create transitional files in /tmp directory
type polaris_btman_tmp_t;
files_tmp_file(polaris_btman_tmp_t)
files_tmp_filetrans(polaris_btman_t, polaris_btman_tmp_t, file)
manage_files_pattern(polaris_btman_t, polaris_btman_tmp_t, polaris_btman_tmp_t)

# use syslog
logging_send_syslog_msg(polaris_btman_t)

# btman unlink /tmp/rp/pvp/work/btman_first_inst
polaris_pvp_manage_tmp_files(polaris_btman_t)

# operate on btrace file in /bootflash
polaris_btrace_persistent_data_manage(polaris_btman_t)

gen_require(
    type polaris_btrace_data_t;
)
polaris_bootflash_filetrans(polaris_btman_t, polaris_btrace_data_t, dir, "tracelogs")
polaris_harddisk_filetrans(polaris_btman_t, polaris_btrace_data_t, dir, "tracelogs")
polaris_crashinfo_filetrans(polaris_btman_t, polaris_btrace_data_t, dir, "tracelogs")
polaris_bootflash_filetrans(polaris_btman_t, polaris_btrace_data_t, dir, "tan")
polaris_harddisk_filetrans(polaris_btman_t, polaris_btrace_data_t, dir, "tan")

# btman creates /tmp/rp//pvp/work/btman_first_inst directory in is_first_incarnation
# function called by btrace_rotate_init
polaris_pvp_manage_tmp_files(polaris_btman_t)

#####
# This block is policies for "request platform software system shell" CLI

# /tmp/sw/rp/0/0/rp_security/mount/usr/binos/bin/btman -f rp

```

```

#                               -s /tmp/rp/trace/stage -w /tmp/rp/trace
# - needs to read/getattr on
#   /tmp/sw/mount/*universalk9.*.SSA.pkg/usr/binos/sbin/in.telnetd
gen_require(
    type telnetd_exec_t;
)
allow polaris_btman_t telnetd_exec_t:file { getattr open read };

# btman establishes leases for trace files
allow polaris_btman_t self:capability lease;

# dump_btrace_meta walks all files with nftw
files_getattr_all_files(polaris_btman_t)
files_getattr_all_dirs(polaris_btman_t)
files_read_all_symlinks(polaris_btman_t)
files_list_non_security(polaris_btman_t)
files_read_all_files(polaris_btman_t)
files_mmap_all_files(polaris_btman_t)

# btman exports data through http protocol btm_trigger_export and schedule_newfile_export
corenet_tcp_connect_http_port(polaris_btman_t)

# LOOK AT ME: incorrect iosd-tps service_def. It should be renamed
# iosd_tps_socket-b0 in all platform.tdl files. Remove the following
# policy when CSCvp89498 is fixed.
gen_require(
    type polaris_lipc_t;
    type polaris_pman_t;
)
polaris_lipc_write(polaris_btman_t, polaris_lipc_t, polaris_pman_t)

# btman manages some persistent crashinfo files
polaris_disk_crashinfo_manage(polaris_btman_t)

#DB persistence
polaris_tdlbpersist_setup(polaris_btman_t)

polaris_tmp_tdlb_persist_setup(polaris_btman_t)

polaris_btrace_data_watch(polaris_btman_t)

# dump_btrace_meta writes to /tmp/binary_trace.1605747053/.pkginfo
polaris_install_tmp_manage(polaris_btman_t)

#allow polaris_btman_t access to polaris_cm_rp semaphore
polaris_cm_rp_sem_use(polaris_btman_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtman.te

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#

# March 2017, Victor Kamensky

#

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#

policy\_module(polarisfmanrp, 1.0);

gen\_require(`

type polaris\_fman\_rp\_t;

`)

#####

# mqipc manual, one that missing in platform tdl file

#####

# mq.-fman-log-bay0-peer0

type polaris\_fman\_log\_bay0\_peer0\_mqipc\_t;

polaris\_mqipc\_type(polaris\_fman\_log\_bay0\_peer0\_mqipc\_t)

# mq.-fman-log-bay0-peer1

type polaris\_fman\_log\_bay0\_peer1\_mqipc\_t;

polaris\_mqipc\_type(polaris\_fman\_log\_bay0\_peer1\_mqipc\_t)

# mq.-fman-log-bay0-peer2

type polaris\_fman\_log\_bay0\_peer2\_mqipc\_t;

polaris\_mqipc\_type(polaris\_fman\_log\_bay0\_peer2\_mqipc\_t)

# mq.-fman-log-bay0-peer3

type polaris\_fman\_log\_bay0\_peer3\_mqipc\_t;

polaris\_mqipc\_type(polaris\_fman\_log\_bay0\_peer3\_mqipc\_t)

# mq.-fman-log-bay0-peer4

type polaris\_fman\_log\_bay0\_peer4\_mqipc\_t;

polaris\_mqipc\_type(polaris\_fman\_log\_bay0\_peer4\_mqipc\_t)

# mq.-fman-log-bay0-peer5

type polaris\_fman\_log\_bay0\_peer5\_mqipc\_t;

polaris\_mqipc\_type(polaris\_fman\_log\_bay0\_peer5\_mqipc\_t)

# mq.-fman-log-bay0-peer6

type polaris\_fman\_log\_bay0\_peer6\_mqipc\_t;

polaris\_mqipc\_type(polaris\_fman\_log\_bay0\_peer6\_mqipc\_t)

```

# mq.-fman-log-bay0-peer7
type polaris_fman_log_bay0_peer7_mqipc_t;
polaris_mqipc_type(polaris_fman_log_bay0_peer7_mqipc_t)

# mq.-fman-log-bay0-peer8
type polaris_fman_log_bay0_peer8_mqipc_t;
polaris_mqipc_type(polaris_fman_log_bay0_peer8_mqipc_t)

polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer0_mqipc_t, fman-log-bay0-peer0)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer1_mqipc_t, fman-log-bay0-peer1)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer2_mqipc_t, fman-log-bay0-peer2)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer3_mqipc_t, fman-log-bay0-peer3)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer4_mqipc_t, fman-log-bay0-peer4)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer5_mqipc_t, fman-log-bay0-peer5)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer6_mqipc_t, fman-log-bay0-peer6)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer7_mqipc_t, fman-log-bay0-peer7)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer8_mqipc_t, fman-log-bay0-peer8)

polaris_btrace_data_manage(polaris_fman_rp_t)
polaris_crft_data_manage(polaris_fman_rp_t)
polaris_chasfs_manage(polaris_fman_rp_t)
polaris_tdlresolve_read(polaris_fman_rp_t)
polaris_tdlldb_list_dirs(polaris_fman_rp_t)
polaris_cpld_read(polaris_fman_rp_t)
polaris_flashlib_read(polaris_fman_rp_t)
polaris_lua_read(polaris_fman_rp_t)

polaris_ripc_sman_ui_serv_connect(polaris_fman_rp_t)

polaris_db_tdlldb_dir_use(polaris_fman_rp_t)

#ifdef(^nyquist_platform',`
gen_require(`
    type polaris_bt_logger_fman_rp_mqipc_t;
`)
# fman_rp may start first and create this mqipc channel
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_bt_logger_fman_rp_mqipc_t, bt_logger_fman-rp)
`)

allow polaris_fman_rp_t self:udp_socket { create ioctl };

allow polaris_fman_rp_t self:capability { dac_override };
allow polaris_fman_rp_t self:capability2 block_suspend;

# not clear why fman_rp tries to load netdev-mgmtbr kernel module
# it does not exist on ultra anyway
# type=AVC msg=audit(1478126742.967:98): avc: denied { module_request } for pid=18020 comm="fman_rp"
kmod="netdev-mgmtbr" scontext=system_u:system_r:polaris_fman_rp_t:s0

```

```

tcontext=system_u:system_r:kernel_t:s0 tclass=system
kernel_request_load_module(polaris_fman_rp_t)

polaris_socketat_nsfs_read(polaris_fman_rp_t)

polaris_dyncfg_tmp_read(polaris_fman_rp_t)

# socketat usage from fman_punt_port_mapping_init for AF_NETLINK, SOCK_DGRAM
polaris_lfts_dev_use(polaris_fman_rp_t)
allow polaris_fman_rp_t self:netlink_tcpdiag_socket {create nlmsg_read };

# fman_rp tries to write to sytemd journal when a peer is stuck
# introduced by CSCvt19772
logging_send_syslog_msg(polaris_fman_rp_t)

optional_policy(`
#fman-rp creates tmp files in acl-mgmt workflow.
polaris_fman_acl iptbl_tmp_file(polaris_fman_rp_t)
`)

# manually create mqipc channel: missing in TDL
type polaris_fm2fpm_mqipc_t;
polaris_mqipc_type(polaris_fm2fpm_mqipc_t)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fm2fpm_mqipc_t, fm2fpm_vulcan_mqipc)

optional_policy(`
polaris_fm2fpm_mqipc_use(polaris_fman_rp_t)
`)

polaris_issu_tmp_files_read(polaris_fman_rp_t)

polaris_install_tmp_read(polaris_fman_rp_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfmanrp.te
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#
# August 2017, Shawn Lu
#
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#

policy_module(polarisrifmgr, 1.0);

gen_require(`
    type polaris_rif_mgr_t;

```

)

```
polaris_btrace_data_manage(polaris_rif_mgr_t)
polaris_crft_data_manage(polaris_rif_mgr_t)
polaris_chasfs_manage(polaris_rif_mgr_t)
polaris_tdlresolve_read(polaris_rif_mgr_t)
polaris_tdlldb_list_dirs(polaris_rif_mgr_t)
polaris_cpld_read(polaris_rif_mgr_t)
polaris_lua_read(polaris_rif_mgr_t)
polaris_flashlib_read(polaris_rif_mgr_t)
polaris_lfts_dev_use(polaris_rif_mgr_t)
logging_send_syslog_msg(polaris_rif_mgr_t)
```

```
polaris_rpc_sman_ui_serv_connect(polaris_rif_mgr_t)
```

```
allow polaris_rif_mgr_t self:capability { sys_nice dac_override };
allow polaris_rif_mgr_t self:process { setsched };
# open /dev/ttyS0 console in sco_sys_init_sw_params
term_use_unallocated_ttys(polaris_rif_mgr_t)
```

```
# work with /dev/hanet device
polaris_hanet_dev_use(polaris_rif_mgr_t)
```

```
# update/read chassis serial numer /csl_p_0/vudi.pri
polaris_disk_csl_manage(polaris_rif_mgr_t)
```

```
# monitors native interfaces flap over /proc and netlink
kernel_read_network_state(polaris_rif_mgr_t)
allow polaris_rif_mgr_t self:netlink_route_socket rw_netlink_socket_perms;
allow polaris_rif_mgr_t self:unix_dgram_socket create_socket_perms;
```

```
# pidof and /proc usage
dev_read_sysfs(polaris_rif_mgr_t)
kernel_read_system_state(polaris_rif_mgr_t)
domain_read_all_domains_state(polaris_rif_mgr_t)
```

```
corecmd_exec_bin(polaris_rif_mgr_t)
```

```
kernel_dontaudit_request_load_module(polaris_rif_mgr_t)
# rifmgr creates udp socket to get interface flags in rif_rp_init
allow polaris_rif_mgr_t self:udp_socket create_socket_perms;
```

```
corenet_tcp_bind_polaris_rif_mgr_port(polaris_rif_mgr_t)
corenet_tcp_connect_polaris_rif_mgr_port(polaris_rif_mgr_t)
```

```
corenet_udp_bind_polaris_rif_mgr_port(polaris_rif_mgr_t)
corenet_udp_bind_generic_node(polaris_rif_mgr_t)
```

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\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrifmgr.te

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#

# March 2017, Victor Kamensky

#

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#

## <summary>Polaris stack\_mgr Policy Rules.</summary>

#####

## <summary>

## Read and write all stack mgr's fifo file, used as

## standard input/output.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

## <rolecap/>

#

interface(`polaris\_use\_stack\_mgr\_fifo`,`

gen\_require(`

type polaris\_stack\_mgr\_t;

`)

write\_fifo\_files\_pattern(\$1, polaris\_stack\_mgr\_t, polaris\_stack\_mgr\_t)

')

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisstackmgr.if

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#

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#

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#

/tmp/.DML\_FIFO gen\_context(system\_u:object\_r:polaris\_dmi\_vtyserverutild\_tmp\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmivtyserverutild.fc

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```
#
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#
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#

## <summary>Polaris cm_cc Policy Rules.</summary>

#####
## <summary>
##   Execute cmand_fp in the polaris_cm_fp_t domain.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_cm_cc_domtrans`,`
    gen_require(`
        type polaris_cm_cc_t, polaris_cm_cc_exec_t;
    `)

    corecmd_search_bin($1)
    domtrans_pattern($1, polaris_cm_cc_exec_t, polaris_cm_cc_t)
)

#####
## <summary>
##   Manage cm_cc_tmpfs files.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cm_cc_tmpfs_manage`,`
    gen_require(`
        type polaris_cm_cc_tmpfs_t;
    `)

    manage_files_pattern($1, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
    mmap_files_pattern($1, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
)
```

```
#####
## <summary>
##   Check presence and unlink /tmp/nim_xxd_present file created by cman cc.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolecap/>
#
interface(`polaris_nim_xxd_tmp_open_unlink`,
  gen_require(`
    type polaris_nim_xxd_tmp_t;
  `)

  allow $1 polaris_nim_xxd_tmp_t:file { open unlink }
)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismcc.if
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```

```
#
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#

```

```
## <summary>Polaris LUA Policy Rules.</summary>
```

```
#####
# Polaris lfts
#####

```

```
#####
## <summary>
##   Work (read, write, ioctl) with /dev/dev_lfts device.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#

```

```
interface(`polaris_lfts_dev_use`,`
gen_require(`
    type device_t;
    type polaris_lfts_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_lfts_device_t)
    read_chr_files_pattern($1, device_t, polaris_lfts_device_t)
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislfts.if

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```
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#
```

```
## <summary>Polaris ofa Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisofa.if

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```
#
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#
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#
```

```
/var/virtual-instance(/.*)?      gen_context(system_u:object_r:polaris_var_vman_t,s0)
```

```
/bootflash/virtual-instance(/.*)?  gen_context(system_u:object_r:polaris_disk_vman_t,s0)
```

```
/bootflash/virtual-instance.conf -- gen_context(system_u:object_r:polaris_disk_vman_t,s0)
```

```
/bootflash/vman_fdb(/.*)?        gen_context(system_u:object_r:polaris_disk_vman_t,s0)
```

```
/vol/harddisk/virtual-instance(/.*)?  gen_context(system_u:object_r:polaris_disk_vman_t,s0)
```

```
/vol/harddisk/virtual-instance.conf -- gen_context(system_u:object_r:polaris_disk_vman_t,s0)
```

```
/vol/harddisk/vman_fdb(/.*)?        gen_context(system_u:object_r:polaris_disk_vman_t,s0)
```

```
#sparrow, blackheart
```

```
/flash1/virtual-instance(/.*)?      gen_context(system_u:object_r:polaris_disk_vman_t,s0)
```

```
/flash1/virtual-instance.conf --    gen_context(system_u:object_r:polaris_disk_vman_t,s0)
```

```
/flash1/vman_fdb(/.*)?              gen_context(system_u:object_r:polaris_disk_vman_t,s0)
```

```
/tmp/vman(/.*)? gen_context(system_u:object_r:polaris_vman_tmp_t,s0)
/tmp/cgroup.log gen_context(system_u:object_r:polaris_vman_tmp_t,s0)
/tmp/vman_lxc_wdt_[0-9]* gen_context(system_u:object_r:polaris_vman_tmp_t,s0)
/tmp/trace(/.*)? gen_context(system_u:object_r:polaris_vman_tmp_t,s0)

/usr/binos/conf/vman_exec.sh -- gen_context(system_u:object_r:polaris_vman_shell_exec_t,s0)

/usr/binos/conf/cgroup_reports.sh -- gen_context(system_u:object_r:polaris_cgroup_reports_exec_t,s0)
/usr/binos/conf/vman_techsupport.sh -- gen_context(system_u:object_r:polaris_vman_tech_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisvman.fc
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```

```
#
# August 2017, Shawn Lu
#
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#

policy_module(polarisodmproxy, 1.0);

gen_require(
    type polaris_odm_proxy_t;
)

polaris_btrace_data_manage(polaris_odm_proxy_t)
polaris_crft_data_manage(polaris_odm_proxy_t)
polaris_chasfs_manage(polaris_odm_proxy_t)
polaris_tdlresolve_read(polaris_odm_proxy_t)
polaris_tdlldb_list_dirs(polaris_odm_proxy_t)
polaris_cpld_read(polaris_odm_proxy_t)
polaris_lua_read(polaris_odm_proxy_t)
polaris_flashlib_read(polaris_odm_proxy_t)

polaris_ripc_sman_ui_serv_connect(polaris_odm_proxy_t)

polaris_db_tdlldb_dir_use(polaris_odm_proxy_t)

#allow to setrlimit
allow polaris_odm_proxy_t self:capability sys_resource;
allow polaris_odm_proxy_t self:process setrlimit;
allow polaris_odm_proxy_t self:capability dac_override;

polaris_odm_clnt2svr_mqipc_create(polaris_odm_proxy_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisodmproxy.te

No license file was found, but licenses were detected in source scan.

#

# July 2017, Victor Kamensky

#

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#

## <summary>Polaris issu\_monitor Policy Rules.</summary>

#####

## <summary>

## Execute issumonitor in the polaris\_issu\_monitor domain.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed to transition.

## </summary>

## </param>

#

interface(`polaris\_issu\_monitor\_domtrans`,

gen\_require(`

type polaris\_issu\_monitor\_t, polaris\_issu\_monitor\_exec\_t;

`)

domtrans\_pattern(\$1, polaris\_issu\_monitor\_exec\_t, polaris\_issu\_monitor\_t)

')

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisissumonitor.if

No license file was found, but licenses were detected in source scan.

dnl

dnl May 2018, Victor Kamensky

dnl

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dnl

dnl Place holder to let selinux-policy makefile know that this module

dnl is autogenerated, but we have different rules for it

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisplatformipcauto.fc.in

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisplatformdbauto.te.in

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisplatformdbauto.if.in

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/autopolarisplatformipcbase.te.in

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisplatformdbauto.fc.in

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisplatformipcauto.te.in
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/autopolarisplatformipcbase.if.in
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisplatformipcauto.if.in
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
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#
```

```
policy_module(polariskeyman, 1.0);
```

```
gen_require(`
    type polaris_keyman_t;
`)
```

```
polaris_btrace_data_manage(polaris_keyman_t)
polaris_crft_data_manage(polaris_keyman_t)
polaris_chasfs_manage(polaris_keyman_t)
polaris_tdlresolve_read(polaris_keyman_t)
polaris_tdlldb_list_dirs(polaris_keyman_t)
polaris_flashlib_read(polaris_keyman_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_keyman_t)
```

```
allow polaris_keyman_t self:capability net_admin;
# keyman utilizes secure memory via ciscossl libcrypto.so (mlock)
allow polaris_keyman_t self:capability ipc_lock;
polaris_cpld_read(polaris_keyman_t)
```

```
# __get_nprocs opens /sys/devices/system/cpu/online
ifdef(`quake_platform',`
dev_read_sysfs(polaris_keyman_t)
`)
```

```
# __get_nprocs opens /sys/devices/system/cpu/online
ifdef(`supernova_platform',`
dev_read_sysfs(polaris_keyman_t)
`)
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariskeyman.te
No license file was found, but licenses were detected in source scan.
```

```
#
# July 2017, Victor Kamensky
```

```
#
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#

# polaristamdrp file contexts place holder

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristamdrp.fc
No license file was found, but licenses were detected in source scan.
```

```
#
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#
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#
```

```
# /bootflash labels
/bootflash(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/bootflash/.ssh(/.*)? gen_context(system_u:object_r:ssh_home_t,s0)
/bootflash/.ssh/ssh_host.*_key\pub gen_context(system_u:object_r:ssh_key_t,s0)
/bootflash/.ssh/ssh_host.*_key gen_context(system_u:object_r:ssh_key_t,s0)
/bootflash/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/bootflash/tan(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/bootflash/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/bootflash/debug.conf gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/bootflash/packages.conf gen_context(system_u:object_r:polaris_packages_conf_t,s0)
```

```
# /vol/bootflash4 labels
/vol/bootflash4(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/vol/bootflash4/csl_p_0(/.*)? gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/vol/bootflash4/csl_p_1(/.*)? gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/vol/bootflash4/csl_s_0(/.*)? gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)
/vol/bootflash4/csl_s_1(/.*)? gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)
/vol/bootflash4/obfl_* gen_context(system_u:object_r:polaris_obfl_data_t,s0)
```

```
# /harddisk labels
/vol/harddisk(/.*)? gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)
/vol/harddisk_internal(/.*)? gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)
/vol/harddisk/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/vol/harddisk/tan(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/vol/harddisk/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/vol/harddisk/debug.conf gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/vol/harddisk_internal/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/vol/harddisk_internal/tan(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/vol/harddisk_internal/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/vol/harddisk/packages.conf gen_context(system_u:object_r:polaris_packages_conf_t,s0)
```

```

# on 1ng persistent storage arranged differently
/csl_p_0(/.*)?          gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/csl_p_1(/.*)?          gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/csl_s_0(/.*)?          gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)
/csl_s_1(/.*)?          gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)
/obfl(/.*)?             gen_context(system_u:object_r:polaris_obfl_data_t,s0)

/vol/disk0(/.*)?        gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
# /init is symbolic link to /lib/systemd/systemd
/init -l gen_context(system_u:object_r:init_exec_t,s0)
# /disk0 is symbolic link to /vol/disk0
/disk0 -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

# scooby device
/dev/scooby -c gen_context(system_u:object_r:polaris_scooby_device_t,s0)

# spa devices handled by sys_platform driver
/dev/spa0 -c gen_context(system_u:object_r:polaris_spa_device_t,s0)
/dev/spa1 -c gen_context(system_u:object_r:polaris_spa_device_t,s0)
/dev/spa2 -c gen_context(system_u:object_r:polaris_spa_device_t,s0)
/dev/spa3 -c gen_context(system_u:object_r:polaris_spa_device_t,s0)
/dev/iocp0 -c gen_context(system_u:object_r:polaris_spa_device_t,s0)

# htdp devices
/dev/htdp[0-9]* -c gen_context(system_u:object_r:polaris_htdp_device_t,s0)

# /dev/epa device on asr1k(mcp)
/dev/epa[0-9]*          -c gen_context(system_u:object_r:polaris_epa_device_t,s0)
/dev/epactrl[0-9]*      -c gen_context(system_u:object_r:polaris_epa_device_t,s0)

# /dev/luna_fpga on asr1k(mcp)
/dev/luna_mbfpga        -c gen_context(system_u:object_r:polaris_luna_mbfpga_device_t,s0)

# /dev/dash_fpga device on fugazi(mcp)
/dev/dash_fpga -c gen_context(system_u:object_r:polaris_dash_device_t,s0)
/dev/dash_fpga_cc0 -c gen_context(system_u:object_r:polaris_dash_device_t,s0)

# /dev/astro on asr1k(mcp)
/dev/astro              -c gen_context(system_u:object_r:polaris_astro_device_t,s0)

# /dev/oob_evfc on asr1k(mcp)
/dev/oob_evfc           -c gen_context(system_u:object_r:polaris_oob_evfc_device_t,s0)

# /dev/cpp_il on asr1k(mcp)
/dev/cpp_il             -c gen_context(system_u:object_r:polaris_cpp_il_device_t,s0)

/dev/icp_adf_ctl -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_adf_gige_wd -c gen_context(system_u:object_r:polaris_icp_device_t,s0)

```

```

/dev/icp_dev0_csr -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev0_ring -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev_mem -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev_mem_page -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev_processes -c gen_context(system_u:object_r:polaris_icp_device_t,s0)

/dev/ds31408 -c gen_context(system_u:object_r:polaris_ds31408_device_t,s0)
/dev/cbdma -c gen_context(system_u:object_r:polaris_cbdma_device_t,s0)
/dev/cpp_htdp -c gen_context(system_u:object_r:polaris_cpp_htdp_device_t,s0)
/dev/n2_device -c gen_context(system_u:object_r:polaris_n2_device_t,s0)
/dev/cy2213 -c gen_context(system_u:object_r:polaris_cy2213_device_t,s0)

/dev/vega -c gen_context(system_u:object_r:polaris_vega_device_t,s0)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismcp.fc
```

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dnl April 2018, Victor Kamensky

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dnl

```
define(^max_bay_map', `defn(format(`max_bay_map[%s-%s]", ` $1', ` $2'))')
```

```
define(^max_bay_map_set', `define(format(`max_bay_map[%s-%s]", ` $1', ` $2'), ` $3'))')
```

```
define(^max_elastic_map', `defn(format(`max_elastic_map[%s-%s-%s]", ` $1', ` $2', ` $3'))')
```

```
define(^max_elastic_map_set', `define(format(`max_elastic_map[%s-%s-%s]", ` $1', ` $2', ` $3'), ` $4'))')
```

```
define(^max_scope_map', `ifelse($2, `elastic', `max_elastic_map($1, $2, $3)', `max_bay_map($1, $2))')
```

dnl RICP scope handling

```
define(^min_bay_ripc_map', `defn(format(`min_bay_ripc_map[%s-%s]", ` $1', ` $2'))')
```

```
define(^min_bay_ripc_map_set', `define(format(`min_bay_ripc_map[%s-%s]", ` $1', ` $2'), ` $3'))')
```

```
define(^min_elastic_ripc_map', `defn(format(`min_elastic_ripc_map[%s-%s-%s]", ` $1', ` $2', ` $3'))')
```

```
define(^min_elastic_ripc_map_set', `define(format(`min_elastic_ripc_map[%s-%s-%s]", ` $1', ` $2', ` $3'), ` $4'))')
```

```
define(^min_scope_ripc_map_aux', `ifelse($2, `elastic', `min_elastic_ripc_map($1, $2, $3)', `min_bay_ripc_map($1, $2))')
```

```
define(^min_scope_ripc_map', `ifelse(min_scope_ripc_map_aux($1, $2, $3), `', 0, min_scope_ripc_map_aux($1, $2, $3))')
```

```
define(^max_bay_ripc_map', `defn(format(`max_bay_ripc_map[%s-%s]", ` $1', ` $2'))')
```

```
define(^max_bay_ripc_map_set', `define(format(`max_bay_ripc_map[%s-%s]", ` $1', ` $2'), ` $3'))')
```

```
define(^max_elastic_ripc_map', `defn(format(`max_elastic_ripc_map[%s-%s-%s]", ` $1', ` $2', ` $3'))')
```

```
define(`max_elastic_ripc_map_set', `define(format(`max_elastic_ripc_map[%s-%s-%s]", ` $1', ` $2', ` $3'), ` $4'))

define(`max_scope_ripc_map_aux', `ifelse($2, `elastic', `max_elastic_ripc_map($1, $2, $3)',
`max_bay_ripc_map($1, $2)')')
define(`max_scope_ripc_map', `ifelse(max_scope_ripc_map_aux($1, $2, $3), `', 0, max_scope_ripc_map_aux($1,
$2, $3))')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_max\_scope.m4  
No license file was found, but licenses were detected in source scan.

```
#
# March 2017, Victor Kamensky
#
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#

## <summary>Polaris periodic Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisperiodic.if  
No license file was found, but licenses were detected in source scan.

```
#
# December 2019, Victor Kamensky
#
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#

## <summary>Polaris service_mgr Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisservice\_mgr.if  
No license file was found, but licenses were detected in source scan.

```
#
# March 2017, Victor Kamensky
#
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#

policy_module(polariscommon, 1.0);
```

```
#####
# Polaris common
```

```
#####
```

```
# domain that holds all polaris processes  
attribute polaris_domain;
```

```
# domain that holds all polaris processes executables  
attribute polaris_exec_domain;
```

```
# domain that holds all polaris processes plus few base types that operates on  
# during system start, like initrc_t and unconfined_service_t. Please remove  
# unconfined types latter.  
attribute polaris_extended_domain;
```

```
gen_require(  
    type unconfined_t;  
    type unconfined_service_t;  
    type initrc_t;  
    type init_t;  
)  
typeattribute unconfined_t polaris_extended_domain;  
typeattribute unconfined_service_t polaris_extended_domain;  
typeattribute initrc_t polaris_extended_domain;  
typeattribute init_t polaris_extended_domain;
```

```
# common permissions that are safe to grant and hard to root cause.  
# these permissions may need to be turned off during development or tightened  
# in future releases
```

```
gen_require(  
    attribute domain;  
)  
# sys_resource denial is seen due to disk full issue  
# and possibly FD exceeding limit  
allow domain self:capability sys_resource;
```

```
# When management interface is enabled for development Polaris device can be  
# access by telnet, which directly drops into shell. It would be desirreably  
# to remove telnet functionality att all. But for now we need transition  
# rule to get shell running in unconfined domain.
```

```
gen_require(  
    type telnetd_t;  
)
```

```
unconfined_shell_domtrans(telnetd_t)
```

```
#####
```

```
# This block is policies for "request platform software system shell" CLI.
```

```
# Execute bexecute in polaris_bexecute domain.
```

```
polaris_bexecute_domtrans(telnetd_t)
```

```

# /tmp/sw/rp/0/0/rp_security/mount/usr/binos/sbin/in.telnetd
#
# -L /usr/binos/conf/brelay.sh
# - this needs read/write/create access to /tmp/rp/trace/.in_telnetd_*.bin.tmp
# which later gets renamed to /tmp/rp/trace/telnetd_service_sh_*.bin
polaris_btrace_data_manage(telnetd_t)
# mcp_telnetd_init through btrace_application_start calls get_chassis_number
# so it needs chasfs access
polaris_chasfs_read(telnetd_t)
polaris_cpld_read(telnetd_t)
polaris_btrace_lvl_config_manage(telnetd_t)
#####

# LOOK AT ME: rsync needs sys_admin capability
# only seen when we boot in enforcing mode, localtime glibc library call
# needs time zone information and through __tz_convert function it eventually
# calls syspage function and that in turns calls Cisco syspage related
# prctl that is protected by CAP_ADMIN now
gen_require(
    type rsync_t;
)
allow rsync_t self:capability sys_admin;

# mount_packages.sh systemd unit runs under init_t and it leaks unix socket
gen_require(
    type rsync_t;
    type init_t;
)
allow rsync_t init_t:unix_stream_socket getattr;

# LOOK AT ME: auditd needs sys_admin capability
# only seen when we boot in enforcing mode, denials happens upon exec of
# auditdsp why is not entirely clear
gen_require(
    type auditd_t;
)
allow auditd_t self:capability sys_admin;

# LOOK AT ME:
# Because Cisco kernel features check for capability sys_admin
# before granting access to it. It turns out to be mistake because
# in SELinux universe being root does not mean one have sys_admin
# capability. For now grant sys_admin capability to everyone :(
gen_require(
    attribute domain;
)
allow domain self:capability sys_admin;

```

```

# LOOK AT ME:
# all polaris SMU system is based on LD_LIBRARY_PATH passing from
# parent to child, but if auxv AT_SECURE would be set to 1, glibc
# will clean LD_LIBRARY_PATH and other environment variables when
# it execve another process. We need to grant noatsecure to all
# processes
gen_require(
    attribute domain;
)
allow domain domain:process { noatsecure rlimitinh };

# nfs server exporting some directories like /harddisk
gen_require(
    type nfsd_t;
)
polaris_disk_bootflash_read_lnk(nfsd_t)
polaris_harddisk_read(nfsd_t)

# nfs server check hugetlbfs files system
gen_require(
    type hugetlbfs_t;
)
list_dirs_pattern(nfsd_t, hugetlbfs_t, hugetlbfs_t)

# temporarily addressing denial,
# preferable to turn on nfs_export_all_rw/ro boolean
gen_require(
    type removable_t;
)
list_dirs_pattern(nfsd_t, removable_t, removable_t)

# firmware type
type polaris_firmware_t;
files_type(polaris_firmware_t)

# some systemd unit creates /firmware directory in initramfs
gen_require(
    attribute domain;
    type root_t;
)
filetrans_pattern(domain, root_t, polaris_firmware_t, dir, "firmware")

# handling /tmp/debug.conf, created by systemd unit
gen_require(
    type polaris_debug_conf_t;
    type unconfined_service_t;
)
files_tmp_filetrans(unconfined_service_t, polaris_debug_conf_t, {file lnk_file}, "debug.conf")

```

```

# /tmp/etc files; serving as /etc like but sitting in mutable storage
# (assuming that real /etc would become read-only eventually)
type polaris_etc_t;
files_type(polaris_etc_t);

# /tmp/sv files
type polaris_sv_tmp_t;
files_tmp_file(polaris_sv_tmp_t)

# /dev/i2c-N
type polaris_i2c_device_t;
dev_node(polaris_i2c_device_t)

# remap_mem0 device
type polaris_remap_mem_device_t;
dev_node(polaris_remap_mem_device_t)

type polaris_ebf_t;
files_type(polaris_ebf_t)

# allow all domains map/read ebf files
gen_require(
    attribute domain;
)
polaris_ebf_map(domain)

# btrace files for telnetd, since telnetd is open source label
# and it does not use our domain creation template
gen_require(
    type telnetd_t;
)
type polaris_telnetd_bt_t;
polaris_btrace_data_type(polaris_telnetd_bt_t)
polaris_btrace_data_client(telnetd_t, polaris_telnetd_bt_t)

type polaris_telnetd_maroon_t;
polaris_maroon_data_type(polaris_telnetd_maroon_t)
polaris_maroon_data_client(telnetd_t, polaris_telnetd_maroon_t)

#####
# "install add file" on ULTRA invokes:
# /tmp/sw/rp/0/0/rp_security/mount/usr/binos/sbin/in.telnetd -L /usr/binos/conf/brelay.sh
# That needs getattr on /lib/systemd/system/ksm.service
polaris_ksm_run_check(telnetd_t)

# restorecon needs sys_resource capability
gen_require(

```

```

type setfiles_t;
)
allow setfiles_t self:capability sys_resource;

# accessing /sys/firmware/dmi/tables/DMI
gen_require(
    type dmidecode_t;
    type sysfs_t;
)
mmap_files_pattern(dmidecode_t, sysfs_t, sysfs_t)
gen_require(
    type dmidecode_t;
    type memory_device_t;
)
allow dmidecode_t memory_device_t:chr_file map;
# called by confd_t label with it is file as stdin
polaris_confd_tmp_use_fifo(dmidecode_t)

# rpcbind binds to port
gen_require(
    type rpcbind_t;
)
corenet_udp_bind_generic_port(rpcbind_t)

# when polaris_unconfined we need to mark all subject labels except
# iosd lable to run as unconfined
#ifdef(`polaris_unconfined',`
    gen_require(
        type auditd_t;
        type dhcpc_t;
        type getty_t;
        type inetd_t;
        type initrc_t;
        type init_t;
        type journalctl_t;
        type nfsd_t;
        type ntpd_t;
        type rpcbind_t;
        type rpcd_t;
        type rsync_t;
        type setfiles_t;
        type sshd_t;
        type syslogd_t;
        type system_dbusd_t;
        type udev_t;
        type vird_t;
        type virtlogd_t;
        type ldconfig_t;

```

```

        type hostname_t;
    )
    unconfined_domain(auditd_t)
    unconfined_domain(dhcpc_t)
    unconfined_domain(getty_t)
    unconfined_domain/inetd_t)
    unconfined_domain(initrc_t)
    unconfined_domain(init_t)
    unconfined_domain(journalctl_t)
    unconfined_domain(nfsd_t)
    unconfined_domain(ntpd_t)
    unconfined_domain(rpcbind_t)
    unconfined_domain(rpcd_t)
    unconfined_domain(rsync_t)
    unconfined_domain(setfiles_t)
    unconfined_domain(sshd_t)
    unconfined_domain(syslogd_t)
    unconfined_domain(system_dbusd_t)
    unconfined_domain(udev_t)
    unconfined_domain(virtfd_t)
    unconfined_domain(virtlogd_t)
    unconfined_domain(ldconfig_t)
    unconfined_domain(hostname_t)
)

ifdef(`polaris_unconfined',`
optional_policy(`
    gen_require(`
        type container_runtime_t;
    ')
    unconfined_domain(container_runtime_t)
)
)

# /tmp/rsync_log_dir files
type polaris_rsync_tmp_t;
files_tmp_file(polaris_rsync_tmp_t)

# activate correct named transition for basic directories
# when code runs under unconfined_service_t, i.e calls ip
# command that runs under ifconfig_t and creates /run/netns
gen_require(`
    type unconfined_service_t;
)
domain_named_filetrans(unconfined_service_t)
gen_require(`
    type ifconfig_t;
    type ifconfig_var_run_t;

```

```

')
allow ifconfig_t ifconfig_var_run_t:dir mounton;

# earlier invocation of ifconfig complains about tmp_t mounton
# on /sys directory
gen_require(
    type tmp_t;
)
allow ifconfig_t tmp_t:dir mounton;

#SERDES library stores info in /tmp/serdes_asic_key_dir/*
type polaris_serdes_asic_key_tmp_t;
files_tmp_file(polaris_serdes_asic_key_tmp_t)

# /dev/shm/vrf_shm access
type polaris_vrf_shm_t;
files_type(polaris_vrf_shm_t)

# /dev/shm/cerrno_dll access
type polaris_cerr_shm_t;
files_tmpfs_file(polaris_cerr_shm_t)

# for /sbin/ip: /dev/shm/vrf_shm access in netns creation
gen_require(
    type ifconfig_t;
)
polaris_vrf_shm_manage(ifconfig_t)

# for /sbin/ip: adds lfts device in netns creation
polaris_lfts_dev_use(ifconfig_t)

# new systemd-tmpfiles needs this permissions
gen_require(
    type systemd_tmpfiles_t;
)
allow systemd_tmpfiles_t self:capability sys_resource;
allow systemd_tmpfiles_t self:process setrlimit;

gen_require(
    type unconfined_service_t;
)
ssh_initrc_domtrans(unconfined_service_t)

#wlc awips
type polaris_awips_signature_file_t;
polaris_pfile_type(polaris_awips_signature_file_t)

# /usr/bin/curl

```

```

type polaris_curl_t;
type polaris_curl_exec_t;
init_system_domain(polaris_curl_t, polaris_curl_exec_t)
corenet_udp_bind_generic_node(polaris_curl_t)
auth_use_nsswitch(polaris_curl_t)
polaris_crft_data_read(polaris_curl_t)

# for ip netns exec X curl
optional_policy(`
    polaris_curl_domtrans(ifconfig_t)
`)

# /etc/init.d/sshd that runs under initrc_t through ssh-keygen
# creates /config/.ssh directory if does not exist; /config
# directory is typically symlink to /bootflash
gen_require(`
    type initrc_t;
    type ssh_home_t;
`)
polaris_bootflash_filetrans(initrc_t, ssh_home_t, dir, ".ssh")

# /tmp/ldwm_envelope file
type polaris_ldwm_envelope_tmp_t;
files_tmp_file(polaris_ldwm_envelope_tmp_t)
gen_require(`
    type initrc_t;
    type init_t;
`)
files_tmp_filetrans({ initrc_t init_t }, polaris_ldwm_envelope_tmp_t, file, "ldwm_envelope")

#####
# CLI: show platform software tech-support
#####
polaris_utility_domain_template(tech_support)
polaris_bexecute_domain(polaris_tech_support_t, polaris_tech_support_exec_t)
polaris_bexecute_domtrans(polaris_tech_support_t)

# allow to run readlink -f /usr/binos/conf/psimple.sh
corecmd_exec_bin(polaris_tech_support_t)

# Additional policies needed for workflow
auth_use_nsswitch(polaris_tech_support_t)
dev_list_sysfs(polaris_tech_support_t)
polaris_chasfs_read(polaris_tech_support_t)
polaris_cpld_read(polaris_tech_support_t)
# scripts stdin is set by hman and needs access to pipes like pipe:[271524]
polaris_hman_use_fifo(polaris_tech_support_t)
# Allow ls to /tmp/ufs/crashinfo

```

```

optional_policy(
    polaris_ncd_tmp_read(polaris_tech_support_t)
)

# Allow readlink to /usb0 and /usb1
optional_policy(
    fs_read_removable_symlinks(polaris_tech_support_t)
)

gen_require(
    type polaris_btrace_tmppub_t;
    type polaris_disk_bootflash_t;
    type polaris_disk_crashinfo_t;
)

# platform_tech_support.sh creates misc files/dirs under /tmp/tmppub
type polaris_tech_support_tmp_t;
files_tmp_file(polaris_tech_support_tmp_t)
filetrans_pattern(polaris_tech_support_t, polaris_btrace_tmppub_t, polaris_tech_support_tmp_t, { file dir })
# misc file directly in /tmp like /tmp/esg_tech_support_command_file_out.txt
files_tmp_filetrans(polaris_tech_support_t, polaris_tech_support_tmp_t, file,
"esg_tech_support_command_file_out.txt")
files_tmp_filetrans(polaris_tech_support_t, polaris_tech_support_tmp_t, file,
"sdwan_tech_support_command_file_out.txt")
manage_files_pattern(polaris_tech_support_t, polaris_tech_support_tmp_t, polaris_tech_support_tmp_t)
manage_dirs_pattern(polaris_tech_support_t, polaris_tech_support_tmp_t, polaris_tech_support_tmp_t)

# /bootflash/certs
type polaris_ap_cert_file_t;
files_type(polaris_ap_cert_file_t)
polaris_pfile_type(polaris_ap_cert_file_t)

# Additional policies needed for workflow when file option is used
# show platform software tech-support file bootflash:show_tech_file
polaris_bootflash_manage(polaris_tech_support_t)
polaris_disk_crashinfo_manage(polaris_tech_support_t)
fs_getattr_tmpfs(polaris_tech_support_t)
polaris_btrace_persistent_data_read(polaris_tech_support_t)

type polaris_rommon_info_tmp_t;
files_tmp_filetrans(initrc_t, polaris_rommon_info_tmp_t, file, "existing_rommon_info")
manage_files_pattern(initrc_t, polaris_rommon_info_tmp_t, polaris_rommon_info_tmp_t)
fs_associate_tmpfs(polaris_rommon_info_tmp_t)

# tamlib debug file
type polaris_tamlib_dbg_file_t;
polaris_pfile_type(polaris_tamlib_dbg_file_t)

```

```
# read /proc/cmdline
kernel_read_system_state(polaris_tech_support_t)
# read rmonbifo files such as env_var.sh
polaris_rmonbifo_tmp_read(polaris_tech_support_t)
# read /tmp/sw/boot/base_pkg
polaris_boot_tmp_read(polaris_tech_support_t)
```

```
# /dev/DDR
type polaris_DDR_device_t;
dev_node(polaris_DDR_device_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscommon.te
No license file was found, but licenses were detected in source scan.
```

```
dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl RIPC Base Interface Map: track that type declarations unique
define(^rip_base_type_map', `defn(format(`rip_base_type_map[%s]", ` $1'))')
define(^rip_base_type_map_set', `define(format(`rip_base_type_map[%s]", ` $1'), ` $2'))

define(^rip_base_port_map', `defn(format(`rip_base_port_map[%s]", ` $1'))')
define(^rip_base_port_map_set', `define(format(`rip_base_port_map[%s]", ` $1'), ` $2'))

define(^polaris_rip_portcon', portcon tcp $1 gen_context(system_u:object_r:$2,s0))

define(^polaris_rip_portcon_aux', `dnl
ifelse(rip_base_port_map($1), `', `polaris_rip_portcon($1, $2)')
rip_base_port_map_set($1, $2)
')

define(^polaris_rip_portcon_many',
`polaris_rip_portcon_aux(eval($2 + $3), $1)
ifelse($4, $3, `', `polaris_rip_portcon_many($1, $2, eval($3 + 1), $4)')')

define(^polaris_rip_service_server_aux', `dnl
type $1, port_type, defined_port_type;
$4
')

define(^polaris_rip_service_server_full', `dnl
polaris_rip_service_server_aux(rip_label($1), rip_stem($1), process_label($2),
polaris_rip_portcon_many(rip_label($1), $5, min_scope_rip_map($3, $4, $2),
```

```
max_scope_ripc_map($3, $4, $2)))
```

```
)
```

```
define(`polaris_ripc_service_server',`dnl
```

```
ifelse(ripc_base_type_map($1),`,`,`polaris_ripc_service_server_full($1, $2, $3, $4, $5)')
```

```
ripc_base_type_map_set($1, 1)
```

```
)
```

```
define(`polaris_ripc_service_client',`dnl
```

```
ifelse(ripc_base_type_map($1),`,`,`polaris_ripc_service_server_full($1, $2, $3, $4, $5)')
```

```
ripc_base_type_map_set($1, 1)
```

```
)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_base_ripc_te.m4
```

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```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2017-2019 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
## <summary>Polaris ngwc_plfm_mgr Policy Rules.</summary>
```

```
#####
```

```
## <summary>
```

```
## Read /tmp/installer files and directories
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_ngwc_plfm_mgt_tmp_manage',`
```

```
gen_require(`
```

```
type polaris_ngwc_plfm_mgr_tmp_t;
```

```
)
```

```
manage_dirs_pattern($1, polaris_ngwc_plfm_mgr_tmp_t, polaris_ngwc_plfm_mgr_tmp_t)
```

```
manage_files_pattern($1, polaris_ngwc_plfm_mgr_tmp_t, polaris_ngwc_plfm_mgr_tmp_t)
```

```
)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwcplfm_mgr.if
```

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```
#
# April 2017, Victor Kamensky
#
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#

## <summary>Polaris dmi_dmiauthd Policy Rules.</summary>

#####
## <summary>
##   Connect to and send messages to dmiauthd.
##   tmp/.DmiAuth.sock unix datagram sockets.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_dmi_dmiauthd_dgram_send`,`
    gen_require(`
        type polaris_dmi_dmiauthd_tmp_t;
        type polaris_dmi_dmiauthd_t;
    `)
    allow $1 self:unix_stream_socket {create_socket_perms};
    allow $1 polaris_dmi_dmiauthd_t:unix_stream_socket {connectto };
    write_sock_files_pattern($1, polaris_dmi_dmiauthd_tmp_t,polaris_dmi_dmiauthd_tmp_t)
)`

#####
## <summary>
##   Manage dmiauthd fifo files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_dmiauthd_tmp_manage`,`
    gen_require(`
        type polaris_dmi_dmiauthd_tmp_t;
        type tmp_t;
    `)
    manage_fifo_files_pattern($1, tmp_t, polaris_dmi_dmiauthd_tmp_t)
`
```

)

#####

## <summary>

## Write into fifo file created by dmiauthd, typical case when

## dmiauthd starts script under popen.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_dmiauthd\_use\_fifo`,`

gen\_require(`

type polaris\_dmi\_dmiauthd\_t;

`)

write\_fifo\_files\_pattern(\$1, polaris\_dmi\_dmiauthd\_t, polaris\_dmi\_dmiauthd\_t)

`)

#####

## <summary>

## Manage /tmp/netconf-yang-diag/ files

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

## <rolebase/>

#

interface(`polaris\_dmiauthd\_tmp\_diags\_manage`,`

gen\_require(`

type polaris\_dmi\_dmiauthd\_tmp\_diags\_t;

`)

manage\_files\_pattern(\$1, polaris\_dmi\_dmiauthd\_tmp\_diags\_t, polaris\_dmi\_dmiauthd\_tmp\_diags\_t)

manage\_dirs\_pattern(\$1, polaris\_dmi\_dmiauthd\_tmp\_diags\_t, polaris\_dmi\_dmiauthd\_tmp\_diags\_t)

manage\_lnk\_files\_pattern(\$1, polaris\_dmi\_dmiauthd\_tmp\_diags\_t, polaris\_dmi\_dmiauthd\_tmp\_diags\_t)

`)

#####

## <summary>

## Read /tmp/netconf-yang-diag/ files

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

```

## </param>
## <rolebase/>
#
interface(`polaris_dmiauthd_tmp_diags_read`,`
    gen_require(`
        type polaris_dmi_dmiauthd_tmp_diags_t;
    `)
    read_files_pattern($1, polaris_dmi_dmiauthd_tmp_diags_t, polaris_dmi_dmiauthd_tmp_diags_t)
    list_dirs_pattern($1, polaris_dmi_dmiauthd_tmp_diags_t, polaris_dmi_dmiauthd_tmp_diags_t)
    read_lnk_files_pattern($1, polaris_dmi_dmiauthd_tmp_diags_t, polaris_dmi_dmiauthd_tmp_diags_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmidmiauthd.if

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```

#
# March 2019, Shikhar Dogra
#
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#

```

# polarisfmancc file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfmancc.fc

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```

dnl
dnl April 2018, Victor Kamensky
dnl
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dnl
define(`lipc_stem', `translit(patsubst($1, `-lipc$', `'), `-', `_)')
define(`lipc_label', `format(`polaris_%s_lipc_t', lipc_stem($1))')

dnl Lipc Type Map: track that type declations unique
define(`lipc_type_map', `defn(format(`lipc_type_map[%s]', `$1'))')
define(`lipc_type_map_set', `define(format(`lipc_type_map[%s]', `$1'), `$2')')

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_lipc.m4

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```

#
# February 2020, Victor Kamensky

```

```

#
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#

policy_module(polariscfgmgr, 1.0);

gen_require(
    type polaris_cfgmgr_t;
)
polaris_chasfs_manage(polaris_cfgmgr_t)
# read day0_oper.xml and write local.data.tmp
polaris_bootflash_manage(polaris_cfgmgr_t)
polaris_boot_tmp_read(polaris_cfgmgr_t)
polaris_cpld_read(polaris_cfgmgr_t)
polaris_tdlresolve_read(polaris_cfgmgr_t)
polaris_flashlib_read(polaris_cfgmgr_t)

polaris_ripc_sman_ui_serv_connect(polaris_cfgmgr_t)

polaris_db_tlddb_dir_use(polaris_cfgmgr_t)

logging_send_syslog_msg(polaris_cfgmgr_t)

# vconfd_load_shared_schemas
polaris_confd_shared_schema_read(polaris_cfgmgr_t)

polaris_cedge_reset_ns(polaris_cfgmgr_t)

polaris_cedge_etc_manage(polaris_cfgmgr_t)

# /etc/version is opened via "show sdwan version"
polaris_confd_etc_read(polaris_cfgmgr_t)

# /var/run/.cfgmgr socket and pid
type polaris_cfgmgr_var_run_t;
files_pid_file(polaris_cfgmgr_var_run_t)
manage_files_pattern(polaris_cfgmgr_t, polaris_cfgmgr_var_run_t, polaris_cfgmgr_var_run_t)
manage_sock_files_pattern(polaris_cfgmgr_t, polaris_cfgmgr_var_run_t, polaris_cfgmgr_var_run_t)
files_pid_filetrans(polaris_cfgmgr_t, polaris_cfgmgr_var_run_t, { file sock_file })

# sets up symlink /var/run/netns/default to pid 1 netns
sysnet_manage_ifconfig_run(polaris_cfgmgr_t)

# PLEASE LOOK AT ME create_syslog_conf_file function in
# viptela/cfgmgr/cfgmgr_logging.c creates /etc/syslog.conf.sysklogd file
# that nobody uses in polaris
files_manage_etc_files(polaris_cfgmgr_t)

```

```

# in cfgmgr_vpn_namespace_add creates udp socket
allow polaris_cfgmgr_t self:udp_socket create_socket_perms;

# watch /bootflash/sdwan/day0_oper.xml
polaris_persistent_watch(polaris_cfgmgr_t)

# compute_available_memory executes '/bin/df /dev/shm'
corecmd_exec_bin(polaris_cfgmgr_t)
# vip_binos_cpufreq calls sysconf
dev_read_sysfs(polaris_cfgmgr_t)
# cfgmgr_show_system_get_elem collects SDWAN_DISK_MOUNT (/bootflash) fs info
fs_getattr_xattr_fs(polaris_cfgmgr_t)
# crashlist_refresh collects info about corefiles
polaris_core_file_read(polaris_cfgmgr_t)
# cfgmgr_show_system_get_elem collects info about /bootflash/.installer fs
polaris_disk_install_read(polaris_cfgmgr_t)
# cfgmgr_show_system_get_elem() collects available mem info by executing
# '/bin/df /tmp/rp/tlddb'
polaris_tlddb_list_dirs(polaris_cfgmgr_t)

#vip_binos_cpufreq() performs file operations on PROC_CPUSTAT_FILE (/proc/stat)
polaris_disk_install_fs_getattr(polaris_cfgmgr_t)
#vip_binos_meminfo() reads PROC_MEMINFO_PATH (/proc/meminfo)
kernel_read_system_state(polaris_cfgmgr_t)

# configure ip address on system interface on vrf 1
sysnet_domtrans_ifconfig(polaris_cfgmgr_t)

# create tunnel interface in cfgmgr_tun_alloc function
corenet_rw_tun_tap_dev(polaris_cfgmgr_t)
allow polaris_cfgmgr_t self:tun_socket create;

# works if /proc/accept_source_route file of system interface
kernel_rw_net_sysctls(polaris_cfgmgr_t)

# work with /tmp/xml/geostats
polaris_cedge_xml_tmp_manage(polaris_cfgmgr_t)

# work with /tmp/tmp/geostats
polaris_cedge_tmp_manage(polaris_cfgmgr_t)
allow polaris_cfgmgr_t self:process setpgid;

# map on /etc/passwd
auth_map_passwd(polaris_cfgmgr_t)

# give read permissions for /tmp/GPS_supported file created by iosd
polaris_iosd2iox_tmp_read(polaris_cfgmgr_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscfgmgr.te

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dnl

dnl May 2018, Manohar Hungund

dnl

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dnl

dnl Starfleet Platform Max Bay Limits

max\_bay\_map\_set(`rp', `per\_bay', 0)

max\_bay\_map\_set(`bp', `per\_bay', 0)

max\_bay\_map\_set(`cc', `per\_bay', 1)

max\_bay\_map\_set(`fp', `per\_bay', 1)

min\_bay\_ripc\_map\_set(`rp', `per\_bay', 0)

min\_bay\_ripc\_map\_set(`bp', `per\_bay', 0)

min\_bay\_ripc\_map\_set(`cc', `per\_bay', 1)

min\_bay\_ripc\_map\_set(`fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(`rp', `per\_bay', 1)

max\_bay\_ripc\_map\_set(`bp', `per\_bay', 1)

max\_bay\_ripc\_map\_set(`cc', `per\_bay', 1)

max\_bay\_ripc\_map\_set(`fp', `per\_bay', 1)

min\_bay\_ripc\_map\_set(`rp', `global', 0)

min\_bay\_ripc\_map\_set(`bp', `global', 0)

min\_bay\_ripc\_map\_set(`cc', `global', 1)

min\_bay\_ripc\_map\_set(`fp', `global', 0)

max\_bay\_ripc\_map\_set(`rp', `global', 1)

max\_bay\_ripc\_map\_set(`bp', `global', 1)

max\_bay\_ripc\_map\_set(`cc', `global', 1)

max\_bay\_ripc\_map\_set(`fp', `global', 1)

dnl in elastic scope each process has its own value

max\_elastic\_map\_set(`rp', `elastic', BPROC\_ODM, 0)

max\_elastic\_map\_set(`cc', `elastic', BPROC\_ODM, 0)

max\_elastic\_map\_set(`fp', `elasitc', BPROC\_ODM, 0)

max\_elastic\_map\_set(`rp', `elastic', BPROC\_WNCD, 0)

max\_elastic\_map\_set(`cc', `elastic', BPROC\_WNCD, 0)

max\_elastic\_map\_set(`fp', `elastic', BPROC\_WNCD, 0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/bigbangmaps.m4

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dnl

dnl Nyquist Platform Max Bay Limits

max\_bay\_map\_set(rp, `per\_bay', 0)

max\_bay\_map\_set(cc, `per\_bay', 0)

max\_bay\_map\_set(fp, `per\_bay', 0)

dnl in elastic scope each process has its own value

max\_elastic\_map\_set(rp, `elastic', BPROC\_ODM, 0)

max\_elastic\_map\_set(cc, `elastic', BPROC\_ODM, 0)

max\_elastic\_map\_set(fp, `elasitic', BPROC\_ODM, 0)

max\_elastic\_map\_set(rp, `elastic', BPROC\_WNCD, 0)

max\_elastic\_map\_set(cc, `elastic', BPROC\_WNCD, 0)

max\_elastic\_map\_set(fp, `elastic', BPROC\_WNCD, 0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/quake2maps.m4

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#

# August 2017, Shawn Lu

#

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#

# polarisodmproxy file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisodmproxy.fc

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# August 2017, Shawn Lu

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#

## <summary>Polaris rif\_mgr Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrifmgr.if

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```
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# March 2017, Victor Kamensky
#
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#

#
# August 2018 Man-Yee Hau
#
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/usr/cpp/bin/qfp-ucode-csr -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-csr-us -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-csx -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-c8kv -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-wlc -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-utah -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-tsn -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-tsn-le -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-supernova -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-blackheart -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-sparrow -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-aventus -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-cabo -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-goldbeach -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-radium -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-fugazi -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-sumatra -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-nanook -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-csr-fb -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/var/run/.rte_config -- gen_context(system_u:object_r:polaris_qfp_var_run_t,s0)

/dev/netmap -c gen_context(system_u:object_r:polaris_netmap_device_t,s0)

/dev/svc_eng_punt[0-9]* -c gen_context(system_u:object_r:polaris_sep_device_t,s0)

# qfp memif interfaces
/bootflash/SHARED-IOX/memif(/.*)? gen_context(system_u:object_r:polaris_qfp_memif_t,s0)
/tmp/memif(/.*)? gen_context(system_u:object_r:polaris_qfp_memif_t,s0)

# CSR & C8KV infiniband devices for Azure
/dev/infiniband/uverbs[0-9]* -c gen_context(system_u:object_r:polaris_infiniband_device_t,s0)

/etc/rc.d/init.d/iocdbd.sh -- gen_context(system_u:object_r:polaris_iocdbd_exec_t,s0)
```

```
# For Intel quickassist (qat) v1.5 - Note that mcp_family also includes this.
# fugazi uses polarismcp.fc and polasrisqfp.fc so need to exclude it here.
ifndef(`mcp_family',`
/dev/icp_adf_ctl -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev_processes -c gen_context(system_u:object_r:polaris_icp_device_t,s)
')
```

```
# For platforms which use Intel quickassist (qat) v1.7
/dev/usdm_drv      -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/qat_adf_ctl   -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/qat_dev_processes -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
```

```
# For platforms which use the musdk from the Marvell 10.3.x.x SDK
/dev/musdk-cma    -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisqfp.fc
```

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```
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#
```

```
/usr/binos/conf/telnetd_service.sh -- gen_context(system_u:object_r:polaris_tservice_telnet_exec_t,s0)
/usr/binos/conf/sshd_service.sh -- gen_context(system_u:object_r:polaris_tservice_ssh_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristbservice.fc
```

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```
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#
```

```
/usr/binos/conf/rollback_timer.sh -- gen_context(system_u:object_r:polaris_rbtimer_exec_t,s0)
```

```
/bootflash/.rollback_timer(/.*)?      gen_context(system_u:object_r:polaris_rbtimer_bootflash_t,s0)
/tmp/rp/rollback_timer(/.*)?          gen_context(system_u:object_r:polaris_rbtimer_tmp_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrollbacktimer.fc
```

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dnl

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dnl

dnl Katar WLC Platform Max Bay Limits

max\_bay\_map\_set(`rp', `per\_bay', 0)

max\_bay\_map\_set(`cc', `per\_bay', 3)

max\_bay\_map\_set(`fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(`rp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(`cc', `per\_bay', 3)

max\_bay\_ripc\_map\_set(`fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(`rp', `global', 0)

max\_bay\_ripc\_map\_set(`cc', `global', 3)

max\_bay\_ripc\_map\_set(`fp', `global', 0)

dnl in elastic scope each process has its own value

max\_elastic\_map\_set(`rp', `elastic', BPROC\_ODM, 1)

max\_elastic\_map\_set(`cc', `elastic', BPROC\_ODM, 1)

max\_elastic\_map\_set(`fp', `elasitc', BPROC\_ODM, 1)

max\_elastic\_map\_set(`rp', `elastic', BPROC\_WNCD, 7)

max\_elastic\_map\_set(`cc', `elastic', BPROC\_WNCD, 7)

max\_elastic\_map\_set(`fp', `elastic', BPROC\_WNCD, 7)

max\_elastic\_ripc\_map\_set(`rp', `elastic', BPROC\_ODM, 1)

max\_elastic\_ripc\_map\_set(`cc', `elastic', BPROC\_ODM, 1)

max\_elastic\_ripc\_map\_set(`fp', `elasitc', BPROC\_ODM, 1)

max\_elastic\_ripc\_map\_set(`rp', `elastic', BPROC\_WNCD, 7)

max\_elastic\_ripc\_map\_set(`cc', `elastic', BPROC\_WNCD, 7)

max\_elastic\_ripc\_map\_set(`fp', `elastic', BPROC\_WNCD, 7)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/katarmaps.m4

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#

# polariscontainer file contexts place holder

```

# All the possible IOX flash_dir/harddisk_dir from iox_polaris.conf for docker
# Expected labels for docker as per container.fc
/bootflash/docker(/.*)?          gen_context(system_u:object_r:container_var_lib_t,s0)
/bootflash/docker./*/config\env   gen_context(system_u:object_r:container_share_t,s0)
/bootflash/docker./*/containers/./.*\log gen_context(system_u:object_r:container_log_t,s0)
/bootflash/docker./*/containers/./hostname gen_context(system_u:object_r:container_share_t,s0)
/bootflash/docker./*/containers/./hosts gen_context(system_u:object_r:container_share_t,s0)
/bootflash/docker./*/init(/.*)?    gen_context(system_u:object_r:container_share_t,s0)
/bootflash/docker./*/overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/bootflash/docker./*/overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)

/bootflash/iox_alt_hdd_mount_dir/docker(/.*)?
gen_context(system_u:object_r:container_var_lib_t,s0)
/bootflash/iox_alt_hdd_mount_dir/docker./*/config\env
gen_context(system_u:object_r:container_share_t,s0)
/bootflash/iox_alt_hdd_mount_dir/docker./*/containers/./.*\log
gen_context(system_u:object_r:container_log_t,s0)
/bootflash/iox_alt_hdd_mount_dir/docker./*/containers/./hostname
gen_context(system_u:object_r:container_share_t,s0)
/bootflash/iox_alt_hdd_mount_dir/docker./*/containers/./hosts
gen_context(system_u:object_r:container_share_t,s0)
/bootflash/iox_alt_hdd_mount_dir/docker./*/init(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
/bootflash/iox_alt_hdd_mount_dir/docker./*/overlay(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
/bootflash/iox_alt_hdd_mount_dir/docker./*/overlay2(/.*)?
gen_context(system_u:object_r:container_share_t,s0)

/mnt/sd3/docker(/.*)?          gen_context(system_u:object_r:container_var_lib_t,s0)
/mnt/sd3/docker./*/config\env   gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/docker./*/containers/./.*\log gen_context(system_u:object_r:container_log_t,s0)
/mnt/sd3/docker./*/containers/./hostname gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/docker./*/containers/./hosts gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/docker./*/init(/.*)?    gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/docker./*/overlay(/.*)?  gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/docker./*/overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)

ifdef(`nyquist_platform',`
/mnt/sd3/iox_alt_hdd_mount_dir/docker(/.*)?
gen_context(system_u:object_r:container_var_lib_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker./*/config\env
gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker./*/containers/./.*\log
gen_context(system_u:object_r:container_log_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker./*/containers/./hostname
gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker./*/containers/./hosts

```

```

gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker/.*/init(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker/.*/overlay(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker/.*/overlay2(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
')

#ifdef(`passport_platform',`
/flash1/iox_alt_hdd_mount_dir/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/flash1/iox_alt_hdd_mount_dir/docker/.*/config\.env
gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox_alt_hdd_mount_dir/docker/.*/containers/.*/.*\.log
gen_context(system_u:object_r:container_log_t,s0)
/flash1/iox_alt_hdd_mount_dir/docker/.*/containers/.*/hostname
gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox_alt_hdd_mount_dir/docker/.*/containers/.*/hosts
gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox_alt_hdd_mount_dir/docker/.*/init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox_alt_hdd_mount_dir/docker/.*/overlay(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox_alt_hdd_mount_dir/docker/.*/overlay2(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
')

/flash1/iox/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/flash1/iox/docker/.*/config\.env gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox/docker/.*/containers/.*/.*\.log gen_context(system_u:object_r:container_log_t,s0)
/flash1/iox/docker/.*/containers/.*/hostname gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox/docker/.*/containers/.*/hosts gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox/docker/.*/init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox/docker/.*/overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox/docker/.*/overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)

/flash11/iox/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/flash11/iox/docker/.*/config\.env gen_context(system_u:object_r:container_share_t,s0)
/flash11/iox/docker/.*/containers/.*/.*\.log gen_context(system_u:object_r:container_log_t,s0)
/flash11/iox/docker/.*/containers/.*/hostname gen_context(system_u:object_r:container_share_t,s0)
/flash11/iox/docker/.*/containers/.*/hosts gen_context(system_u:object_r:container_share_t,s0)
/flash11/iox/docker/.*/init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/flash11/iox/docker/.*/overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/flash11/iox/docker/.*/overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)

/vol/harddisk/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/vol/harddisk/docker/.*/config\.env gen_context(system_u:object_r:container_share_t,s0)
/vol/harddisk/docker/.*/containers/.*/.*\.log gen_context(system_u:object_r:container_log_t,s0)
/vol/harddisk/docker/.*/containers/.*/hostname gen_context(system_u:object_r:container_share_t,s0)

```

```

/vol/harddisk/docker/./containers/./hosts gen_context(system_u:object_r:container_share_t,s0)
/vol/harddisk/docker/./init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/harddisk/docker/./overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/harddisk/docker/./overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)

/vol/disk0/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/vol/disk0/docker/./config\env gen_context(system_u:object_r:container_share_t,s0)
/vol/disk0/docker/./containers/./.*\log gen_context(system_u:object_r:container_log_t,s0)
/vol/disk0/docker/./containers/./hostname gen_context(system_u:object_r:container_share_t,s0)
/vol/disk0/docker/./containers/./hosts gen_context(system_u:object_r:container_share_t,s0)
/vol/disk0/docker/./init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/disk0/docker/./overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/disk0/docker/./overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)

/vol/usb1/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/vol/usb1/docker/./config\env gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/docker/./containers/./.*\log gen_context(system_u:object_r:container_log_t,s0)
/vol/usb1/docker/./containers/./hostname gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/docker/./containers/./hosts gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/docker/./init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/docker/./overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/docker/./overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)

#Sumatra
/vol/usb1/iox/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/vol/usb1/iox/docker/./config\env gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/iox/docker/./containers/./.*\log gen_context(system_u:object_r:container_log_t,s0)
/vol/usb1/iox/docker/./containers/./hostname gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/iox/docker/./containers/./hosts gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/iox/docker/./init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/iox/docker/./overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/iox/docker/./overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscontainer.fc
```

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```

#
# March 2017, Victor Kamensky
#
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#

```

```
policy_module(polarisortfiles, 1.0);
```

```

gen_require(
    type polaris_sort_files_t;

```

```

')

corecmd_exec_bin(polaris_sort_files_t)

# allow to read /proc/meminfo
kernel_read_system_state(polaris_sort_files_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_sort_files_t)

polaris_btrace_data_manage(polaris_sort_files_t)
polaris_chasfs_manage(polaris_sort_files_t)
polaris_rmonbifo_tmp_read(polaris_sort_files_t)
polaris_read_debug_conf(polaris_sort_files_t)
polaris_persistent_getattr(polaris_sort_files_t)
polaris_persistent_list_dirs(polaris_sort_files_t)
polaris_cpld_read(polaris_sort_files_t)
polaris_capsule_upgrade_log_use(polaris_sort_files_t)
optional_policy(`
polaris_gnmib_gnoi_images_read(polaris_sort_files_t)
`)

# Dontaudit /bootflash/#lost+found avc denials
dontaudit polaris_sort_files_t polaris_disk:chr_file { getattr };
dontaudit polaris_sort_files_t polaris_disk:blk_file { getattr };

#allow polaris_sort_files_t polaris_udev_tmp_files_t:dir { getattr search };
polaris_udev_tmp_list_dirs(polaris_sort_files_t)

optional_policy(`
polaris_iox_dir_list(polaris_sort_files_t)
`)

polaris_sandbox_file_dir_list(polaris_sort_files_t)

polaris_disk_bootflash_read_lnk(polaris_sort_files_t)

polaris_disk_bootflash_fifo_file_getattr(polaris_sort_files_t)
polaris_disk_bootflash_sock_file_getattr(polaris_sort_files_t)

# allow search and read under /tmp/boot directory
polaris_boot_tmp_read(polaris_sort_files_t)

#allow manage the files under /tmp/sort
type polaris_sort_files_tmp_t;
files_tmp_file(polaris_sort_files_tmp_t)
files_tmp_filetrans(polaris_sort_files_t, polaris_sort_files_tmp_t, file)
manage_files_pattern(polaris_sort_files_t, polaris_sort_files_tmp_t, polaris_sort_files_tmp_t)

```

```

# for pluggable FS, allow sort to access files on them.
polaris_getattr_removable(polaris_sort_files_t)
polaris_removable_manage(polaris_sort_files_t)
fs_read_removable_symlinks(polaris_sort_files_t)

# to look at files sort_file sometime needs to violate DAC permissions
allow polaris_sort_files_t self:capability dac_read_search;

optional_policy(`
# LOOK AT ME memif sock_file interface present in /bootflash as
# /bootflash/SHARED-IOX/memif/memif-dp-svr, since class of the
# object is sock_file adding it to polaris_disk does not make much
# sense
gen_require(`
    type polaris_qfp_memif_t;
    `)
getattr_sock_files_pattern(polaris_sort_files_t, polaris_qfp_memif_t, polaris_qfp_memif_t)
`)

# find runs fstatfs
fs_getattr_xattr_fs(polaris_sort_files_t)

# allow polaris_sort_files_t fs_t:filesystem getattr
fs_getattr_all_fs(polaris_sort_files_t)

# with "/bootflash"...this needs attr to access for logfile
polaris_user_file_getattr(polaris_sort_files_t)

optional_policy(`
gen_require(`
    type polaris_efi_files_t;
    `)
#find /bootflash/ -printf %i %p
allow polaris_sort_files_t polaris_efi_files_t:dir { getattr open read search };

#stat -c %i %f %s %n /bootflash/EFI/UpdateCapsule/UpdateCapsuleFile.bin
allow polaris_sort_files_t polaris_efi_files_t:file getattr;
`)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissortfiles.te
No license file was found, but licenses were detected in source scan.

#
# June 2017, Victor Kamensky
#
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```

```

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#

policy_module(polarisioxman, 1.0);

gen_require(
    type polaris_ioxman_t;
)

polaris_btrace_data_manage(polaris_ioxman_t)
polaris_chasfs_manage(polaris_ioxman_t)
polaris_tdlresolve_read(polaris_ioxman_t)
polaris_tdlldb_list_dirs(polaris_ioxman_t)
polaris_cpld_read(polaris_ioxman_t)
polaris_lua_read(polaris_ioxman_t)
polaris_flashlib_read(polaris_ioxman_t)

polaris_ripc_sman_ui_serv_connect(polaris_ioxman_t)

polaris_db_tdlldb_dir_use(polaris_ioxman_t)

#allow access to /bootflash/iox/ files
polaris_iox_dir_search(polaris_ioxman_t)

corenet_tcp_connect_polaris_caf_api_port(polaris_ioxman_t)

# allow read permissions for /etc/hosts file
sysnet_read_config(polaris_ioxman_t)

# ioxman interacting with caf through api http interface and
# is uses curl library to send requests to caf. curl wants
# to do getsockopt with SOL_SOCKET,
allow polaris_ioxman_t self:tcp_socket getopt;

# allow to get getattr of /proc file system
domain_read_all_domains_state(polaris_ioxman_t)

corecmd_exec_bin(polaris_ioxman_t)
corecmd_exec_shell(polaris_ioxman_t)

# allow to run mount in its own domain; guestshell_set_netns.sh
# needs it; also, read and exec the set_netns script.
# ioxman_setup_guestshell_namespace invokes the script
# using NAMESPACE_COMMAND
mount_domtrans(polaris_ioxman_t)
polaris_guestshell_files_read(polaris_ioxman_t)
polaris_guestshell_exec_files_exec(polaris_ioxman_t)

```

```

# allow read of /etc/passwd
auth_use_nsswitch(polaris_ioxman_t)

# guestshell_set_netns.sh calls ps command
# ps needs access to /sys/devices/system/cpu/online
dev_read_sysfs(polaris_ioxman_t)
# ps needs access to proc_t
kernel_read_system_state(polaris_ioxman_t)

# modifies /bootflash/iox/iox_app/guestshell_iox.json
polaris_iox_files_manage(polaris_ioxman_t)

# guestshell_set_netns.sh touches /var/run/netns/guestshell
files_pid_filetrans(polaris_ioxman_t, polaris_guestshell_var_run_t, file, "guestshell")
polaris_guestshell_var_run_files_manage(polaris_ioxman_t)

# Read and write the all pty
term_use_generic_ptys(polaris_ioxman_t)

# allow ioxman_syslib.sh to set uid/gid for screen
allow polaris_ioxman_t self:capability { dac_override setgid setuid };

# ioxman execve virsh
gen_require(
    type virsh_t;
    type virsh_exec_t;
)
domtrans_pattern(polaris_ioxman_t, virsh_exec_t, virsh_t)
# virsh needs to write into /tmp/rp/trace/iox_guestshell.log
polaris_btrace_data_manage(virsh_t)

# ioxman is vman client over @vman_domain_socket socket
optional_policy(
    polaris_vman_use_client_socket(polaris_ioxman_t)
)

# ioxman uses VS_OPER_DB from virtual_services_tbl_init
polaris_tdlbpersist_setup(polaris_ioxman_t)

polaris_tmp_tdlb_persist_setup(polaris_ioxman_t)

# ioxman through libcurl library hit c-ares DNS code needs
# udp sockets access
allow polaris_ioxman_t self:udp_socket connect;

logging_send_syslog_msg(polaris_ioxman_t)

# read /opt/cisco/caf/config/system-config.ini

```

```

polaris_caf_files_read(polaris_ioxman_t)

virt_manage_sandbox_files(polaris_ioxman_t)

# handle ioxman /tmp files like /tmp/iox_xml.dat
type polaris_iox_tmp_t;
files_tmp_file(polaris_iox_tmp_t)
polaris_iox_manage_tmp_files(polaris_ioxman_t)

# by some strange reason ioxman munges files in /bootflash/tracelogs
# please see iox_tracefile_restore in ioxman/src/im_serial.c
polaris_btrace_persistent_data_manage(polaris_ioxman_t)

# virsh execved from ioxman inherits stdout from ioxman
gen_require(
    type polaris_ioxman_bt_t;
    type virsh_t;
)
allow virsh_t polaris_ioxman_bt_t:file write;

optional_policy(
gen_require(
    attribute polaris_domain;
    attribute polaris_extended_domain;
    type container_runtime_t;
)
typeattribute container_runtime_t polaris_domain;
typeattribute container_runtime_t polaris_extended_domain;
)

# /usr/binos/conf/shell_exec.sh policy

polaris_utility_domain_template(iox_shell)

polaris_bexecute_domain(polaris_iox_shell_t, polaris_iox_shell_exec_t)
# shell_exec call bexec.sh
polaris_bexecute_domtrans(polaris_iox_shell_t)
corecmd_exec_bin(polaris_iox_shell_t)
polaris_chasfs_read(polaris_iox_shell_t)
auth_use_nsswitch(polaris_iox_shell_t)
fs_getattr_tmpfs(polaris_iox_shell_t)

mount_domtrans(polaris_iox_shell_t)

# inherit stdin from telnetd
telnet_use_ptys(polaris_iox_shell_t)

# create files under /bootflash/iox

```

```

polaris_iox_files_manage(polaris_iox_shell_t)

# executing guestshell.sh
polaris_guestshell_exec_files_exec(polaris_iox_shell_t)
polaris_guestshell_files_read(polaris_iox_shell_t)

# executing "ip netns exec guestshell /usr/bin/ssh ..."
sysnet_exec_ifconfig(polaris_iox_shell_t)
fs_read_nsfs_files(polaris_iox_shell_t)
files_mouton_rootfs(polaris_iox_shell_t)
dev_mouton_sysfs(polaris_iox_shell_t)
allow polaris_iox_shell_t self:netlink_route_socket rw_netlink_socket_perms;
dev_mount_sysfs_fs(polaris_iox_shell_t)
dev_unmount_sysfs_fs(polaris_iox_shell_t)

# executing ssh
corenet_tcp_connect_ssh_port(polaris_iox_shell_t)
ssh_exec(polaris_iox_shell_t)
allow polaris_iox_shell_t self:tcp_socket { connect create getattr getopt setopt shutdown };

# ssh creates /root/.ssh directory
userdom_create_user_home_dirs(polaris_iox_shell_t)

# read /etc/guestshell_rsa_key
polaris_guestshell_key_read(polaris_iox_shell_t)

# work with sandbox files
polaris_sandbox_file_dir_list(polaris_iox_shell_t)

polaris_caf_var_run_files_manage(polaris_iox_shell_t)

# shell_exec.sh invokes:
# mkdir /tmp/.shell_exec
# create /tmp/.shell_exec/*
type polaris_iox2iosd_tmp_t;
files_tmp_file(polaris_iox2iosd_tmp_t)
files_tmp_filetrans(polaris_iox_shell_t, polaris_iox2iosd_tmp_t, dir, ".shell_exec")
files_tmp_filetrans(polaris_iox_shell_t, polaris_iox2iosd_tmp_t, file)
#allow shell_exec to manage /tmp/.ncsshd_authorized_keys
polaris_ncsshd_keys_manage(polaris_iox_shell_t)
# allow shell_exec to manage /tmp/.shell_exec/* files
polaris_iox2iosd_tmp_manage(polaris_iox_shell_t)
# allow shell_exec to work with files created by iosd
polaris_iosd2iox_tmp_manage(polaris_iox_shell_t)
#ifdef(^nyquist_platform',`
# Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_iox_shell_t)
)`
)

```

```

ifdef(`passport_platform',`
# Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_iox_shell_t)
')

allow polaris_iox_shell_t self:capability { chown dac_override fowner fsetid setgid setuid dac_read_search };
allow polaris_iox_shell_t self:cap_userns sys_admin;
allow polaris_iox_shell_t self:process setfscreate;

# LOOK AT ME very fishy iox_shell executes
# /bootflash/iox/repo-lxc/guestshell/rootfs_mnt/cisco/shell_exec.sh that
# actually can be modified from container itself. File is recreated
# each guestshell activation and it seems not executed afterwards.
# Grant access for now. Need to look closely whether it could be exploited
# in some way
virt_exec_sandbox_files(polaris_iox_shell_t)

# ip command called from iox_shell, running it under
# iox_shell domain, add required mounton on unlabeled_t
files_mounton_isid(polaris_iox_shell_t)

# read guestshell net namespace file
fs_read_nsfs_files(polaris_ioxman_t)

# need to create /bootflash/gscript/db.ini file
polaris_bootflash_manage(polaris_ioxman_t)
polaris_harddisk_manage(polaris_ioxman_t)

# run_ioxn_secure_dir.sh policy
gen_require(`
    type polaris_iox_secure_dir_t;
')
corecmd_exec_bin(polaris_iox_secure_dir_t)
auth_use_nsswitch(polaris_iox_secure_dir_t)
polaris_caf_files_read(polaris_iox_secure_dir_t)
polaris_chasfs_manage(polaris_iox_secure_dir_t)
polaris_bootflash_manage(polaris_iox_secure_dir_t)
polaris_harddisk_manage(polaris_iox_secure_dir_t)
polaris_iox_files_manage(polaris_iox_secure_dir_t)

# /bin/cat9k_ssd_auth_cmds.sh

polaris_utility_domain_template(ssd_auth)

corecmd_exec_bin(polaris_ssd_auth_t)
storage_getattr_fixed_disk_dev(polaris_ssd_auth_t)

#allow to read /etc/passwd

```

```

auth_use_nsswitch(polaris_ssd_auth_t)

fs_getattr_tmpfs(polaris_ssd_auth_t)

# execute hdparam in its own domain
fstools_domtrans(polaris_ssd_auth_t)

polaris_use_btrace_fifo(polaris_ssd_auth_t)

type polaris_ssd_auth_tmp_t;
files_tmp_file(polaris_ssd_auth_tmp_t)
# bash tmp files like /tmp/sh-thd.kxX3sc
files_tmp_filetrans(polaris_ssd_auth_t, polaris_ssd_auth_tmp_t, file)
manage_files_pattern(polaris_ssd_auth_t, polaris_ssd_auth_tmp_t, polaris_ssd_auth_tmp_t)
# /tmp/ssd_blk_device created by udev
gen_require(
    type udev_t;
    type tmpfs_t;
    type tmp_t;
)
filetrans_pattern(udev_t, {tmpfs_t tmp_t}, polaris_ssd_auth_tmp_t, file, "ssd_blk_device")
polaris_getattr_harddisk(polaris_ssd_auth_t)

fs_read_cgroup_files(polaris_ioxman_t)

# Allow ioxman to download package files using url
polaris_caf_tmp_files_manage(polaris_ioxman_t)
polaris_cli_fs_cmds_domtrans(polaris_ioxman_t)
# ufs information captured by the chasfs utils
optional_policy(
polaris_ncd_tmp_read(polaris_ioxman_t)
)
gen_require(
    type polaris_fts_client_tmp_t;
)

manage_files_pattern(polaris_ioxman_t, polaris_fts_client_tmp_t, polaris_fts_client_tmp_t)
manage_dirs_pattern(polaris_ioxman_t, polaris_fts_client_tmp_t, polaris_fts_client_tmp_t)
allow polaris_ioxman_t tmp_t:file { create open unlink write };

# get_orchestration_template in cgroup_init_common.sh reads
# ovf-env.xml file from removable and varied
fs_read_removable_files(polaris_ioxman_t)
polaris_disk_varied_read(polaris_ioxman_t)

# writes into /tmp/trace/resource.log
optional_policy(
polaris_vman_tmp_manage(polaris_ioxman_t)
)

```

```

)

# watch over /tmp/udev/etc/udev/usbflash1 in iox_media_chasfs_watch
polaris_udev_tmp_read(polaris_ioxman_t)
polaris_udev_tmp_watch(polaris_ioxman_t)

ifdef(`nyquist_platform',`
# Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_ioxman_t)
')

dev_getattr_fs(polaris_iox_shell_t)
kernel_read_system_state(polaris_iox_shell_t)

gen_require(`
    type virt_lxc_var_run_t;
')
read_files_pattern(polaris_ioxman_t, virt_lxc_var_run_t, virt_lxc_var_run_t)

#sys_resource denial is seen even on factory reset
allow polaris_ioxman_t self:capability sys_resource;

ifdef(`passport_platform',`
# Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_ioxman_t)
')

polaris_iosd_vcpu_read(polaris_ioxman_t)

# work with files like /tmp/guestinfo_status.txt
polaris_iosd2iox_tmp_manage(polaris_ioxman_t)

gen_require(`
    type screen_var_run_t;
    type screen_exec_t;
')

# allow ioxman to set up ttys for screen
polaris_caf_tty_lnk_manage(polaris_ioxman_t)

# allow ioxman_syslib.sh to invoke screen
screen_exec(polaris_ioxman_t)

# add entrypoint to screen_exec/can_exec permissions
allow polaris_ioxman_t screen_exec_t:file entrypoint;

# make sure /tmp/screens is labeled correctly
files_tmp_filetrans(polaris_ioxman_t, screen_var_run_t, dir, "screens")

```

```

# allow ioxman to manage /tmp/screens/<appname>_con/aux.sid
manage_files_pattern(polaris_ioxman_t, screen_var_run_t, screen_var_run_t)

# allow ioxman to manage sock_files and unix_stream_socket on screen
allow polaris_ioxman_t self:unix_stream_socket { create_socket_perms connectto };
manage_dirs_pattern(polaris_ioxman_t, screen_var_run_t, screen_var_run_t)
manage_sock_files_pattern(polaris_ioxman_t, screen_var_run_t, screen_var_run_t)

# allow ioxman to transition into bexec domain
polaris_bexecute_domtrans(polaris_ioxman_t)
polaris_bexecute_domain(polaris_ioxman_t, screen_exec_t)
# allow bexecute to access the /tmp/screens/*.sid files
gen_require(^
    type polaris_bexecute_t;
)
manage_files_pattern(polaris_bexecute_t, screen_var_run_t, screen_var_run_t)

# allow shell_exec to manage /tmp/.ncsshd_authorized_keys
polaris_ncsshd_keys_manage(polaris_iox_shell_t)
polaris_iox2iosd_tmp_manage(polaris_iox_shell_t)

# allow shell_exec to manage guestshell files
gen_require(^
    type container_file_t;
)
manage_files_pattern(polaris_iox_shell_t, container_file_t, container_file_t)

# allow ioxman to setattr for /dev/pts relating to screen
gen_require(^
    type telnetd_devpts_t;
)
allow polaris_ioxman_t telnetd_devpts_t:chr_file setattr_chr_file_perms;

# allow ioxman to access the /tmp/ttyF*. files
gen_require(^
    type fifo_var_run_t;
)
files_tmp_filetrans(polaris_ioxman_t, fifo_var_run_t, fifo_file)
manage_fifo_files_pattern(polaris_ioxman_t, fifo_var_run_t, fifo_var_run_t)

# allow ioxman to access rootfs and sysfs
# The same is needed when guestshell uses a passwordless SSH, when users do
# like "guestshell run bash" from IOS and it provides a bash shell screen
# in IOS.

gen_require(^
    type ssh_home_t;

```

')

```
ssh_filetrans_admin_home_content(polaris_iox_shell_t)
allow polaris_iox_shell_t ssh_home_t:dir {create search getattr};
dev_getattr_sysfs_fs(polaris_iox_shell_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisioxman.te

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```
#
# March 2017, Victor Kamensky
#
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#
```

```
policy_module(polarismqipc, 1.0);
```

```
attribute polaris_mqipc;
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismqipc.te

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```
#
# March 2017, Victor Kamensky
#
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#
```

```
/var/run/cli_agent\,pid -- gen_context(system_u:object_r:polaris_cli_agent_var_run_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscliagent.fc

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```
#
# March 2017, Victor Kamensky
#
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#
```

```
policy_module(polarisvxe, 1.0);
```

```
# hanet driver used by vpcgw platform of VXE family
```

```

ifdef(`vpcgw_platform',`
type polaris_hanet_device_t;
dev_node(polaris_hanet_device_t)
')

# on ultra in some cloud configuration runs dhclient utility
# receive meta information from cloud provider, /var/lib/dhcp
# directory is created by initrc_t
gen_require(`
    type dhcp_t;
    type initrc_t;
    type dhcp_state_t;
')
files_var_lib_filetrans({ dhcp_t initrc_t }, dhcp_state_t, dir, "dhcp")

# during boot on misc cloud environment ultra image creates directory
# in /tmp to keep information received from cloud provider. Since latter
# it is copied into /varied directory let's assigned polaris_disk_varied_t
# to them
gen_require(`
    type initrc_t;
    type polaris_disk_varied_t;
    type unconfined_service_t;
')
files_tmp_filetrans({ unconfined_service_t initrc_t }, polaris_disk_varied_t, dir, "ami")
files_tmp_filetrans({ unconfined_service_t initrc_t }, polaris_disk_varied_t, dir, "azure")
files_tmp_filetrans({ unconfined_service_t initrc_t }, polaris_disk_varied_t, dir, "gcp")

# park policy for small polaris process umbrella_init.sh here
gen_require(`
    type polaris_umbrella_init_t;
')
polaris_bootflash_manage(polaris_umbrella_init_t)
corecmd_exec_bin(polaris_umbrella_init_t)
auth_use_nsswitch(polaris_umbrella_init_t)

# define added to address issues related to dependency
# on mcp-platform-tdl for db defines
# Skip for vpcgw platform
ifndef(`vpcgw_platform',`
type polaris_gnmib_t;
')

type polaris_objstore_sem_t;
files_tmpfs_file(polaris_objstore_sem_t)

# semaphore created by systemd-tmpfiles needs map permission
gen_require(`

```

```

        type systemd_tmpfiles_t;
    )
mmap_files_pattern(systemd_tmpfiles_t, polaris_objstore_sem_t, polaris_objstore_sem_t)

# on vxe all processes read grub_cisco_version in polaris_disk_varied_t
gen_require(
    attribute polaris_domain;
)
polaris_disk_varied_search(polaris_domain)

type polaris_grub_bios_t;
polaris_pfile_type(polaris_grub_bios_t)

type polaris_grubver_t;
polaris_pfile_type(polaris_grubver_t)

type polaris_vxeinstall_info_t;
polaris_pfile_type(polaris_vxeinstall_info_t)
gen_require(
    type unconfined_service_t;
    type polaris_disk_varied_t;
)
# unconfined service create /boot/.install_info if does not exist yet
filetrans_pattern(unconfined_service_t, polaris_disk_varied_t, polaris_vxeinstall_info_t, file, ".install_info")

# on C8KV all processes read grubenv in EFI disk partition
gen_require(
    attribute polaris_domain;
)
polaris_grub_efi_search(polaris_domain)

gen_require(
    type unconfined_service_t;
    type polaris_disk_varied_t;
    type polaris_obfl_data_t;
)
# unconfined service create /boot/obfl_temp_k1/2/3 if does not exist yet
filetrans_pattern(unconfined_service_t, polaris_disk_varied_t, polaris_obfl_data_t, file, "obfl_temp_k1")
filetrans_pattern(unconfined_service_t, polaris_disk_varied_t, polaris_obfl_data_t, file, "obfl_temp_k2")
filetrans_pattern(unconfined_service_t, polaris_disk_varied_t, polaris_obfl_data_t, file, "obfl_temp_k3")

# handle /tmp/vxe_disk_XXX_YYY files
gen_require(
    type unconfined_service_t;
)
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v1")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v2")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v3")

```

```
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v4")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_gpt_v1")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_gpt_v2")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_gpt_v3")
polaris_boot_tmp_manage(unconfined_service_t)
```

```
# /etc/init.d/sshd that runs under initrc_t through ssh-keygen
# creates /config/.ssh directory if does not exist; /config
# directory is typically bootflash, but on MBRv2/MBRv4/GPTv1/GPTv3
# partition layouts it could be separate /config partition that is
# under polaris_disk_config_t label
gen_require(
    type initrc_t;
    type ssh_home_t;
)
polaris_disk_config_filetrans(initrc_t, ssh_home_t, dir, ".ssh")
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisvxe.te
```

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```
#
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#
```

```
policy_module(polarisissumonitor, 1.0);
```

```
#####
# install_issu_monitor
#####
```

```
polaris_process_domain_template(issu_monitor)
```

```
corecmd_exec_bin(polaris_issu_monitor_t)
```

```
# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_issu_monitor_t)
```

```
polaris_btrace_data_manage(polaris_issu_monitor_t)
polaris_chasfs_manage(polaris_issu_monitor_t)
polaris_cpld_read(polaris_issu_monitor_t)
polaris_proc_rmonbifo_read(polaris_issu_monitor_t)
polaris_boot_tmp_read(polaris_issu_monitor_t)
polaris_read_debug_conf(polaris_issu_monitor_t)
```

```

# read and possibly create /bootflash/.installer/issu_crash dir
polaris_bootflash_manage(polaris_issu_monitor_t)

allow polaris_issu_monitor_t self:capability sys_resource;
allow polaris_issu_monitor_t self:process setpgid;

type polaris_issu_monitor_tmp_t;
files_tmp_file(polaris_issu_monitor_tmp_t)
files_tmp_filetrans(polaris_issu_monitor_t, polaris_issu_monitor_tmp_t, dir, "issu_mon_dir")
manage_files_pattern(polaris_issu_monitor_t, polaris_issu_monitor_tmp_t, polaris_issu_monitor_tmp_t)
manage_dirs_pattern(polaris_issu_monitor_t, polaris_issu_monitor_tmp_t, polaris_issu_monitor_tmp_t)
manage_fifo_files_pattern(polaris_issu_monitor_t, polaris_issu_monitor_tmp_t, polaris_issu_monitor_tmp_t)

#access to /tmp/ufs/harddisk
optional_policy(`
polaris_ncd_tmp_read(polaris_issu_monitor_t)
`)

# access to /bootflash/.installer/issu_crash
polaris_disk_install_read(polaris_issu_monitor_t)

# access to /tmp/sw/boot/rmonbifo/env_var.sh
polaris_rmonbifo_tmp_read(polaris_issu_monitor_t)

# read /proc/cmdline
kernel_read_system_state(polaris_issu_monitor_t)

# rm -rf /tmp/rp/issu_mon_dir
fs_getattr_tmpfs(polaris_issu_monitor_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisissumonitor.te
No license file was found, but licenses were detected in source scan.

#
# February 2018, Manohar Hungund
#
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#

policy_module(polarisact2, 1.0);

#####
# ACT2 Chip Driver policy
#####

type polaris_act2_device_t;

```

```
dev_node(polaris_act2_device_t)
```

```
#####  
# /tmp/hw_entropy file.  
# Certain platforms save entropy from main board ACT-2 chip in this file.
```

```
type polaris_hw_entropy_t;  
files_tmp_file(polaris_hw_entropy_t)  
#####
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisact2.te  
No license file was found, but licenses were detected in source scan.
```

```
#  
# March 2017, Victor Kamensky  
#  
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# All rights reserved  
#
```

```
policy_module(polariscppha, 1.0);
```

```
gen_require(  
    type polaris_cpp_ha_t;  
)
```

```
polaris_btrace_data_manage(polaris_cpp_ha_t)  
polaris_crft_data_manage(polaris_cpp_ha_t)  
polaris_chasfs_manage(polaris_cpp_ha_t)  
polaris_tdlresolve_read(polaris_cpp_ha_t)  
polaris_tdlldb_list_dirs(polaris_cpp_ha_t)  
polaris_cpld_read(polaris_cpp_ha_t)  
polaris_flashlib_read(polaris_cpp_ha_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_cpp_ha_t)
```

```
polaris_db_tdlldb_dir_use(polaris_cpp_ha_t)
```

```
polaris_cpp_process(polaris_cpp_ha_t)  
polaris_cpp_dev_use(polaris_cpp_ha_t)
```

```
polaris_icc_broken_relocations(polaris_cpp_ha_t)
```

```
polaris_cpp_cavium_sdk_ipc_use(polaris_cpp_ha_t)
```

```
# allow objstore access  
polaris_disk_objstore_read(polaris_cpp_ha_t)
```

```
# LOOK AT ME: raw memory access in cavium vendor SDK
# related to octeon driver (BUG CSCvh58515)
#ifdef(`crankshaft_family',`
polaris_dev_mem_use(polaris_cpp_ha_t)
')
```

```
# allow syslogging
logging_send_syslog_msg(polaris_cpp_ha_t)
```

```
optional_policy(`
polaris_cbdma_dev_use(polaris_cpp_ha_t)
')
polaris_cpld_dev_use(polaris_cpp_ha_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppha.te

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```
#
# March 2017, Victor Kamensky
#
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# All rights reserved
#
```

```
policy_module(polariscppsp, 1.0);
```

```
gen_require(`
    type polaris_cpp_sp_t;
')
```

```
polaris_btrace_data_manage(polaris_cpp_sp_t)
polaris_crft_data_manage(polaris_cpp_sp_t)
polaris_chasfs_manage(polaris_cpp_sp_t)
polaris_tdlresolve_read(polaris_cpp_sp_t)
polaris_tdlldb_list_dirs(polaris_cpp_sp_t)
polaris_cpld_read(polaris_cpp_sp_t)
polaris_flashlib_read(polaris_cpp_sp_t)
```

```
polaris_rpc_sman_ui_serv_connect(polaris_cpp_sp_t)
```

```
polaris_db_tdlldb_dir_use(polaris_cpp_sp_t)
```

```
polaris_cpp_process(polaris_cpp_sp_t)
polaris_cpp_dev_use(polaris_cpp_sp_t)
```

```
polaris_icc_broken_relocations(polaris_cpp_sp_t)
```

```
polaris_cpp_cavium_sdk_ipc_use(polaris_cpp_sp_t)
```

```
# LOOK AT ME: raw memory access in cavium vendor SDK
```

```
# related to octeon driver (BUG CSCvh58515)
```

```
ifdef(`crankshaft_family',`
```

```
polaris_dev_mem_use(polaris_cpp_sp_t)
```

```
')
```

```
# allow syslogging
```

```
logging_send_syslog_msg(polaris_cpp_sp_t)
```

```
optional_policy(`
```

```
polaris_cbdma_dev_use(polaris_cpp_sp_t)
```

```
')
```

```
polaris_cpld_dev_use(polaris_cpp_sp_t)
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscppsp.te
```

```
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```

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2016-2019 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
/usr/binos/conf/reflector.sh -- gen_context(system_u:object_r:polaris_reflector_exec_t,s0)
```

```
/tmp/rp/reflector(/.*)? gen_context(system_u:object_r:polaris_reflector_tmp_t,s0)
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisreflector.fc
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2017-2020 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
policy_module(polarissifmgr, 1.0);
```

```
gen_require(`
```

```
type polaris_sif_mgr_t;
```

```
')
```

```

polaris_btrace_data_manage(polaris_sif_mgr_t)
polaris_crft_data_manage(polaris_sif_mgr_t)
polaris_chasfs_manage(polaris_sif_mgr_t)
polaris_tdlresolve_read(polaris_sif_mgr_t)
polaris_tdlldb_list_dirs(polaris_sif_mgr_t)
polaris_cpld_read(polaris_sif_mgr_t)
polaris_lua_read(polaris_sif_mgr_t)
polaris_flashlib_read(polaris_sif_mgr_t)

#If romvar is not set, Set Rommon env variable needs write permission
polaris_flashlib_write(polaris_sif_mgr_t)

polaris_ripc_sman_ui_serv_connect(polaris_sif_mgr_t)

corecmd_exec_bin(polaris_sif_mgr_t)
corecmd_exec_shell(polaris_sif_mgr_t)

# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_sif_mgr_t)

# allow to read /proc/mtd
kernel_read_system_state(polaris_sif_mgr_t)

#allow write /proc/dplr_sesa
optional_policy(
    polaris_proc_sesa_create_write(polaris_sif_mgr_t)
)

# access SERDES /tmp/serdes_asic_key_dir/*
polaris_serdes_asic_key_tmp_manage(polaris_sif_mgr_t)

# allow read/write to /proc/irq/N/irq files
kernel_rw_irq_sysctls(polaris_sif_mgr_t)

# work with /tmp files (/tmp/sm_post_result)
type polaris_sif_mgr_tmp_t;
files_tmp_file(polaris_sif_mgr_tmp_t)
files_tmp_filetrans(polaris_sif_mgr_t, polaris_sif_mgr_tmp_t, file, "sm_post_result")
files_tmp_filetrans(polaris_sif_mgr_t, polaris_sif_mgr_tmp_t, file, "fips_status")
files_tmp_filetrans(polaris_sif_mgr_t, polaris_sif_mgr_tmp_t, file, "sif_regdump_0")
files_tmp_filetrans(polaris_sif_mgr_t, polaris_sif_mgr_tmp_t, file, "sif_regdump_1")
manage_files_pattern(polaris_sif_mgr_t, tmp_t, polaris_sif_mgr_tmp_t)
polaris_cm_rp_tmp_manage(polaris_sif_mgr_t)

#allow ipc_lock when mmap64(..) a shared mememoy with MAP_LOCKED in dplr_pkt_drv_oob.c
allow polaris_sif_mgr_t self:capability { ipc_owner dac_override ipc_lock };

```

```
#allow read from /tmp/hw_entropy
polaris_hw_entropy_read(polaris_sif_mgr_t)

polaris_obfl_data_manage(polaris_sif_mgr_t)

# /dev/dplr_intrpt usage
polaris_dplr_dev_use(polaris_sif_mgr_t)

# /dev/dmammap usage
polaris_dmammap_dev_use(polaris_sif_mgr_t)

# /dev/remap_mem0 usage
polaris_remap_mem_dev_use(polaris_sif_mgr_t)

polaris_lsmpi_dev_use(polaris_sif_mgr_t)

# open /dev/ttyS0 console in sco_sys_init_sw_params
term_use_unallocated_ttys(polaris_sif_mgr_t)

polaris_socketat_nsfs_read(polaris_sif_mgr_t)

allow polaris_sif_mgr_t self:process setsched;

# work with /dev/msi/Slot0/Doppler0/GroupN files
dev_rw_generic_chr_files(polaris_sif_mgr_t)
# /dev/msi/Slot0/Doppler0/GroupN gets polaris_dplr_device_t label
# at some point, but need above generic chr permission by some
# reason, not clear need to look a bit more
polaris_dplr_dev_use(polaris_sif_mgr_t)

# set out of band interface mac set_oobndif_mac
allow polaris_sif_mgr_t self:tcp_socket ioctl;

# LOOK AT ME: raw memory write access
polaris_dev_mem_use(polaris_sif_mgr_t)

# /dev/shm/sdm access
optional_policy(`
polaris_sdm_shm_manage(polaris_sif_mgr_t)
`)

# LOOK AT ME: unsolicited creation of file in /bootflash
# by CSCvm43512. Backout when CSCvm99282 is fixed
polaris_bootflash_manage(polaris_sif_mgr_t)
polaris_disk_bootflash_read_lnk(polaris_sif_mgr_t)

optional_policy(`
```

```
polaris_quake_i2c_manage(polaris_sif_mgr_t)
')

# __get_nprocs opens /sys/devices/system/cpu/online
ifdef(`quake_platform',`
dev_read_sysfs(polaris_sif_mgr_t)
')
```

```
optional_policy(`
polaris_ngwc_scc_shm_manage(polaris_sif_mgr_t)
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissifmgr.te
```

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```
#
# August 2017, Shawn Lu
#
# Copyright (c) 2017-2020 by Cisco Systems, Inc.
# All rights reserved
#
```

```
# polariswncmgrp file contexts place holder
```

```
#gRPC certificate for ICap, written and read by wncmgrp
/bootflash/NACert.pem      gen_context(system_u:object_r:polaris_icap_cert_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswncmgrp.fc
```

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```
dnl
dnl July 2020, Victor Kamensky
dnl
dnl Copyright (c) 2020 by Cisco Systems, Inc.
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dnl
dnl ISRV Platform Max Bay Limits
max_bay_map_set(`rp', `per_bay', 0)
max_bay_map_set(`cc', `per_bay', 3)
max_bay_map_set(`fp', `per_bay', 0)

max_bay_ripc_map_set(`rp', `per_bay', 0)
max_bay_ripc_map_set(`cc', `per_bay', 3)
max_bay_ripc_map_set(`fp', `per_bay', 0)

max_bay_ripc_map_set(`rp', `global', 0)
```

```
max_bay_ripc_map_set(`cc', `global', 3)
max_bay_ripc_map_set(`fp', `global', 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/isrvmaps.m4
```

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```
#
# July 2017, Victor Kamensky
#
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#
```

```
policy_module(polarismcp, 1.0);
```

```
# scooby device
type polaris_scooby_device_t;
dev_node(polaris_scooby_device_t)
```

```
# spa devices i.e sys_platform_module_1ng
type polaris_spa_device_t;
dev_node(polaris_spa_device_t)
```

```
# htdp device
type polaris_htdp_device_t;
dev_node(polaris_htdp_device_t)
```

```
# epaN and epactrlN devices
type polaris_epa_device_t;
dev_node(polaris_epa_device_t)
```

```
# luna_fpgs device
type polaris_luna_mbfpga_device_t;
dev_node(polaris_luna_mbfpga_device_t)
```

```
# dash fpga device (/dev/dash_fpga)
type polaris_dash_device_t;
dev_node(polaris_dash_device_t)
```

```
# astro device
type polaris_astro_device_t;
dev_node(polaris_astro_device_t)
```

```
# cpp_il device
type polaris_cpp_il_device_t;
dev_node(polaris_cpp_il_device_t)
```

```

# blzi_fpga device
type polaris_blzi_device_t;
dev_node(polaris_blzi_device_t)

# oob_evfc device
type polaris_oob_evfc_device_t;
dev_node(polaris_oob_evfc_device_t)

# ds31408 device
type polaris_ds31408_device_t;
dev_node(polaris_ds31408_device_t)

# icp_ads_ctl device
# Note that fugazi gets this from polarisqfp module
ifndef(^fugazi_platform',`
type polaris_icp_device_t;
dev_node(polaris_icp_device_t)
')

type polaris_cpp_htdp_device_t;
dev_node(polaris_cpp_htdp_device_t)

type polaris_cbdma_device_t;
dev_node(polaris_cbdma_device_t)

type polaris_n2_device_t;
dev_node(polaris_n2_device_t)

type polaris_cy2213_device_t;
dev_node(polaris_cy2213_device_t)

type polaris_vega_device_t;
dev_node(polaris_vega_device_t)

# Fugazi makes use of fugazi_platform.tdl for IPCs and processes definition
# and it uses mcp_platform.tdl for databases definition. The below symbols
# are referred by mcp_platform.tdl but not fugazi_platform.tdl and hence these
# type definitions.
ifdef(^fugazi_platform',`
type polaris_fnf_agg_t;
')

optional_policy(`
# access to /dev/icp_XXX device on asr1k platforms
gen_require(`
    type polaris_cck_qat_t;
')
polaris_icp_dev_use(polaris_cck_qat_t)

```

```
dev_list_sysfs(polaris_cck_qat_t)
polaris_chasfs_read(polaris_cck_qat_t)
polaris_cpld_read(polaris_cck_qat_t)
polaris_tdlresolve_read(polaris_cck_qat_t)
')
```

```
# Handling denial for rsync_t for socket -
# comm="rsync" path="socket:[16784]" dev="sockfs" ino=16784
# scontext=system_u:system_r:rsync_t:s0 tcontext=system_u:system_r:init_t:s0
gen_require(
    type rsync_t;
)
init_rw_stream_sockets(rsync_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismcp.te
No license file was found, but licenses were detected in source scan.
```

```
#
# June 2017, Victor Kamensky
#
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#
```

```
# polarisioxman file contexts place holder
```

```
/usr/binos/conf/shell_exec.sh -- gen_context(system_u:object_r:polaris_iox_shell_exec_t,s0)
```

```
/usr/binos/conf/run_ioxn_secure_dir.sh -- gen_context(system_u:object_r:polaris_iox_secure_dir_exec_t,s0)
```

```
/bin/cat9k_ssd_auth_cmds.sh -- gen_context(system_u:object_r:polaris_ssd_auth_exec_t,s0)
```

```
/tmp/trace/resource.log -- gen_context(system_u:object_r:polaris_iox_tmp_t,s0)
```

```
/tmp/screens(/.*) -- gen_context(system_u:object_r:screen_var_run_t,s0)
```

```
/tmp/.shell_exec(/.*) -- gen_context(system_u:object_r:polaris_iox2iosd_tmp_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisioxman.fc
No license file was found, but licenses were detected in source scan.
```

```
#
# August 2017, Victor Kamensky
#
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# All rights reserved
#
```

```

policy_module(polarisbsm, 1.0);

gen_require(`
    type polaris_bsm_t;
`)

polaris_btrace_data_manage(polaris_bsm_t)
polaris_chasfs_manage(polaris_bsm_t)
polaris_tdlresolve_read(polaris_bsm_t)
polaris_tdlldb_list_dirs(polaris_bsm_t)
polaris_cpld_read(polaris_bsm_t)
polaris_flashlib_read(polaris_bsm_t)

polaris_ripc_sman_ui_serv_connect(polaris_bsm_t)

optional_policy(`
polaris_bde_dev_use(polaris_bsm_t)
`)

allow polaris_bsm_t self:capability sys_nice;
allow polaris_bsm_t self:process setsched;

# need access to /sys/devices/system/cpu/online
dev_read_sysfs(polaris_bsm_t)

# handling /var/tmp/bsm_bcm_shell
type polaris_bsm_bcm_shell_t;
files_type(polaris_bsm_bcm_shell_t)
gen_require(`
    type tmp_t;
`)
filetrans_pattern(polaris_bsm_t, tmp_t, polaris_bsm_bcm_shell_t, fifo_file, "bsm_bcm_shell")
manage_fifo_files_pattern(polaris_bsm_t, tmp_t, polaris_bsm_bcm_shell_t)

ifdef(`vxe_family',`
# bind to BSM_AGENT_CLIENT_PORT port from bsm_tlv_init
corenet_tcp_bind_polaris_bsm_agent_client_port(polaris_bsm_t)
`)

# LOOK AT ME: raw memory write access
polaris_dev_mem_use(polaris_bsm_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbsm.te
No license file was found, but licenses were detected in source scan.

#

```

```
# March 2017, Victor Kamensky
#
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# All rights reserved
#
```

```
/tmp/sm_post_result -- gen_context(system_u:object_r:polaris_sif_mgr_tmp_t,s0)
/tmp/fips_status -- gen_context(system_u:object_r:polaris_sif_mgr_tmp_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissifmgr.fc
```

No license file was found, but licenses were detected in source scan.

```
#
# June 2020, Cuiyan Ma
#
# Copyright (c) 2020 by Cisco Systems, Inc.
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#
```

```
## <summary>Polaris polarissucompcheck Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissucompcheck.if
```

No license file was found, but licenses were detected in source scan.

```
#
# March 2017, Victor Kamensky
#
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# All rights reserved
#
```

```
policy_module(polarisngwcpplmmgr, 1.0);
```

```
gen_require(
    type polaris_ngwc_plfm_mgr_t;
)
```

```
polaris_btrace_data_manage(polaris_ngwc_plfm_mgr_t)
polaris_crft_data_manage(polaris_ngwc_plfm_mgr_t)
polaris_chasfs_manage(polaris_ngwc_plfm_mgr_t)
polaris_tdlresolve_read(polaris_ngwc_plfm_mgr_t)
polaris_tdlldb_list_dirs(polaris_ngwc_plfm_mgr_t)
polaris_cpld_read(polaris_ngwc_plfm_mgr_t)
polaris_lua_read(polaris_ngwc_plfm_mgr_t)
polaris_flashlib_read(polaris_ngwc_plfm_mgr_t)
```

```

polaris_ripc_sman_ui_serv_connect(polaris_ngwc_plfm_mgr_t)

corecmd_exec_bin(polaris_ngwc_plfm_mgr_t)
corecmd_exec_shell(polaris_ngwc_plfm_mgr_t)

# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_ngwc_plfm_mgr_t)

# allow to read /proc/meminfo
kernel_read_system_state(polaris_ngwc_plfm_mgr_t)

allow polaris_ngwc_plfm_mgr_t self:capability { sys_rawio ipc_owner dac_override };
allow polaris_ngwc_plfm_mgr_t self:capability2 block_suspend;

polaris_obfl_data_manage(polaris_ngwc_plfm_mgr_t)

polaris_dyncfg_tmp_read(polaris_ngwc_plfm_mgr_t)

polaris_ngwc_shm_manage(polaris_ngwc_plfm_mgr_t)

# /dev/dmabmap usage
polaris_dmabmap_dev_use(polaris_ngwc_plfm_mgr_t)

# /dev/remap_mem0 usage
polaris_remap_mem_dev_use(polaris_ngwc_plfm_mgr_t)

# open /dev/ttyS0 console in edison_platform_init
term_use_unallocated_ttys(polaris_ngwc_plfm_mgr_t)

polaris_disk_license_read(polaris_ngwc_plfm_mgr_t)

allow polaris_ngwc_plfm_mgr_t self:capability { chown fowner fsetid };

type polaris_ngwc_plfm_mgr_tmp_t;
files_tmp_file(polaris_ngwc_plfm_mgr_tmp_t)
files_tmp_filetrans(polaris_ngwc_plfm_mgr_t, polaris_ngwc_plfm_mgr_tmp_t, file, "pm_post_result")
files_tmp_filetrans(polaris_ngwc_plfm_mgr_t, polaris_ngwc_plfm_mgr_tmp_t, dir, "microcode_update")
files_tmp_filetrans(polaris_ngwc_plfm_mgr_t, polaris_ngwc_plfm_mgr_tmp_t, dir, "mcu_upgrading")
manage_files_pattern(polaris_ngwc_plfm_mgr_t, polaris_ngwc_plfm_mgr_tmp_t, polaris_ngwc_plfm_mgr_tmp_t)
manage_dirs_pattern(polaris_ngwc_plfm_mgr_t, polaris_ngwc_plfm_mgr_tmp_t, polaris_ngwc_plfm_mgr_tmp_t)

# LOOK AT ME: raw memory write access
polaris_dev_mem_use(polaris_ngwc_plfm_mgr_t)

# create /tmp/hw_entropy file and fill with info from act2
polaris_hw_entropy_create(polaris_ngwc_plfm_mgr_t)

polaris_boot_tmp_read(polaris_ngwc_plfm_mgr_t)

```

```

polaris_flashlib_write(polaris_ngwc_plfm_mgr_t)

# check existence of /tmp/tam_cfg_done
polaris_tam_getattrs_tmp_dirs(polaris_ngwc_plfm_mgr_t)

# LOOK AT ME: Allow access to bootflash /flash/tam_client_app.log. file access
# remove after CSCvh66533 fixed
polaris_bootflash_manage(polaris_ngwc_plfm_mgr_t)

# scans /sys/devices/pci0000:00/0000:00:00.0
dev_read_sysfs(polaris_ngwc_plfm_mgr_t)

# rsync nvram_config file accross stack
#rsync_exec(polaris_ngwc_plfm_mgr_t)
gen_require(`
    type rsync_t;
`)
rsync_entry_domtrans(polaris_ngwc_plfm_mgr_t, rsync_t)
allow rsync_t polaris_ngwc_plfm_mgr_t:process sigchld;
# write access to /dev/ttyS0
term_write_unallocated_ttys(rsync_t)

# reads from, populates chasfs with values and deletes /tmp/package_biv_sums
polaris_kgv_data_manage(polaris_ngwc_plfm_mgr_t)

# /dev/shm/sdm access
optional_policy(`
polaris_sdm_shm_manage(polaris_ngwc_plfm_mgr_t)
`)

# platform manager moves 00001.nvram_config file to /bootflash/nvram_config
polaris_nvram_manage(polaris_ngwc_plfm_mgr_t)
allow polaris_ngwc_plfm_mgr_t self:process setfscreate;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwcplfmmgr.te
No license file was found, but licenses were detected in source scan.

#
# July 2019, Victor Kamensky
#
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#

policy_module(polarisgrmgr, 1.0);

```

```
gen_require(  
    type polaris_gr_mgr_t;  
)
```

```
polaris_crft_data_manage(polaris_gr_mgr_t)  
polaris_chasfs_manage(polaris_gr_mgr_t)  
polaris_tdlresolve_read(polaris_gr_mgr_t)  
polaris_cpld_read(polaris_gr_mgr_t)  
polaris_lua_read(polaris_gr_mgr_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_gr_mgr_t)
```

```
allow polaris_gr_mgr_t self:capability { dac_override dac_read_search };  
#DB persistence  
polaris_tdlpersist_setup(polaris_gr_mgr_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisgrmgr.te  
No license file was found, but licenses were detected in source scan.
```

```
#  
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#  
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#
```

```
# ngio devices  
/dev/ngio[0-9]* -c gen_context(system_u:object_r:polaris_ngio_device_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisiomd.fc  
No license file was found, but licenses were detected in source scan.
```

```
#  
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#
```

```
/tmp/idope_svr gen_context(system_u:object_r:polaris_fed_debug_sock_t,s0)  
/tmp/shfwd_svr gen_context(system_u:object_r:polaris_fed_debug_sock_t,s0)
```

```
/tmp/pktgen.txt gen_context(system_u:object_r:polaris_fed_debug_tmp_t,s0)  
/tmp/DopeElam.sh gen_context(system_u:object_r:polaris_fed_debug_tmp_t,s0)  
/tmp/MemDumpElam.sh gen_context(system_u:object_r:polaris_fed_debug_tmp_t,s0)
```

```
/dcmlog.txt -- gen_context(system_u:object_r:polaris_fed_debug_dcmlog_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwcfeddebug.fc
```

No license file was found, but licenses were detected in source scan.

```
#  
# March 2017, Victor Kamensky  
#  
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#
```

```
policy_module(polariscpld, 1.0);
```

```
#####  
# CPLD Driver policy  
#####
```

```
# note polaris_sysfs_cpld_t is defined in kernel/devices.te, since genfscon statements  
# could be only in base policy
```

```
type polaris_cpld_device_t;  
dev_node(polaris_cpld_device_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscpld.te
```

No license file was found, but licenses were detected in source scan.

```
#  
# August 2017, Shawn Lu  
#  
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# All rights reserved  
#
```

```
policy_module(polarisrogued, 1.0);
```

```
gen_require(  
    type polaris_rogued_t;  
)
```

```
polaris_btrace_data_manage(polaris_rogued_t)  
polaris_chasfs_manage(polaris_rogued_t)  
polaris_tdlresolve_read(polaris_rogued_t)  
polaris_tdlldb_list_dirs(polaris_rogued_t)  
polaris_cpld_read(polaris_rogued_t)  
polaris_lua_read(polaris_rogued_t)
```

```

polaris_flashlib_read(polaris_rogued_t)

polaris_ripc_sman_ui_serv_connect(polaris_rogued_t)

polaris_db_tdlldb_dir_use(polaris_rogued_t)

# allow to use setrlimit
allow polaris_rogued_t self:process setrlimit;
allow polaris_rogued_t self:capability sys_resource;
allow polaris_rogued_t self:capability dac_override;

# stuff related to vrf support of the socket
polaris_lfts_dev_use(polaris_rogued_t)
polaris_socketat_nsfs_read(polaris_rogued_t)

# # allow to open udp socket on RDLP port 6532
corenet_udp_bind_polaris_rdlp_port(polaris_rogued_t)
corenet_udp_bind_generic_node(polaris_rogued_t)
allow polaris_rogued_t self:udp_socket { create_socket_perms recv_msg send_msg };

# reading images/ap_capabilities.xml
polaris_wlc_ap_images_read(polaris_rogued_t)

# syslogs in RLDP
logging_send_syslog_msg(polaris_rogued_t)

#DB persistence
polaris_tdlldbpersist_setup(polaris_rogued_t)
polaris_tmp_tdlldb_persist_setup(polaris_rogued_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrogued.te
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#
# March 2017, Victor Kamensky
#
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#

policy_module(polariscmm, 1.0);

gen_require(
    type polaris_cmm_t;
)

```

```
polaris_btrace_data_manage(polaris_cmm_t)
polaris_crft_data_manage(polaris_cmm_t)
polaris_chasfs_manage(polaris_cmm_t)
polaris_tdlresolve_read(polaris_cmm_t)
polaris_tdlldb_list_dirs(polaris_cmm_t)
polaris_cpld_read(polaris_cmm_t)
polaris_flashlib_read(polaris_cmm_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_cmm_t)
```

```
allow polaris_cmm_t self:capability dac_override;
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscmm.te
```

No license file was found, but licenses were detected in source scan.

```
dnl All rights reserved
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_base_ripc_if.m4
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_mqipc_fc.m4
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_process_fc.m4
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2016-2019 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
# polarisofa file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisofa.fc
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
# June 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2017-2021 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
policy_module(polariscaf, 1.0);
```

```
gen_require(^
```

```
    type polaris_caf_t;
```

```

    type polaris_caf_exec_t;
    type usr_t;
)

ifdef(`nyquist_platform',`
gen_require(`
    type polaris_sioxcd_rp_t;
)
# Allow read of /etc/passwd
auth_map_passwd(polaris_sioxcd_rp_t)

# Allow usage of ls in helper script
corecmd_exec_bin(polaris_sioxcd_rp_t)

# Allow sysfs read
dev_list_sysfs(polaris_sioxcd_rp_t)

# Allow create/write/open of files under tmp
type polaris_sioxcd_rp_tmp_t;
files_tmp_file(polaris_sioxcd_rp_tmp_t)
files_tmp_filetrans(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, { dir file } )
manage_dirs_pattern(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, polaris_sioxcd_rp_tmp_t)
manage_files_pattern(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, polaris_sioxcd_rp_tmp_t)
manage_fifo_files_pattern(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, polaris_sioxcd_rp_tmp_t)

# Allow losetup in helper script to run in its own domain
fstools_domtrans(polaris_sioxcd_rp_t)

# Allow mount/umount in its own domain
mount_domtrans(polaris_sioxcd_rp_t)

# Allow /tmp/sw/boot read
polaris_boot_tmp_read(polaris_sioxcd_rp_t)

# Allow /tmp/tmppub read
polaris_btrace_tmppub_read(polaris_sioxcd_rp_t)

# Allow iox_polaris.conf read
polaris_caf_files_read(polaris_sioxcd_rp_t)

# Allow chasfs access
polaris_chasfs_manage(polaris_sioxcd_rp_t)

# Allow /sys/devices/platform/cpld/board_vtype read
polaris_cpld_read(polaris_sioxcd_rp_t)

# Allow debug.conf access
polaris_read_debug_conf(polaris_sioxcd_rp_t)

```

```

# Allow cats /tmp/sw/boot/rmonbifo/boardsubtype
polaris_rmonbifo_tmp_read(polaris_sioxcd_rp_t)

# Allow console logging
term_open_unallocated_ttys(polaris_sioxcd_rp_t)

# Allow capability 1/24 access
allow polaris_sioxcd_rp_t self:capability { dac_override sys_resource };

# Transition to chvrf domain needed by push_using_rsync
polaris_chvrf_domtrans(polaris_sioxcd_rp_t)

# Allow flashutil
polaris_flashlib_read(polaris_sioxcd_rp_t)

# logger needs to run pidof
dev_read_sysfs(polaris_sioxcd_rp_t)
kernel_read_system_state(polaris_sioxcd_rp_t)
domain_read_all_domains_state(polaris_sioxcd_rp_t)

# Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_sioxcd_rp_t)

# Allow ls /tmp/ufs/crashinfo
optional_policy(`
polaris_ncd_tmp_read(polaris_sioxcd_rp_t)
`)

# Allow logger which is used for syslog messages
allow polaris_sioxcd_rp_t self:unix_dgram_socket { connect create };
logging_send_syslog_msg(polaris_sioxcd_rp_t)

# Allow standby to access /dev/sda3
fs_getattr_xattr_fs(polaris_sioxcd_rp_t)

# Allow getattr under iox_alt_hdd_mount_dir
polaris_iox_alt_hdd_getattr(polaris_sioxcd_rp_t)
`)

polaris_chasfs_manage(polaris_caf_t)
polaris_btrace_data_manage(polaris_caf_t)
polaris_cpld_read(polaris_caf_t)
polaris_boot_tmp_read(polaris_caf_t)

# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_caf_t)

```

```

corecmd_exec_bin(polaris_caf_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_caf_t)

# run-caf.sh invokes startup.py. This leads to node_t:tcp_socket node_bind
corenet_tcp_bind_generic_node(polaris_caf_t)

allow polaris_caf_t self:capability { net_admin sys_resource };
allow polaris_caf_t self:tcp_socket { accept listen create_socket_perms };
allow polaris_caf_t self:udp_socket create_socket_perms;
allow polaris_caf_t self:unix_dgram_socket { create_socket_perms sendto };
allow polaris_caf_t self:cap_userns { sys_admin sys_ptrace setgid setuid sys_chroot };

# df needs to have getattr on many file/dir/fs
fs_getattr_all_fs(polaris_caf_t)
fs_getattr_all_files(polaris_caf_t)
files_getattr_all_dirs(polaris_caf_t)
dev_getattr_all_chr_files(polaris_caf_t)
files_getattr_all_mountpoints(polaris_caf_t)

# df on "/" needs fs_t:filesystem getattr
fs_getattr_xattr_fs(polaris_caf_t)

# allow execution of /usr/sbin/brctl
brctl_domtrans(polaris_caf_t)

#allow open/read/search cgroup files like /sys/fs/cgroup/cpu,cpuacct/machine
fs_read_cgroup_files(polaris_caf_t)
fs_list_cgroup_dirs(polaris_caf_t)

# add new type for /guestshell files and allow CAF to manage them
type polaris_guestshell_t;
files_type(polaris_guestshell_t)
manage_files_pattern(polaris_caf_t, polaris_guestshell_t, polaris_guestshell_t)
manage_lnk_files_pattern(polaris_caf_t, polaris_guestshell_t, polaris_guestshell_t)
manage_dirs_pattern(polaris_caf_t, polaris_guestshell_t, polaris_guestshell_t)

#required to support, guestshell enable, which creates <iox-storage>/iox/repo/guestshell
relabelto_files_pattern(polaris_caf_t, polaris_guestshell_t, polaris_guestshell_t)

# run_ioxn_caf.sh invokes run-caf.sh which executes "ip"
sysnet_domtrans_ifconfig(polaris_caf_t)
# allow netns operations
sysnet_manage_ifconfig_run(polaris_caf_t)

libs_domtrans_ldconfig(polaris_caf_t)

```

```

# add new type for /bootflash/iox files and allow CAF to manage them
type polaris_iox_files_t;
polaris_disk_type(polaris_iox_files_t)
polaris_iox_files_manage(polaris_caf_t)

# need open, read, ioctl, getattr on /bootflash/debug.conf
polaris_read_debug_conf(polaris_caf_t)

# run_ioxn_caf.sh cats /tmp/sw/boot/rmonbifo/boardsubtype
polaris_rmonbifo_tmp_read(polaris_caf_t)

# pvsm_cpu.sh reads /tmp/cgroup.log
optional_policy(`
polaris_vman_tmp_manage(polaris_caf_t)
`)

# allow to read /proc/cpuinfo
kernel_read_system_state(polaris_caf_t)

optional_policy(`
container_runtime_domtrans(polaris_caf_t)
`)

# add new type for /opt/cisco/caf files and allow CAF to manage them
type polaris_caf_files_t;
files_type(polaris_caf_files_t)
files_root_filetrans(polaris_caf_t, polaris_caf_files_t, dir)
files_root_filetrans(polaris_caf_t, polaris_caf_exec_t, dir, "scripts")
manage_dirs_pattern(polaris_caf_t, polaris_caf_files_t, polaris_caf_files_t)
manage_files_pattern(polaris_caf_t, polaris_caf_files_t, polaris_caf_files_t)
manage_lnk_files_pattern(polaris_caf_t, polaris_caf_files_t, polaris_caf_files_t)

gen_require(`
    type polaris_hm_t;
`)
polaris_caf_files_read(polaris_hm_t)

# this label is created for sharing of core file dirs between host and containers
type polaris_caf_core_files_t;
polaris_disk_type(polaris_caf_core_files_t)
# transition /local files and dirs
files_root_filetrans(polaris_caf_t, polaris_caf_core_files_t, dir, "local")
polaris_btrace_data_manage(polaris_caf_core_files_t)
manage_files_pattern(polaris_caf_core_files_t, usr_t, usr_t)

# manage local core files between host and container
polaris_caf_local_core_files_manage(polaris_caf_t)
polaris_caf_local_core_files_manage(brctl_t)

```

```

# run_ioxn_caf.sh invokes startup.py that eventually through resourcemanager.py
# calls cpu_count_logical function in order to get number of cores and which
# needs read access to /sys/devices/system/cpu/online
dev_read_sysfs(polaris_caf_t)

# run-caf.sh modifies iox_polaris.conf; backup is saved due to "sed-i.bak".
# in order to preserve security context, setfscreate is invoked
allow polaris_caf_t self:process setfscreate;

# work with /var/log/caf/ files
type polaris_caf_log_t;
logging_log_file(polaris_caf_log_t)
manage_files_pattern(polaris_caf_t, polaris_caf_log_t, polaris_caf_log_t)
manage_dirs_pattern(polaris_caf_t, polaris_caf_log_t, polaris_caf_log_t)
logging_log_filetrans(polaris_caf_t, polaris_caf_log_t, dir, "caf")
logging_log_filetrans(polaris_caf_t, polaris_caf_log_t, dir, "docker")

corenet_tcp_bind_polaris_caf_api_port(polaris_caf_t)

virt_stream_connect(polaris_caf_t)
virt_read_config(polaris_caf_t)

# allow to get getattr of /proc file system
domain_read_all_domains_state(polaris_caf_t)

# allow access to /etc/guestshell_rsa_key* files
type polaris_guestshell_ssh_key_t;
files_type(polaris_guestshell_ssh_key_t)
files_etc_filetrans(polaris_caf_t, polaris_guestshell_ssh_key_t, file, "guestshell_rsa_key")
files_etc_filetrans(polaris_caf_t, polaris_guestshell_ssh_key_t, file, "guestshell_rsa_key.pub")
manage_files_pattern(polaris_caf_t, polaris_guestshell_ssh_key_t, polaris_guestshell_ssh_key_t)

# add new type for "internal" temp files created by underlying python modules when
# user-level python scripts (e.g., run_ioxn_caf.sh, run-caf.sh, etc) performs init;
# we are now creating them using TMPDIR=/tmp/caf; and, allow CAF to manage these
# internal temp files; in addition, underlying python-infra invokes __mmap() that
# somehow translates to.... execute stuff like "/tmp/caf/#97893 (deleted)"
type polaris_caf_tmp_files_t;
files_tmp_file(polaris_caf_tmp_files_t)
files_tmp_filetrans(polaris_caf_t, polaris_caf_tmp_files_t, dir)
files_tmp_filetrans(polaris_caf_t, polaris_caf_tmp_files_t, file)
manage_files_pattern(polaris_caf_t, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
manage_dirs_pattern(polaris_caf_t, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
# python through libffi tries to mmap open file with PROT_EXEC, it triggers need
# for execute permission
allow polaris_caf_t polaris_caf_tmp_files_t:file execute;
allow polaris_caf_t polaris_caf_tmp_files_t:file map;

```

```

# python3 seems to do a setattr syscall
# A folder like /bootflash/iox/repo/guestshell/extract_archive
# contains files that are extracted from a tarball and are
# made polaris_caf_tmp_files_t because of the files_tmp_filetrans rule
relabel_files_pattern(polaris_caf_t, polaris_iox_files_t, polaris_iox_files_t)
relabel_files_pattern(polaris_caf_t, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)

# allow to run e2fsck in its own domain
fstools_domtrans(polaris_caf_t)

# allow to run mount in its own domain
mount_domtrans(polaris_caf_t)

# add new type for /guestshell/*.sh files
type polaris_guestshell_exec_t;
files_type(polaris_guestshell_exec_t)

# add new type for /var/run/netns/guestshell
type polaris_guestshell_var_run_t;
files_type(polaris_guestshell_var_run_t)

# add new type for /var/run/cisco_cli
type polaris_caf_var_run_t;
files_pid_file(polaris_caf_var_run_t)
manage_dirs_pattern(polaris_caf_t, polaris_caf_var_run_t, polaris_caf_var_run_t)
manage_files_pattern(polaris_caf_t, polaris_caf_var_run_t, polaris_caf_var_run_t)
files_pid_filetrans(polaris_caf_t, polaris_caf_var_run_t, { file dir })

# Intermediate step: When CAF unpacks the contents of the application
# you upload, it will stage the contents somewhere and verify some checks
# (filesystem check on the disk image, existence of several folders, etc.). Disk
# images are mounted without any label since CAF has not generated security
# labels yet for the app at this point. The disk gets unmounted and eventually
# gets mounted again with the proper context/label.
type polaris_disk_caf_t;
polaris_disk_type(polaris_disk_caf_t)
list_dirs_pattern(polaris_caf_t, polaris_disk_caf_t, polaris_disk_caf_t)

allow polaris_caf_t self:capability { chown dac_override fowner fsetid setfcap sys_chroot sys_ptrace };
allow polaris_caf_t self:process setcap;
fs_read_nsfs_files(polaris_caf_t)

# caf to manage loop device: finding free /dev/loopN device
dev_rw_loop_control(polaris_caf_t)

# PLEASE LOOK AT ME
# allow caf to read, write /dev/loopN devices that are

```

```

# under fixed_disk_device_t label. It is pretty strong premission
# and at this point it is only done for /dev/loopN devices.
# Can we do better? i.e move /dev/loopN to some other label?
storage_manage_fixed_disk(polaris_caf_t)

# caf executing chroot via bash
gen_require(
    type svirt_sandbox_file_t;
)
allow polaris_caf_t svirt_sandbox_file_t:file { execute execute_no_trans };

gen_require(
    type polaris_disk_bootflash_t;
    type polaris_disk_hddisk_t;
)
setattr_dirs_pattern(polaris_caf_t, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
# replicating policy done for polaris_disk_bootflash_t
setattr_dirs_pattern(polaris_caf_t, polaris_disk_hddisk_t, polaris_disk_hddisk_t)

# caf connects to its own port 8098
corenet_tcp_connect_polaris_caf_api_port(polaris_caf_t)

virt_manage_sandbox_files(polaris_caf_t)

kernel_read_network_state(polaris_caf_t)

polaris_bootflash_manage(polaris_caf_t)
polaris_bootflash_files_mmap(polaris_caf_t)
#allow polaris_disk_hddisk_t manage like polaris_disk_bootflash_t
polaris_hddisk_manage(polaris_caf_t)

# caf execve virsh
gen_require(
    type virsh_t;
    type virsh_exec_t;
)
domtrans_pattern(polaris_caf_t, virsh_exec_t, virsh_t)
# virsh needs to read /opt/cisco/caf/scripts/ieobcbr.xml
polaris_caf_files_read(virsh_t)

# caf calls tipc-config that works with tipc sockets
allow polaris_caf_t self:socket create_socket_perms;
allow polaris_caf_t self:netlink_generic_socket { create_socket_perms sendto recvfrom };

# get and set attrs on httpd_var_run_t under /bootflash/iox
gen_require(
    type httpd_var_run_t;
)

```

```

getattr_sock_files_pattern(polaris_caf_t, httpd_var_run_t, httpd_var_run_t)
setattr_sock_files_pattern(polaris_caf_t, httpd_var_run_t, httpd_var_run_t)
manage_dirs_pattern(polaris_caf_t, httpd_var_run_t, httpd_var_run_t)
# allow TCP connection for http port e.g. Local Manager
corenet_tcp_connect_http_port(polaris_caf_t)

# execute lvm commands, like lvs
lvm_domtrans(polaris_caf_t)

polaris_disk_crashinfo_getattr(polaris_caf_t)
optional_policy(`
polaris_ncd_tmp_read(polaris_caf_t)
')

logging_send_syslog_msg(polaris_caf_t)

# tries to load KLM like cuse, fuse, overlay
modutils_domtrans_insmod(polaris_caf_t)

# modifies files under /var/www/features/iox
apache_manage_sys_content(polaris_caf_t)

# caf reads version of ioxman from its executable
polaris_ioxman_exec_read(polaris_caf_t)

polaris_ioxman_show_version(polaris_caf_t)

type polaris_iox_alt_hdd_files_t;
files_type(polaris_iox_alt_hdd_files_t)
polaris_pfile_type(polaris_iox_alt_hdd_files_t)
polaris_iox_alt_hdd_manage(polaris_caf_t)

# On stargazer platform /vol/disk0 is used by iox to create below dirs.
# On nyquist platform /vol/usb1 with polaris_disk_harddisk_t is used
# Transition them to appropriate labels.
gen_require(`
    type container_var_lib_t;
')

filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t polaris_iox_alt_hdd_files_t },
polaris_iox_files_t, dir, "iox")
filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t polaris_iox_alt_hdd_files_t },
polaris_caf_tmp_files_t, dir, "caf")
filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t polaris_iox_alt_hdd_files_t
polaris_iox_files_t }, container_var_lib_t, dir, "docker")
filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t polaris_iox_alt_hdd_files_t },
polaris_iox_files_t, dir, "iox_data_share")
filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t polaris_iox_alt_hdd_files_t },

```

```

polaris_iox_files_t, dir, "iox_host_data_share")

# Allow files under guest-share directory which is shared between ios
# and container
type polaris_iox_shared_files_t;
files_type(polaris_iox_shared_files_t)
polaris_pfile_type(polaris_iox_shared_files_t)
manage_dirs_pattern(polaris_caf_t, polaris_iox_shared_files_t, polaris_iox_shared_files_t)
filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t polaris_iox_alt_hdd_files_t },
polaris_iox_shared_files_t, dir, "guest-share")

# Allow signature verification of applications
gen_require(
    type polaris_code_verify_t;
)
polaris_iox_files_manage(polaris_code_verify_t)

# allow caf to control /tmp/trace/resource.log
polaris_iox_manage_tmp_files(polaris_caf_t)

# some utility running under caf needs access to /varied/ovf-env.xml
polaris_disk_varied_read(polaris_caf_t)

# caf reads the udev information
gen_require(
    type udev_var_run_t;
)
manage_files_pattern(polaris_caf_t, udev_var_run_t, udev_var_run_t)

gen_require(
    type virtd_lxc_t;
)
allow polaris_caf_t virtd_lxc_t:process signull;

polaris_removable_manage(polaris_caf_t)
polaris_lm_tmp_read(polaris_caf_t)

# caf modifies /etc/cgroup_params.txt
files_manage_etc_files(polaris_caf_t)

# read /tmp/iox_override.conf created by ioxman
polaris_iox_read_tmp_files(polaris_caf_t)

# python udev library used by caf
allow polaris_caf_t self:netlink_kobject_uevent_socket { bind create getattr setopt };

#need access to rawip socket by pd_iox.sh
allow polaris_caf_t self:capability { net_raw setgid };

```

```

allow polaris_caf_t self:rawip_socket { create getopt setopt };
# LOOK AT ME caf leaks fifo file descriptors need permissions for
# domains that started by it
gen_require(
    type iptables_t;
)
allow iptables_t polaris_caf_t:fifo_file { read write append getattr };

# allow iptables_t usersns permissions for IP accessed by the script guestshell_setup.sh
allow iptables_t self:cap_usersns { net_admin net_raw };

container_stream_connect(polaris_caf_t)

gen_require(
    type pki_ca_port_t;
)
allow polaris_caf_t pki_ca_port_t:tcp_socket name_connect;

polaris_flashlib_read(polaris_caf_t)
polaris_flashlib_write(polaris_caf_t)
polaris_contdev_dev_read(polaris_caf_t)

gen_require(
    type rsync_exec_t;
    type rsync_port_t;
)
allow polaris_caf_t rsync_exec_t:file { execute execute_no_trans getattr map open read };
allow polaris_caf_t rsync_port_t:tcp_socket name_connect;

# IOX uses rsync to sync the data
gen_require(
    type rsync_t;
)
rsync_entry_domtrans(polaris_caf_t, rsync_t)
polaris_manage_rsync_tmplog_dir(polaris_caf_t)
allow rsync_t polaris_caf_t:fifo_file { getattr write };

kernel_search_network_sysctl(polaris_caf_t)
kernel_rw_net_sysctls(polaris_caf_t)
dev_rw_sysfs(polaris_caf_t)

# Allow run-caf.sh to configure byte_queue_limits/limit_min for KR port
gen_require(
    type sysfs_t;
)
allow polaris_caf_t sysfs_t:file create;
dev_manage_sysfs_dirs(polaris_caf_t)

```

```

# CAF needs access to setup for containers
manage_dirs_pattern(polaris_caf_t, self, self)
fs_associate_proc(polaris_caf_t)

# guestshell_setup.sh reads /proc/sys/kernel/core_pattern
kernel_read_usermodehelper_state(polaris_caf_t)
# and then guestshell_setup.sh reads /tmp/corelink
gen_require(
    type initrc_tmp_t;
)
allow polaris_caf_t initrc_tmp_t:lnk_file read;

# Beluga/Meraki container
ifdef(^ms_platform',`
polaris_iox_container_domtrans(polaris_caf_t)
)`
# Bottlenose/Meraki container
ifdef(^bottlenose_platform',`
polaris_iox_container_domtrans(polaris_caf_t)
)`

#allow run_ioxn_caf.sh to modify /etc/docker/daemon.json, etc.
container_manage_config_files(polaris_caf_t)

# Manage IOx Secure storage CC files
type polaris_iox_ss_disk_t;
files_type(polaris_iox_ss_disk_t)
polaris_pfile_type(polaris_iox_ss_disk_t)

#Guestshell management
virt_signull(polaris_caf_t)

gen_require(
    type ifconfig_t;
)
# allow ifconfig_t users permissions for IP
allow ifconfig_t self:cap_users { net_admin sys_admin sys_ptrace };
# allow ifconfig_t to transition into dhcp domain
sysnet_domtrans_dhcp(ifconfig_t)

# Being an IOSp client does not allow for setattr permissions
gen_require(
    type polaris_iosd_portal_app_lipc_t;
)
setattr_sock_files_pattern(polaris_caf_t, polaris_iosd_portal_app_lipc_t, polaris_iosd_portal_app_lipc_t)

ifdef(^passport_platform',`

```

```

gen_require(
    type polaris_sioxcd_rp_t;
)

# Allow read of /etc/passwd
auth_map_passwd(polaris_sioxcd_rp_t)
#
# Allow usage of ls in helper script
corecmd_exec_bin(polaris_sioxcd_rp_t)

# Allow sysfs read
dev_list_sysfs(polaris_sioxcd_rp_t)

# Allow create/write/open of files under tmp
type polaris_sioxcd_rp_tmp_t;

files_tmp_file(polaris_sioxcd_rp_tmp_t)
files_tmp_filetrans(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, { dir file } )
manage_dirs_pattern(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, polaris_sioxcd_rp_tmp_t)
manage_files_pattern(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, polaris_sioxcd_rp_tmp_t)
manage_fifo_files_pattern(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, polaris_sioxcd_rp_tmp_t)

# Allow losetup in helper script to run in its own domain
fstools_domtrans(polaris_sioxcd_rp_t)
#
# # Allow mount/umount in its own domain
mount_domtrans(polaris_sioxcd_rp_t)
#
# # Allow /tmp/sw/boot read
polaris_boot_tmp_read(polaris_sioxcd_rp_t)

# # Allow /tmp/tmppub read
polaris_btrace_tmppub_read(polaris_sioxcd_rp_t)

# # Allow iox_polaris.conf read
polaris_caf_files_read(polaris_sioxcd_rp_t)
#
# Allow chasfs access
polaris_chasfs_manage(polaris_sioxcd_rp_t)

# Allow /sys/devices/platform/cpld/board_vtype read
polaris_cpld_read(polaris_sioxcd_rp_t)

# Allow debug.conf access
polaris_read_debug_conf(polaris_sioxcd_rp_t)

# Allow cats /tmp/sw/boot/rmonbifo/boardsubtype

```

```

polaris_rmonbifo_tmp_read(polaris_sioxcd_rp_t)

# Allow console logging
term_open_unallocated_ttys(polaris_sioxcd_rp_t)

# Allow capability 1/24 access
allow polaris_sioxcd_rp_t self:capability { dac_override sys_resource };

# Transition to chvrf domain needed by push_using_rsync
polaris_chvrf_domtrans(polaris_sioxcd_rp_t)

# Allow flashutil
polaris_flashlib_read(polaris_sioxcd_rp_t)

#iptables execute in its own domain
iptables_domtrans(polaris_caf_t)

# logger needs to run pidof
dev_read_sysfs(polaris_sioxcd_rp_t)
kernel_read_system_state(polaris_sioxcd_rp_t)
domain_read_all_domains_state(polaris_sioxcd_rp_t)

# Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_sioxcd_rp_t)

# Allow ls /tmp/ufs/crashinfo
optional_policy(`
polaris_ncd_tmp_read(polaris_sioxcd_rp_t)
`)

# Allow logger which is used for syslog messages
allow polaris_sioxcd_rp_t self:unix_dgram_socket { connect create };
logging_send_syslog_msg(polaris_sioxcd_rp_t)

# Allow standby to access /dev/sda3
fs_getattr_xattr_fs(polaris_sioxcd_rp_t)

# Allow getattr under iox_alt_hdd_mount_dir
polaris_iox_alt_hdd_getattr(polaris_sioxcd_rp_t)
`)

# Allow sync_data to use chvrf
polaris_chvrf_domtrans(polaris_caf_t)

#tty device and link files under /dev
type polaris_caf_tty_file_t;
dev_node(polaris_caf_tty_file_t)
dev_filetrans(polaris_caf_t, polaris_caf_tty_file_t, lnk_file)

```

```

term_use_ptmx(polaris_caf_t)
polaris_caf_tty_lnk_manage(polaris_caf_t)
polaris_caf_chr_file_read(polaris_caf_t)

polaris_iosd_vcpu_read(polaris_caf_t)

# Allow access starting/stopping iox
polaris_chasfs_read(iptables_t)
polaris_chasfs_read(ifconfig_t)
polaris_hman_use_fifo(polaris_caf_t)
iptables_domtrans(polaris_caf_t)

# Allow application signature verification
polaris_code_verify_domtrans(polaris_caf_t)

#access /proc/rmbonbifo file cat9k-ioxhelper.sh
polaris_proc_rmonbifo_read(polaris_caf_t)

gen_require(
    type dhcp_t;
)
# allow these users capabilities for dhcp
allow dhcp_t self:cap_users { net_raw net_bind_service };
# allow CAF to transition to dhcp e.g. dhclient_custom.sh
sysnet_domtrans_dhcp(polaris_caf_t)
# allow reading of dhcp configuration files e.g.
# /vol/usb1/iox/repo-docker/perfsonar1/dhcp/dhcp_eth0.conf
polaris_caf_files_read(dhcp_t)
# allow writing of dhcp lease files e.g. eth0ip4.lease
polaris_iox_files_manage(dhcp_t)
# allow dhcp domain to transition back into CAF e.g. dhclient_custom.sh
polaris_caf_domtrans(dhcp_t)

# Allow read container share files
container_read_share_files(polaris_caf_t)

# Allow manage container files
gen_require(
    type container_file_t;
    type container_share_t;
    type container_log_t;
)
mmap_files_pattern(polaris_caf_t, container_file_t, container_file_t)
manage_files_pattern(polaris_caf_t, container_file_t, container_file_t)

manage_chr_files_pattern(polaris_caf_t, container_share_t, container_share_t)
manage_fifo_files_pattern(polaris_caf_t, container_share_t, container_share_t)
manage_sock_files_pattern(polaris_caf_t, container_share_t, container_share_t)

```

```

manage_files_pattern(polaris_caf_t, container_log_t, container_log_t)

# Allow polaris caf to set attributes of device nodes of fuse devices
gen_require(
    type fuse_device_t;
)
allow polaris_caf_t fuse_device_t:chr_file setattr;

# Allow polaris caf to set attributes of TUN/TAP virtual network device
gen_require(
    type tun_tap_device_t;
)
allow polaris_caf_t tun_tap_device_t:chr_file setattr;

# Allow operations on fifo file
type fifo_var_run_t;
# make sure /tmp/ttyF0 is labeled correctly
files_tmp_file(fifo_var_run_t)
files_tmp_filetrans(polaris_caf_t, fifo_var_run_t, fifo_file)
manage_fifo_files_pattern(polaris_caf_t, fifo_var_run_t, fifo_var_run_t)

# allow udev read operations
polaris_udev_tmp_read(polaris_caf_t)

# allow link file for tmpfs_t
allow polaris_caf_t tmpfs_t:lnk_file create;

#####
# IOx Secure storage service policies
#####
optional_policy(
gen_require(
    type polaris_ioxss_rp_t;
    type polaris_sort_files_t;
    type polaris_iosd_t;
)
type polaris_ioxss_rp_tmp_t;
files_tmp_file(polaris_ioxss_rp_tmp_t)
files_tmp_filetrans(polaris_ioxss_rp_t, polaris_ioxss_rp_tmp_t, file, "ioxss_up")
polaris_ioxss_rp_tmp_manage(polaris_ioxss_rp_t)

polaris_chasfs_read(polaris_ioxss_rp_t)
polaris_lua_read(polaris_ioxss_rp_t)

manage_files_pattern(polaris_ioxss_rp_t, polaris_iox_ss_disk_t, polaris_iox_ss_disk_t)
allow polaris_sort_files_t polaris_iox_ss_disk_t:dir list_dir_perms;
allow polaris_iosd_t polaris_iox_ss_disk_t:dir list_dir_perms;

```

```

# Allow polaris_sort_files_t getattr of iosd_portal_app_lipc socket file
polaris_iosd_portal_app_lipc_getattr(polaris_sort_files_t)

# allow secure storage server to connect through tcp_socket on port 9000 from system-config.ini
gen_require(
    type http_port_t;
)

allow polaris_ioxss_rp_t self:tcp_socket { bind create listen setopt };
corenet_tcp_bind_http_port(polaris_ioxss_rp_t);
allow polaris_ioxss_rp_t node_t:tcp_socket node_bind;

# allow polaris caf to process signal of dhcp client
allow polaris_caf_t dhcp_t:process signal;

# allow secure storage server to connect through socket
allow polaris_ioxss_rp_t self:socket create_socket_perms;
)

optional_policy(
# Allow polaris_sort_files_t getattr of container fifo file
gen_require(
    type polaris_sort_files_t;
    type container_file_t;
)
getattr_fifo_files_pattern(polaris_sort_files_t, container_file_t, container_file_t)
)

# Clear iox handling
container_manage_lib_files(polaris_caf_t)
container_manage_lib_dirs(polaris_caf_t)
container_manage_share_files(polaris_caf_t)
container_manage_share_dirs(polaris_caf_t)
gen_require(
    type polaris_vs_oper_db_tdlldb_t;
    type polaris_tdlldb_t;
)
manage_files_pattern(polaris_caf_t, polaris_tdlldb_t, polaris_vs_oper_db_tdlldb_t)

# allow caf to read systemd unit files
systemd_read_unit_files(polaris_caf_t)

# allow restorecon on iox_alt_hdd_mount_dir
seutil_domtrans_setfiles(polaris_caf_t)

filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_iox_alt_hdd_files_t,
file, "iox_alt_hdd.dsk")

```

```
filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_iox_alt_hdd_files_t,
dir, "iox_alt_hdd_mount_dir")
```

```
allow ifconfig_t polaris_iox_files_t:file { read };
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscaf.te
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2016-2019 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
## <summary>Polaris emd Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisemd.if
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
# May 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2017-2020 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
## <summary>Polaris confd Policy Rules.</summary>
```

```
#####
```

```
## <summary>
```

```
## Setup /dev/shm/confd directory and file, pid and shared memory.
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_confd_shm_setup`,`
```

```
gen_require(`
```

```
type polaris_confd_shm_t;
```

```
type tmpfs_t;
```

```
`)
```

```
fs_tmpfs_filetrans($1, polaris_confd_shm_t, dir, "confd")
```

```
manage_dirs_pattern($1, tmpfs_t, polaris_conf_d_shm_t)
manage_files_pattern($1, { tmpfs_t polaris_conf_d_shm_t }, polaris_conf_d_shm_t)
allow $1 polaris_conf_d_shm_t:file map;
)
```

```
#####
```

```
## <summary>
##   Read /dev/shm/confd_shared_schema shared memory.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
```

```
interface(`polaris_conf_d_shared_schema_read`,`
  gen_require(`
    type polaris_conf_d_shm_t;
    type tmpfs_t;
  `)
  read_files_pattern($1, { tmpfs_t polaris_conf_d_shm_t } , polaris_conf_d_shm_t)
  allow $1 polaris_conf_d_shm_t:file map;
)
```

```
#####
```

```
## <summary>
##   Watch confd_shm directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
```

```
interface(`polaris_conf_d_shared_schema_watch`,`
  gen_require(`
    type polaris_conf_d_shm_t;
  `)
  allow $1 polaris_conf_d_shm_t:dir watch;
)
```

```
#####
```

```
## <summary>
##   Read /proc/cond_pid/exe file. Few dmi utilities do that by
## some reason. Look at handle_conf_d_pid_available.
##   Read files and symlinks under /dev/shm/confd.
## </summary>
```

```

## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_conf_d_read`,`
    gen_require(`
        type polaris_conf_d_t;
    `)
    read_files_pattern($1, polaris_conf_d_t, polaris_conf_d_t)
    read_lnk_files_pattern($1, polaris_conf_d_t, polaris_conf_d_t)
`)

#####
## <summary>
## Create /var/log/ndbutil directory
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_conf_ndbutil_create`,`
    gen_require(`
        type polaris_conf_ndbutil_lock_t;
    `)
    files_lock_filetrans($1, polaris_conf_ndbutil_lock_t, dir, "ndbutil")
    files_create_lock_dirs($1)
    manage_dirs_pattern($1, polaris_conf_ndbutil_lock_t, polaris_conf_ndbutil_lock_t)
    manage_files_pattern($1, polaris_conf_ndbutil_lock_t, polaris_conf_ndbutil_lock_t)
    create_dirs_pattern($1, polaris_conf_ndbutil_lock_t, polaris_conf_ndbutil_lock_t)
`)

#####
## <summary>
## Creates types for and rules for ndbutils files under /var/lock/ndbutil
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <param name="stem">
## <summary>
## Stem for the domain. Name is constructed as polaris_stem_ndbutil_t

```

```

## </summary>
## </param>
## <param name="name" optional="true">
## <summary>
## The name of the object being created.
## </summary>
## </param>
#
template(`polaris_ndbutil_lock_template`,`
    gen_require(`
        type polaris_confd_ndbutil_lock_t;
    `)
    type polaris_$2_ndbutil_t;
    files_type(polaris_$2_ndbutil_t)

    filetrans_pattern($1, polaris_confd_ndbutil_lock_t, polaris_$2_ndbutil_t, file, $3)
    manage_files_pattern($1, polaris_confd_ndbutil_lock_t, polaris_$2_ndbutil_t)

    allow $1 polaris_$2_ndbutil_t:file { watch watch_reads };
)

#####
## <summary>
## Execute a domain transition to run mmap_schema polaris process.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_mmap_schema_domtrans`,`
    gen_require(`
        type polaris_mmap_schema_t, polaris_mmap_schema_exec_t;
    `)

    domtrans_pattern($1, polaris_mmap_schema_exec_t, polaris_mmap_schema_t)
)

#####
## <summary>
## Execute a domain transition to run confd polaris process.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>

```

```

#
interface(`polaris_confdomtrans`,`
    gen_require(`
        type polaris_confdom_t, polaris_confdom_exec_t;
    `)

    domtrans_pattern($1, polaris_confdom_exec_t, polaris_confdom_t)
`)

#####
## <summary>
##   Read confd log file (i.e /var/confd0/log/cia-confd.log). Used
## by dmiaudthd to convert confd logs to btrace.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_confdom_log_read`,`
    gen_require(`
        type polaris_confdom_var_t;
    `)
    read_files_pattern($1, polaris_confdom_var_t, polaris_confdom_var_t)
`)

#####
## <summary>
##   Manage confd log file (i.e /var/confd0/log/cia-confd.log). Used
## by pman to rotate logs into /bootflash/tracelogs.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_confdom_log_manage`,`
    gen_require(`
        type polaris_confdom_var_t;
    `)
    manage_files_pattern($1, polaris_confdom_var_t, polaris_confdom_var_t)
`)

#####
## <summary>
## Execute dmi_ports_fetch in the caller domain.

```

```

## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`confd_exec_dmi_ports_fetch`,`
gen_require(`
type polaris_dmi_ports_fetch_exec_t;
`)

corecmd_search_bin($1)
can_exec($1, polaris_dmi_ports_fetch_exec_t)
`)

#####
## <summary>
## Manage confd /var/log files (i.e /var/log/confd)
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_confd_var_log_manage`,`
gen_require(`
type polaris_confd_var_log_t;
`)
logging_log_filetrans($1, polaris_confd_var_log_t, dir, "confd")
manage_dirs_pattern($1, var_log_t, polaris_confd_var_log_t)
manage_files_pattern($1, polaris_confd_var_log_t, polaris_confd_var_log_t)
`)

#####
## <summary>
## Read confd /var/log files (i.e /var/log/confd)
## /bootflash/tracelogs/cia-netconf-trace* also has polaris_confd_var_log_t
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_confd_var_log_read`,`
gen_require(`

```

```

        type polaris_conf_d_var_log_t;
    )
    list_dirs_pattern($1, polaris_conf_d_var_log_t, polaris_conf_d_var_log_t)
    read_files_pattern($1, polaris_conf_d_var_log_t, polaris_conf_d_var_log_t)
)

```

```
#####
```

```

## <summary>
## Write into fifo file created by confd, typical case when
##   confd starts script under popen in different domain.
## </summary>

```

```

## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolecap/>
#

```

```

interface(`polaris_conf_d_tmp_use_fifo`,`
gen_require(`
type polaris_conf_d_tmp_t;
)

```

```

)

```

```

)

```

```

#

```

```

interface(`polaris_conf_d_tmp_use_fifo`,`
gen_require(`
type polaris_conf_d_tmp_t;
)

```

```

)

```

```

)

```

```

read_fifo_files_pattern($1, polaris_conf_d_tmp_t, polaris_conf_d_tmp_t)
write_fifo_files_pattern($1, polaris_conf_d_tmp_t, polaris_conf_d_tmp_t)
)

```

```

)

```

```
#####
```

```

## <summary>
## Write into file created by confd, to deal with cases
##   confd starts script under popen in different domain and
##   file descriptor leaks into another domain. Since we cannot
##   modify confd to use O_CLOEXEC
## </summary>

```

```

## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolecap/>
#

```

```

interface(`polaris_conf_d_tmp_use`,`
gen_require(`
type polaris_conf_d_tmp_t;
)

```

```

)

```

```

)

```

```

#

```

```

interface(`polaris_conf_d_tmp_use`,`
gen_require(`
type polaris_conf_d_tmp_t;
)

```

```

)

```

```

)

```

```

read_files_pattern($1, polaris_conf_d_tmp_t, polaris_conf_d_tmp_t)
write_files_pattern($1, polaris_conf_d_tmp_t, polaris_conf_d_tmp_t)
)

```

```

)

```

```

')

#####
## <summary>
## Provide access for file operations under /etc/ dir.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_conf_d_etc_read`,`
    gen_require(`
        type polaris_conf_d_etc_t;
    `)

    read_files_pattern($1, polaris_conf_d_etc_t, polaris_conf_d_etc_t)
)

```

```

#####
## <summary>
## Create an object in the /var directory under
## polaris_conf_d_var_t label.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <param name="object">
## <summary>
## The object class of the object being created.
## </summary>
## </param>
## <param name="name" optional="true">
## <summary>
## The name of the object being created.
## </summary>
## </param>
#
interface(`polaris_conf_d_var_filetrans`,`
    gen_require(`
        type polaris_conf_d_var_t;
    `)

    files_var_filetrans($1, polaris_conf_d_var_t, $2, $3)
)

```

```
#####
## <summary>
##   Make the specified domain able to work with /var/confd0
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_conf_d_var_dir_manage`,`
    gen_require(`
        type polaris_conf_d_var_t;
    `)

    manage_dirs_pattern($1, polaris_conf_d_var_t, polaris_conf_d_var_t);
`)

#####
## <summary>
##   Execute a domain transition to run admin_tech scripts of sdwan
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_admin_tech_domtrans`,`
    gen_require(`
        type polaris_admin_tech_t, polaris_admin_tech_exec_t;
    `)

    domtrans_pattern($1, polaris_admin_tech_exec_t, polaris_admin_tech_t)
`)

#####
## <summary>
##   Read admin_tech files created under bootflash
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_admin_tech_data_read`,`
```

```

gen_require(
    type polaris_admin_tech_data_t;
)
read_files_pattern($1, polaris_admin_tech_data_t, polaris_admin_tech_data_t)
)

#####
## <summary>
##   Manage admin_tech files created under bootflash
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface('polaris_admin_tech_data_manage',
    gen_require(
        type polaris_admin_tech_data_t;
    )
    manage_files_pattern($1, polaris_admin_tech_data_t, polaris_admin_tech_data_t)
    manage_lnk_files_pattern($1, polaris_admin_tech_data_t, polaris_admin_tech_data_t)
    manage_dirs_pattern($1, polaris_admin_tech_data_t, polaris_admin_tech_data_t)

    allow $1 polaris_admin_tech_data_t:file watch;
)

#####
## <summary>
## Allow domain to be started by confd with
##   transition into specific service domain.
## </summary>
## <param name="domain">
##   <summary>
##     Type to be used to run utility.
##   </summary>
## </param>
## <param name="entry_point">
##   <summary>
##     Type of the program to be used as an entry point to this domain.
##   </summary>
## </param>
interface('polaris_conf_domain',
    gen_require(
        type polaris_conf_t;
    )

    domtrans_pattern(polaris_conf_t, $2, $1)

```

)

#####

## <summary>

## Manage confd\_cli files under /tmp/confd\_cli.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_conf\_d\_cli\_tmp\_manage`,`

gen\_require(`

type polaris\_conf\_d\_cli\_tmp\_t;

`)

manage\_files\_pattern(\$1, polaris\_conf\_d\_cli\_tmp\_t, polaris\_conf\_d\_cli\_tmp\_t)

)

#####

## <summary>

## Manage vconfd files under /tmp/vconfd.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_vconf\_d\_tmp\_manage`,`

gen\_require(`

type polaris\_vconf\_d\_tmp\_t;

`)

manage\_dirs\_pattern(\$1, polaris\_vconf\_d\_tmp\_t, polaris\_vconf\_d\_tmp\_t)

manage\_files\_pattern(\$1, polaris\_vconf\_d\_tmp\_t, polaris\_vconf\_d\_tmp\_t)

)

#####

## <summary>

## Connect to confd port. Should be used only by utility

## domains that do not have TDL entry. Processes with TDL entries

## just need to register as confd pseudo service clients.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

```

#
interface(`polaris_conf_d_connect',`
    polaris_ripc_conf_d_ipc_connect($1)
`)

#####
## <summary>
## Use unix stream socket created by confd as standard I/O
## descriptors. Need to look more, because so far it triggers only
## getattr, append and ioctl permissions. If it would be real standard I/O
## it would need read and write as well.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_conf_d_unix_stream_stdio_use',`
    gen_require(`
        type polaris_conf_d_t;
    `)
    allow $1 polaris_conf_d_t:unix_stream_socket { append getattr ioctl };
`)

#####
## <summary>
## Creates types and rules for a script that is started
## by confd process.
## </summary>
## <param name="stem">
## <summary>
## Stem for the domain. Name is constructed as polaris_stem_t
## </summary>
## </param>
#
template(`polaris_vconf_d_domain_template',`
    polaris_utility_domain_template($1)

    polaris_conf_d_domain(polaris_$1_t, polaris_$1_exec_t)

    # access /etc/passwd
    auth_use_nsswitch(polaris_$1_t)

    # inherit unix stream as script stdio
    polaris_conf_d_unix_stream_stdio_use(polaris_$1_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisconfd.if

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dnl

dnl April 2018, Victor Kamensky

dnl

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dnl

divert(-1)

include(`polaris\_process.m4`)

include(`polaris\_database\_db.m4`)

include(`polaris\_database\_db\_fc.m4`)

include(`polaris\_max\_scope.m4`)

divert(0)dnl

#

# This is a generated file! Instead of modifying this file,

# modify proper platform TDL file.

#

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_database\_fc.m4

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#

# February 2020, Victor Kamensky

#

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#

policy\_module(polarisinstallmgr, 1.0);

gen\_require(`

    type polaris\_install\_mgr\_t;

`)

polaris\_chasfs\_manage(polaris\_install\_mgr\_t)

polaris\_tdlresolve\_read(polaris\_install\_mgr\_t)

polaris\_cpld\_read(polaris\_install\_mgr\_t)

polaris\_flashlib\_read(polaris\_install\_mgr\_t)

polaris\_lua\_read(polaris\_install\_mgr\_t)

```

logging_send_syslog_msg(polaris_install_mgr_t)

polaris_ripc_sman_ui_serv_connect(polaris_install_mgr_t)

polaris_db_tlddb_dir_use(polaris_install_mgr_t)

# read all files in persisten storage
polaris_persistent_read(polaris_install_mgr_t)

# calls code_verify
polaris_code_verify_domtrans(polaris_install_mgr_t)
# calls mount command
mount_domtrans(polaris_install_mgr_t)

# allow access to gnmib image files
optional_policy(
polaris_gnmib_gnoi_images_read(polaris_install_mgr_t)
)

# LOOK AT ME: /dev/mem access restriction will be removed after
# CSCvu32649 is fixed using CSCvu32742.
# code_sign_verify accesses /dev/mem: class=chr_file, {read, open, map}
# to read the codesign key in storage
# side effects: execute is also allowed
gen_require(
    type polaris_code_verify_t;
    type polaris_nvram_file_t;
)
dev_rx_raw_memory(polaris_code_verify_t)

# read access to /bootflash/nvram_config on CLI "install remove inactivate"
read_files_pattern(polaris_code_verify_t, polaris_disk_bootflash_t, polaris_nvram_file_t)
getattr_files_pattern(polaris_code_verify_t, polaris_disk_bootflash_t, polaris_nvram_file_t)

# open, read, map and getattr access of capsule-upgrade.log file
polaris_capsule_upgrade_log_use(polaris_code_verify_t)

# calls install_mgr_helper_api.sh
corecmd_exec_bin(polaris_install_mgr_t)
corecmd_exec_shell(polaris_install_mgr_t)
auth_use_nsswitch(polaris_install_mgr_t)

# /tmp/sw/inst_tmp_x handling
type polaris_install_mgr_tmp_t;
files_tmp_file(polaris_install_mgr_tmp_t)
gen_require(
    type tmp_t;
)

```

```

manage_dirs_pattern(polaris_install_mgr_t, tmp_t, polaris_install_mgr_tmp_t)
manage_dirs_pattern(polaris_install_mgr_t, polaris_install_mgr_tmp_t, polaris_install_mgr_tmp_t)
files_tmp_filetrans(polaris_install_mgr_t, polaris_install_mgr_tmp_t, dir, "inst_tmp_1")
files_tmp_filetrans(polaris_install_mgr_t, polaris_install_mgr_tmp_t, dir, "inst_tmp_2")

# writes into /bootflash/.installer/watchlist
polaris_disk_install_manage(polaris_install_mgr_t)

# install_mgr_monitor.c:add_prior_watches
polaris_persistent_watch(polaris_install_mgr_t)

# watch over /tmp/patch
polaris_patch_data_watch(polaris_install_mgr_t)

polaris_repm_peer_mqipc_manage(polaris_install_mgr_t)

# watches over /tmp for /tmp/booted appearance in
# init_operation_mgmt_watches function
gen_require(
    type tmp_t;
)
allow polaris_install_mgr_t tmp_t:dir watch;

allow polaris_install_mgr_t self:capability sys_resource;

#install_mgr writes into /bootflash/.installer/watchlist and watches /bootflash/inot_fifo
polaris_install_disk_manage(polaris_install_mgr_t)

#install_mgr does search and get attribute operation on /tftp directory
gen_require(
    type tftpd_dir_rw_t;
)
allow polaris_install_mgr_t tftpd_dir_rw_t:dir { getattr search };

# allow read access to iso9660
fs_read_iso9660_files(polaris_install_mgr_t)

# accesses /proc/sys/vm/drop_caches
kernel_rw_vm_sysctls(polaris_install_mgr_t)

# creates files under /tmp/pkg_cs_debug through install_helper
# and verify_pkg shell function from common
polaris_pkg_cs_debug_manage(polaris_install_mgr_t)

# for pluggable FS, allow the install manager to access files on them (it needs read and
# write access).
gen_require(
    type removable_t;

```

```

)
allow polaris_install_mgr_t removable_t:dir { getattr open read search watch };
allow polaris_install_mgr_t removable_t:file { getattr open read };
allow polaris_install_mgr_t removable_t:lnk_file read;

#allow install_mgr to stat caf files in /vol/harddisk/caf, /bootflash/caf, etc.
polaris_caf_tmp_files_read(polaris_install_mgr_t)

# install manager Cleanup related to inotify watches, Basically frees malloced memory
gen_require(`
    type root_t;
)
allow polaris_install_mgr_t root_t:dir watch;

# install manager access to /guestshell
polaris_guestshell_files_read(polaris_install_mgr_t)

# install manager access to /lib/systemd/systemd
polaris_init_access_check(polaris_install_mgr_t)

# install manager reads dcmlog.txt
optional_policy(`
    gen_require(`
        type polaris_fed_debug_dcmlog_t;
    )
    read_files_pattern(polaris_install_mgr_t, polaris_fed_debug_dcmlog_t, polaris_fed_debug_dcmlog_t)
)
# install manager reads /firmware
polaris_firmware_read(polaris_install_mgr_t)

# install manager reads /guestshell
gen_require(`
    type polaris_guestshell_t;
)
getattr_dirs_pattern(polaris_install_mgr_t, polaris_guestshell_t, polaris_guestshell_t)

# install_manager reads /tmp/sw/boot during auto_upgrade
polaris_boot_tmp_read(polaris_install_mgr_t)

# install_manager writes /tmp/sw/boot during auto_upgrade
polaris_boot_tmp_write(polaris_install_mgr_t)

# install_manager reads /tmp/sw/boot/rmonbifo during auto_upgrade
polaris_rmonbifo_tmp_read(polaris_install_mgr_t)

# install_manager reads /tmp/tmppub during auto_upgrade
polaris_btrace_tmppub_read(polaris_install_mgr_t)

```

```
# install manager accesses /tmp/rsync_log_dir during auto_upgrade
polaris_manage_rsync_tmplog_dir(polaris_install_mgr_t)

# install manager invokes mcp_chvrf.sh for rsync operations during auto_upgrade
polaris_chvrf_domtrans(polaris_install_mgr_t)

polaris_bexecute_domtrans(polaris_install_mgr_t)

ifdef(`ngwc_family',`
# install_mgr needs to be able to execute the auto_upgrade_client_helper scripts
polaris_autoupgrade_domtrans(polaris_install_mgr_t)

# read /tmp/etc/installer
polaris_autoupgrade_tmp_manage(polaris_install_mgr_t)
')

ifdef(`mcp_family',`
# install_mgr needs to be able to execute the auto_upgrade_client_helper scripts
polaris_autoupgrade_domtrans(polaris_install_mgr_t)

# read /tmp/etc/installer
polaris_autoupgrade_tmp_manage(polaris_install_mgr_t)
')

ifdef(`wlc_family',`
# install_mgr needs to be able to execute the auto_upgrade_client_helper scripts
polaris_autoupgrade_domtrans(polaris_install_mgr_t)

# read /tmp/etc/installer
polaris_autoupgrade_tmp_manage(polaris_install_mgr_t)
')

# with "/bootflash"...this needs read and attr to access for logfile
polaris_read_user_file(polaris_install_mgr_t)
polaris_user_file_getattr(polaris_install_mgr_t)

# auto upgrade server bind operation when install manager initialize auto upgrade server
corenet_tcp_bind_polaris_autoupgrade_port(polaris_install_mgr_t)

# access to /tmp/etc
polaris_etc_list(polaris_install_mgr_t)

# read access to /tmp/etc/installer
polaris_install_tmp_read(polaris_install_mgr_t)

polaris_script_errmsg_use(polaris_install_mgr_t)

# install mgr calls install_abort.sh on rollback timer expiry
```

```

polaris_install_engine_domtrans(polaris_install_mgr_t)

# /tmp/ufs/crashinfo access
optional_policy(`
polaris_ncd_tmp_read(polaris_install_mgr_t)
`)

# read/write to /bootflash/.rollback_timer/install_abort_time
polaris_rbtimer_bootflash_manage(polaris_install_mgr_t)

allow polaris_install_mgr_t self:process setpgid;

optional_policy(`
  polaris_efi_files_list_dirs(polaris_install_mgr_t)
`)

# walk all files on "install issu activate" and "install remove inactivate" CLI
files_read_all_files(polaris_install_mgr_t)

# install mgr file descriptor leaks into mcp_chvrf.sh for rsync operation
gen_require(`
  type polaris_chvrf_t;
`)
allow polaris_chvrf_t polaris_install_mgr_t:file read;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisinstallmgr.te
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#
# May 2017, Victor Kamensky
#
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#

policy_module(polarisconfd, 1.0);

gen_require(`
  type polaris_conf_d_t;
`)

# confd-startup.sh calls confd_cmd to get_phase and other cases
# that utilities under confd label connects to confd
polaris_rpc_conf_d_ipc_connect(polaris_conf_d_t)

#confd needs communicate over HTTP
corenet_tcp_bind_http_port(polaris_conf_d_t)

```

```

# complex_main (port 5000) is used by apache
corenet_udp_bind_complex_main_port(polaris_conf_d_t)

corenet_tcp_bind_generic_node(polaris_conf_d_t)
allow polaris_conf_d_t self:tcp_socket { getattr getopt setopt bind create listen accept connect read write };

corenet_udp_bind_generic_node(polaris_conf_d_t)
allow polaris_conf_d_t self:udp_socket { bind connect create getattr getopt setopt };
corenet_udp_bind_polaris_conf_d_snmp_traps_port(polaris_conf_d_t)

logging_send_syslog_msg(polaris_conf_d_t)

polaris_chasfs_manage(polaris_conf_d_t)
polaris_btrace_data_manage(polaris_conf_d_t)
polaris_cpld_read(polaris_conf_d_t)
polaris_boot_tmp_read(polaris_conf_d_t)
polaris_rmonbifo_tmp_read(polaris_conf_d_t)

# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_conf_d_t)

# confd-startup.sh process is shell script need permission to execute shell
# and variety of small util commands under bin_t
corecmd_exec_shell(polaris_conf_d_t)
corecmd_exec_bin(polaris_conf_d_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_conf_d_t)

# confdexec needs access to /sys/devices/system/cpu/online
dev_read_sysfs(polaris_conf_d_t)

allow polaris_conf_d_t self:capability { net_admin sys_resource };

# allow read permissions for /etc/hosts file
sysnet_read_config(polaris_conf_d_t)

# allow read permissions for /var/run/netns/8
fs_read_nsfs_files(polaris_conf_d_t)

# work with /var/confd0/ files
type polaris_conf_d_var_t;
files_tmp_file(polaris_conf_d_var_t)
polaris_conf_d_var_filetrans(polaris_conf_d_t, dir, "confd0")
manage_files_pattern(polaris_conf_d_t, polaris_conf_d_var_t, polaris_conf_d_var_t)
manage_lnk_files_pattern(polaris_conf_d_t, polaris_conf_d_var_t, polaris_conf_d_var_t)
manage_dirs_pattern(polaris_conf_d_t, polaris_conf_d_var_t, polaris_conf_d_var_t)

```

```

# erlang calls efile_fileinfo function (./erts/emulator/drivers/unix/unix_efile.c)
# root directory. Inside of the function code calls 'access' function that check
# access permission for R_OK and W_OK. W_OK triggers denial warning. Instead of
# granting access let's mark it as dontaudit. Erlang will be fine with this
files_dontaudit_write_root_dirs(polaris_conf_d_t)

# deals with /dev/shm/confd files (shared memory and pid)
type polaris_conf_d_shm_t;
files_tmpfs_file(polaris_conf_d_shm_t)

# confd-startup.sh modifies confd.conf which is under polaris_conf_d_var_t label
# sed -i /CONFID_FXS_CISCO_AUTOGEN_EWLC/d /var/confd0/confd.conf
allow polaris_conf_d_t self:process setfscreate;

type polaris_conf_d_ndbutl_lock_t;
files_lock_file(polaris_conf_d_ndbutl_lock_t)

#####
# confd mmap_schema utility runs from systemd unit under polaris_conf_d_t label
#####
polaris_conf_d_shm_setup(polaris_conf_d_t)
# create ndbutl directory under /var/lock
polaris_conf_d_ndbutl_create(polaris_conf_d_t)

# Allow access to /crashinfo
polaris_disk_crashinfo_getattr(polaris_conf_d_t)

optional_policy(
# confd-startup.sh on nyquist makes ls /tmp/ufs/crashinfo
polaris_ncd_tmp_read(polaris_conf_d_t)
)

# confd-startup.sh reads /proc/cmdline
kernel_read_system_state(polaris_conf_d_t)

# LOOK AT ME allow mapping of low addresses, that could be exploited
# need to understand why; unfortunately confd symbols are not decodable
# need to ask tail-f guys
ifdef(^tsn_platform',`
domain_mmap_low_uncond(polaris_conf_d_t)
gen_require(
    type polaris_conf_d_cli_t;
)
domain_mmap_low_uncond(polaris_conf_d_cli_t)
)
ifdef(^quake_platform',`
domain_mmap_low_uncond(polaris_conf_d_t)

```

```

')

polaris_mmap_schema_domtrans(polaris_confd_t)

# mmap_schema process policy
gen_require(
    type polaris_mmap_schema_t;
)

polaris_btrace_data_manage(polaris_mmap_schema_t)
polaris_chasfs_read(polaris_mmap_schema_t)
polaris_cpld_read(polaris_mmap_schema_t)
polaris_flashlib_read(polaris_mmap_schema_t)

polaris_db_tdlldb_dir_use(polaris_mmap_schema_t)

polaris_confd_ndbutil_create(polaris_mmap_schema_t)
polaris_confd_shm_setup(polaris_mmap_schema_t)

# connects to config mmap_schema is not TDL process, let
# grant explicit permission to access corresponding port
polaris_ripc_confd_ipc_connect(polaris_mmap_schema_t)
allow polaris_mmap_schema_t self:tcp_socket { connect create setopt };
polaris_socketat_nsfs_read(polaris_mmap_schema_t)

allow polaris_mmap_schema_t self:capability dac_override;

polaris_tdlresolve_read(polaris_mmap_schema_t)
polaris_confd_read(polaris_mmap_schema_t)

polaris_ndbmand_ndbutil_manage(polaris_mmap_schema_t)

optional_policy(
    polaris_gnmib_ndbutil_lock(polaris_mmap_schema_t, ".l.schema_use.gnmib")
)

type polaris_confd_tmp_t;
files_tmp_file(polaris_confd_tmp_t)
polaris_systemd_tmpfiles_tmp_filetrans(polaris_confd_tmp_t, dir, "confd")
files_tmp_filetrans(polaris_confd_t, polaris_confd_tmp_t, dir, "confd")
manage_files_pattern(polaris_confd_t, tmp_t, polaris_confd_tmp_t)
manage_fifo_files_pattern(polaris_confd_t, tmp_t, polaris_confd_tmp_t)
manage_dirs_pattern(polaris_confd_t, tmp_t, polaris_confd_tmp_t)

# posix_pathconf called from get_tmpdir calls starvfs over /tmp
fs_getattr_tmpfs(polaris_confd_t)

# dmi_ports_fetch that runs under confd_t reads global.service.conf

```

```

polaris_tdlresolve_read(polaris_confd_t)
confd_exec_dmi_ports_fetch(polaris_confd_t)

# confd-startup script reads /tmp/dmi.ds_config if it exists
polaris_psd_tmp_read(polaris_confd_t)

# vip-confd-startup.sh related
# figure out BOOT_ROLE in install_util.sh
polaris_read_packages_conf(polaris_confd_t)
# touch /bootflash/sdwan/day0_oper.xml
allow polaris_confd_t self:capability dac_override;
polaris_bootflash_manage(polaris_confd_t)
# /usr/bin/sw syncddb call uuidgen
dev_read_rand(polaris_confd_t)

polaris_dmiauthd_tmp_manage(polaris_confd_t)

# PLEASE LOOK AT ME: overloaded use of /bootflash/.installer and
# /bootflash/.sdwaninstaller directories. In controller mode cedge code loopback
# mounts /bootflash/.sdwaninstallerfs file onto /bootflash/.sdwaninstaller and
# creates /bootflash/.installer symbolic link to it. As result effective
# /bootflash/.installer carries two meaning: used by polaris install infra for
# regular install operations, and keep persistent state in controller mode. For
# now /bootflash/.sdwaninstallerfs was forced to be mounted with
# polaris_disk_install_t label, so installer policy would be happy, but confd
# writes into it through /var/confd0 which is symbolic link to
# /bootflash/.installer/images/pkg_boot_17.3.01/confd0 that means we need to
# grant polaris_disk_install_manage to confd which is not good thing.
# It would be much better if two different directories would be used.
polaris_disk_install_manage(polaris_confd_t)

# /var/log/confd handling
type polaris_confd_var_log_t;
logging_log_file(polaris_confd_var_log_t)
polaris_confd_var_log_manage(polaris_confd_t)

# /etc/version handling
type polaris_confd_etc_t;
files_config_file(polaris_confd_etc_t)
files_etc_filetrans(polaris_confd_t, polaris_confd_etc_t, file, "version")
gen_require(
    type etc_t;
)
manage_files_pattern(polaris_confd_t, etc_t, polaris_confd_etc_t)

# "/usr/bin/sw syncddb" calls "confd_cmd -p 3010 -o -c "delete /software""
# that invokes /usr/binos/conf/install_assist.sh
polaris_install_engine_domtrans(polaris_confd_t)

```

```

# confd calls /usr/bin/sw that creates temp files in /tmp/cedge_sw_log
# since it runs under same domain make sure that cedge_sw_log gets
# right label
files_tmp_filetrans(polaris_conf_d_t, polaris_conf_d_tmp_t, dir, "cedge_sw_log")

# /tmp/confd_booted created by vip-confd-start
files_tmp_filetrans(polaris_conf_d_t, polaris_conf_d_tmp_t, file, "cedge_booted")

# runs flashutils to read rommon variables
polaris_flashlib_read(polaris_conf_d_t)

allow polaris_conf_d_t self:capability fowner;

optional_policy(`
# work with /tmp/.econfd2sysmgr-ipc
polaris_econfd2sysmgr_tmp_manage(polaris_conf_d_t)
`)

# confdexec calls dmidecode to get bios-vendor
dmidecode_domtrans(polaris_conf_d_t)

optional_policy(`
# polaris_sw.sh called in confd context accesses
# /etc/viptela/controller_version
polaris_cedge_etc_manage(polaris_conf_d_t)
`)

# PLEASE LOOK AT ME confd tcp ports are supposed to be handle
# through TDL pseudo services, that one it not
corenet_tcp_connect_polaris_conf_d_maapi_port(polaris_conf_d_t)

# confd starts cmdptywrapper utility through erl_child_setup
# that allocates free pty device using operations on /dev/ptms
allow polaris_conf_d_t self:capability { fsetid setgid };
term_getattr_pty_fs(polaris_conf_d_t)
term_setattr_generic_ptys(polaris_conf_d_t)
term_use_generic_ptys(polaris_conf_d_t)
term_use_ptmx(polaris_conf_d_t)

# uses nice utility to start misc scripts
allow polaris_conf_d_t self:process setsched;

# allow netconf_callhome to execute ncsshd under ncsshd domain
polaris_ncsshd_mgmt_domtrans(polaris_conf_d_t)

# allow DmiAuth spawned by confd to access /tmp/.DmiAuth.socket
polaris_dmi_dmiauthd_dgram_send(polaris_conf_d_t)

```

```

# the default port for NETCONF Call Home (SSH) is 4334,
# and it is configurable by users
corenet_tcp_connect_all_ports(polaris_conf_d_t)
# by default the port is selected by system, and it is configurable by users
corenet_tcp_bind_generic_port(polaris_conf_d_t)
# netconf_callhome may create vrf-based netns on demand
polaris_vrf_netns_manage(polaris_conf_d_t)

# cmdwrapper utility that started by confd calls xstat
allow polaris_conf_d_t self:capability setuid;

# label for /tmp/vconfd temporary files created by binos/viptela/vconfd/*.sh
# scripts created from viptela/vconfd/vconfd_script_cli_session.sh
type polaris_vconfd_tmp_t;
files_tmp_file(polaris_vconfd_tmp_t)
# confd writes /tmp/vconfd/USID.XXX and /tmp/vconfd/THANDLE.YYY files
polaris_vconfd_tmp_manage(polaris_conf_d_t)

# label for /tmp/confd_cli temporary files created by execute_conf_d_cli.sh
type polaris_conf_d_cli_tmp_t;
files_tmp_file(polaris_conf_d_cli_tmp_t)

# execute_conf_d_cli creates /tmp/sh-thd moved to /tmp/confd_cli
files_tmp_filetrans({ polaris_conf_d_t polaris_conf_d_cli_t}, polaris_conf_d_cli_tmp_t, dir, "confd_cli")

# execute_conf_d_cli.sh script policy
polaris_utility_domain_template(conf_d_cli)
polaris_bexecute_domain(polaris_conf_d_cli_t, polaris_conf_d_cli_exec_t)

polaris_chasfs_read(polaris_conf_d_cli_t)
corecmd_exec_shell(polaris_conf_d_t)
corecmd_exec_bin(polaris_conf_d_cli_t)
auth_use_nsswitch(polaris_conf_d_cli_t)
# bash get_tmpdir statfs /tmp directory
fs_getattr_tmpfs(polaris_conf_d_cli_t)

polaris_conf_d_cli_tmp_manage(polaris_conf_d_cli_t)
polaris_vconfd_tmp_manage(polaris_conf_d_cli_t)
telnet_use_ptys(polaris_conf_d_cli_t)

polaris_ripc_conf_d_ipc_connect(polaris_conf_d_cli_t)

# execute_conf_d_cli.sh -a -g PRIV00 runs grep over /bootflash/sdwan/.init_stage
polaris_bootflash_read(polaris_conf_d_cli_t)

# execute_conf_d_cli.sh writes to "pipe:[24719894]"
polaris_dmi_ncsshd_fwd_use_fifo(polaris_conf_d_cli_t)

```

```

# allow /usr/binos/conf/bexecute.sh for tcp_socket access
# due to "/bin/sh /usr/binos/conf/mcp_chvrf.sh eobc
# /usr/binos/conf/bexecute.sh -c /bin/mcp_pkg_wrap rp_daemons
# /usr/binos/conf/execute_co"
allow polaris_confcli_t polaris_dmi_ncsshd_fwd_t:tcp_socket ioctl;
#=====
# admin-tech : scripts in binos/viptela/vconfd/*admin_tech*.sh
# Invocation triggered here:
# viptela/vconfd/viptela-actions.yang: tailf:exec "vconfd_script_admin_tech.sh"
#=====
polaris_vconfd_domain_template(admin_tech)

# /bin/bash /usr/binos/conf/bshell.sh -S -c
# show platform hardware qfp active infrastructure shared-memory
# process cpp-control-pro....
polaris_bexecute_domtrans(polaris_admin_tech_t)

# admin-tech launches "ps" via scripts
domain_read_all_domains_state(polaris_admin_tech_t)

# See tracelogs accessed by vconfd_script_polaris_admin_tech_child.sh
polaris_btrace_data_manage_all(polaris_admin_tech_t)

# various utilities like "find", "memaudit", etc needs this
files_getattr_all_files(polaris_admin_tech_t)
files_getattr_all_dirs(polaris_admin_tech_t)
fs_getattr_all_fs(polaris_admin_tech_t)
files_read_all_files(polaris_admin_tech_t)

# '/bin/bash /usr/bin/memaudit' needs access to /proc/kmsg, /proc/mdstat, etc
dev_getattr_mtrr_dev(polaris_admin_tech_t)
kernel_read_all_proc(polaris_admin_tech_t)
dev_getattr_loop_control(polaris_admin_tech_t)

# infra/memaudit/memaudit uses dmesg
dmesg_domtrans(polaris_admin_tech_t)
gen_require(
    type dmesg_t;
)
polaris_conf_unix_stream_stdio_use(dmesg_t)

# infra/memaudit/memaudit uses mount
mount_domtrans(polaris_admin_tech_t)

# infra/memaudit/memaudit uses fdisk
fstools_domtrans(polaris_admin_tech_t)
polaris_nvram_read(polaris_admin_tech_t)
polaris_nvram_getattr(polaris_admin_tech_t)

```

```

# infra/memaudit/memaudit writes to /proc/sys/vm/drop_caches
kernel_rw_vm_sysctls(polaris_admin_tech_t)

# memaudit and smap needs 'getattr', 'search' on sysctl_irq_t:dir
kernel_read_irq_sysctls(polaris_admin_tech_t)

# du -b -s /tmp/cc /tmp/rp /tmp/fp
files_getattr_all_sockets(polaris_admin_tech_t)
files_getattr_all_pipes(polaris_admin_tech_t)

# df -Th -BM needs access to /run/netns/2
fs_getattr_nsfs_files(polaris_admin_tech_t)

# ls /tmp/ufs//harddisk
# maapi --clcmd --get-io --no-hidden show configuration commit list
corecmd_exec_bin(polaris_admin_tech_t)

# bash vconfd_script_admin_tech.sh -u root -c cli executes:
# 1. map on /etc/passwd
auth_map_passwd(polaris_admin_tech_t)
# 2. hostname
hostname_exec(polaris_admin_tech_t)
# 3. journalctl
journalctl_domtrans(polaris_admin_tech_t)

# journalctl writes to /tmp/vm4-bootuplog-20200903-175223-UTC.log
# see vconfd_script_polaris_admin_tech_child.sh
gen_require(
    type journalctl_t;
)
manage_files_pattern(journalctl_t, polaris_admin_tech_tmp_t, polaris_admin_tech_tmp_t)
polaris_confd_unix_stream_stdio_use(journalctl_t)

# admin_tech reads /tmp/chassis/cpld/chasfs/board_vtype on crankshaft(sdwan)
polaris_chasfs_read(polaris_admin_tech_t)

# find -H /misc/scratch -name MEMORY_LOG_*.text
# memaudit writes to /bootflash/MEMORY_LOG_2020-07-28-01:32:11.text
# We also have 'mv -Z /bootflash/admintech /var/tech/ios'
# admin_tech watches /tmp/chassis/local/rp/chasfs/etc/ios_admintech_done
type polaris_admin_tech_data_t;
polaris_disk_type(polaris_admin_tech_data_t)
polaris_bootflash_filetrans(polaris_admin_tech_t, polaris_admin_tech_data_t, dir)
polaris_bootflash_filetrans(polaris_admin_tech_t, polaris_admin_tech_data_t, file)
polaris_admin_tech_data_manage(polaris_admin_tech_t)

# sdwan_tech_support.sh -o /var/tech/binos; work with /var/tech/ files

```

```

type polaris_admin_tech_var_t;
files_tmp_file(polaris_admin_tech_var_t)
files_var_filetrans(polaris_admin_tech_t, polaris_admin_tech_var_t, dir, "tech")
manage_files_pattern(polaris_admin_tech_t, polaris_admin_tech_var_t, polaris_admin_tech_var_t)
manage_dirs_pattern(polaris_admin_tech_t, polaris_admin_tech_var_t, polaris_admin_tech_var_t)

# vconfd_script_polaris_admin_tech.sh invokes vlog "Requested admin-tech initiated."
# vlog is implemented in viptela/Utils/vlog using logger; that needs
# - ceate/connect unix_dgram_socket of type polaris_admin_tech_t
# - read from devtmpfs of type devlog_t
# - write to sock_file of type devlog_t
# - sendto path="/run/systemd/journal/dev-log" of type unix_dgram_socket
logging_send_syslog_msg(polaris_admin_tech_t)

# maapi --cli get paginate: this performs connect to confd socket
polaris_rpc_conf_d_ipc_connect(polaris_admin_tech_t)

# reads /tmp/chassis/cpld/chasfs/board_vtype
# on c8kv cpld is at /sys/bus/platform/devices/cpld which has sysfs_t LABEL
polaris_cpld_read(polaris_admin_tech_t)

# handle various files created under /tmp
type polaris_admin_tech_tmp_t;
files_tmp_file(polaris_admin_tech_tmp_t)
files_tmp_filetrans(polaris_admin_tech_t, polaris_admin_tech_tmp_t, file)
manage_files_pattern(polaris_admin_tech_t, polaris_admin_tech_tmp_t, polaris_admin_tech_tmp_t)

# As part of admin-tech generation on cEdges, vconfd_script_polaris_admin_tech.sh
# invokes vconfd_script_polaris_admin_tech_child.sh which in turn invokes the
# script sdwan_tech_support.sh. The sdwan_tech_support.sh passes the file
# /tmp/sdwan_tech_support_command_file_out.txt to a bshell instance. The bshell
# instance does open operation on the file. So bshell needs open allow
# policy for /tmp/sdwan_tech_support_command_file_out.txt
gen_require(
    type polaris_bshell_t;
)
allow polaris_bshell_t polaris_admin_tech_tmp_t:file open;

# maapi needs this.
allow polaris_admin_tech_t self:tcp_socket { getopt setopt create connect read write };

# tar --ignore-failed-read -czf /home/vmanage-admin/vm4-20200903-055157-admin-tech.tar.gz
# /tmp/fp/trace/cpp_cp_F0-0_TAN.20041_0.20
allow polaris_admin_tech_t self:capability dac_override;

# awk /^Shared/ { v += $2 } END { print v } /proc/6384/smmaps
allow polaris_admin_tech_t self:capability sys_ptrace;

```

```

# 'top -n1 -b' creates /.config dir
# TODO/LOOKATME: selinux team to review handling of this issue in a
# common way for invoking top
allow polaris_admin_tech_t root_t:dir create;

# "show installerfs" is invoked by vconfd_script_admin_tech_common.sh
# this invokes vconfd_script_show_installerfs.sh via confd
# let's execute this under install_show domain
polaris_install_show_domtrans(polaris_conf_d_t)

# create_bootflash_snapshot() performs 'ls -l /bootflash/.installer'
polaris_disk_install_read(polaris_admin_tech_t)

# vconfd_script_polaris_admin_tech_child.sh
# mv /bootflash/admintech /var/tech/ios
allow polaris_admin_tech_t self:process setfscreate;

# rm -rf $collated_ra (collated_log_*)

#Nutella-XE - Vedge image install
#/bin/sh /tmp/sw/rp/0/0/rp_security/mount/bin/sw syncddb
#mount -t vfat /dev/mmcblk0gp0p1 /gpp
mount_domtrans(polaris_conf_d_t)

#df /bootflash
fstools_domtrans(polaris_conf_d_t)

#Nutella-XE - Vedge image activate
#/usr/bin/flashutil --command unsetvar --name MIG_INT_STATE
polaris_flashlib_write(polaris_conf_d_t)

# permit comm="ps" to "getattr" on dev="devtmpfs" for polaris_admin_tech_t
term_getattr_unallocated_ttys(polaris_admin_tech_t)

# permit to access polaris_proc_rmonbifo_t by
# /usr/bin/vconfd_script_admin_tech.sh
polaris_proc_rmonbifo_read(polaris_admin_tech_t)

# permit to access/unlink /bootflash by polaris_admin_tech_t
polaris_bootflash_manage(polaris_admin_tech_t)

# vconfd_script_admin_tech.sh executes 'top -n1 -b' which creates /.config dir
gen_require(
    type admin_home_t;
)
allow polaris_admin_tech_t admin_home_t:dir { add_name create write };

# vconfd_script_admin_tech.sh sources vconfd_script_cli_session.sh and calls

```

```

# start_cli_session() which writes to /tmp/vconfd/USID.XXX,
# /tmp/vconfd/THANDLE.YYY and /tmp/vconfd/start_cli.XXXXXXXXXXX
polaris_vconfd_tmp_manage(polaris_admin_tech_t)

# work with "/tmp/fp/pvp/work/inot_fifo"
polaris_pvp_stdin_read(polaris_admin_tech_t)

# work with "/tmp/fp/trace/fifo/pvp_sh%fp_0_0_22607_fifo"
polaris_use_btrace_fifo(polaris_admin_tech_t)

# access to tunnel interface from snapshot_cdb()
corenet_rw_tun_tap_dev(polaris_confd_t)

# access to /tmp/bootstrap/sdwan/ciscosdwan_cloud_init.cfg
init_read_script_tmp_files(polaris_confd_t)

# "vconfd_notifier security-clear-installed-cert" reads
# /var/run/netns/default which is symlinked to /proc/1/ns/net
polaris_cedge_reset_ns(polaris_confd_t)

# allow /usr/binos/conf/execute_confd_cli.sh to access polaris_disk_install_t
polaris_disk_install_read(polaris_confd_cli_t)

# vconfd script ends up cleaning core files, most likely its
# vconfd_script_polaris_admin_tech_child.sh, so it needs read/write
# permission to polaris_core_file_t files.
polaris_core_file_manage(polaris_admin_tech_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisconfd.te
No license file was found, but licenses were detected in source scan.

#
# OWNERS - Code Ownership
#
# For information on the purpose and format of this file see:
# https://polaris-git.cisco.com/csg/polaris/wiki/Code-Reviews
#
# Copyright (c) 2019-2021 by Cisco Systems, Inc.
# All rights reserved.
#

* @csg/polaris-selinux-dev

#iox team related files
polariscontainer* @csg/polaris-selinux-dev @csg/iox-selinux
polariscaf* @csg/polaris-selinux-dev @csg/iox-selinux
polarisgsdrp* @csg/polaris-selinux-dev @csg/iox-selinux

```

polarisioxman\* @csg/polaris-selinux-dev @csg/iox-selinux  
polarisvman\* @csg/polaris-selinux-dev @csg/iox-selinux

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/OWNERS

No license file was found, but licenses were detected in source scan.

```
#  
# March 2017, Victor Kamensky  
#  
# Copyright (c) 2016-2019 by Cisco Systems, Inc.  
# All rights reserved  
#  
  
## <summary>Polaris lm Policy Rules.</summary>
```

```
#####  
## <summary>  
##   Read files of type polaris_lm_tmp_t (e.g., /tmp/iosd_level)  
## </summary>  
## <param name="domain">  
##   <summary>  
##     Domain allowed access.  
##   </summary>  
## </param>  
#  
interface(`polaris_lm_tmp_read`,  
    gen_require(`  
        type polaris_lm_tmp_t;  
    `)  
    read_files_pattern($1, polaris_lm_tmp_t, polaris_lm_tmp_t)  
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislm.if

No license file was found, but licenses were detected in source scan.

```
#  
# August 2017, Shawn Lu  
#  
# Copyright (c) 2017-2019 by Cisco Systems, Inc.  
# All rights reserved  
#  
  
## <summary>Polaris nmspd Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisnmspd.if

No license file was found, but licenses were detected in source scan.

```
dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl
define(`polaris_database_aux',`dnl
#####
## <summary>
## Use $2 database.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <infoflow type="none"/>
#
interface(`polaris_db_tdlldb_$1_use",`
gen_require(
    type $2;
)

    polaris_tdlldb_use(dollarone, $2, $3)
)
)

define(`polaris_database',`dnl
polaris_database_aux(database_stem($1), database_label($1), $1)dnl
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_database\_db\_if.m4

No license file was found, but licenses were detected in source scan.

```
#
# March 2017, Victor Kamensky
#
# Copyright (c) 2016-2021 by Cisco Systems, Inc.
# All rights reserved
#

```

```
policy_module(polarishm, 1.0);
```

```

gen_require(
    type polaris_hm_t;
)

polaris_btrace_data_manage(polaris_hm_t)
polaris_chasfs_manage(polaris_hm_t)
polaris_tdlresolve_read(polaris_hm_t)
polaris_tdlldb_list_dirs(polaris_hm_t)
polaris_cpld_read(polaris_hm_t)
polaris_lua_read(polaris_hm_t)
polaris_flashlib_read(polaris_hm_t)

polaris_ripc_sman_ui_serv_connect(polaris_hm_t)

polaris_db_tdlldb_dir_use(polaris_hm_t)

files_getattr_all_files(polaris_hm_t)
files_getattr_all_dirs(polaris_hm_t)
gen_require(
    attribute non_security_file_type;
)
allow polaris_hm_t { non_security_file_type } :dir list_dir_perms;

# hman need to read proc for all processes to collect CPU
# utilization information
domain_read_all_domains_state(polaris_hm_t)
domain_signull_all_domains(polaris_hm_t)

kernel_read_system_state(polaris_hm_t)

# hman needs to run "df /dev/shm" command
corecmd_exec_bin(polaris_hm_t)
corecmd_exec_shell(polaris_hm_t)

# hman needs to operate on all maroon files
polaris_maroon_data_manage_all(polaris_hm_t)

# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_hm_t)

fs_getattr_tmpfs(polaris_hm_t)

# work with /tmp files (/tmp/myhostname)
type polaris_hm_tmp_t;
files_tmp_file(polaris_hm_tmp_t)
manage_files_pattern(polaris_hm_t, tmp_t, polaris_hm_tmp_t)
files_tmp_filetrans(polaris_hm_t, polaris_hm_tmp_t, file, "myhostname")

```

```

allow polaris_hm_t self:capability { chown fsetid dac_override kill sys_resource sys_ptrace };
allow polaris_hm_t self:process setsched;
allow polaris_hm_t self:unix_dgram_socket create;
allow polaris_hm_t self:cap_userns { kill sys_ptrace };

polaris_boot_tmp_read(polaris_hm_t)

# Allow write to flash. Needed for usb disable feature
ifdef(`ngwc_family',`
polaris_flashlib_write(polaris_hm_t)
')

# "show platform software mount RP active" command needs attributes of
# all file systems
fs_getattr_all_fs(polaris_hm_t)
# above show command accesses /var/run/netns/2
fs_read_nsfs_files(polaris_hm_t)
# reads /scratch link which is labeled as polaris_disk_bootflash_t
polaris_disk_bootflash_read_lnk(polaris_hm_t)
polaris_disk_harddisk_read_lnk(polaris_hm_t)

# needed for "show platform software bound-uds RP active"
kernel_read_network_state(polaris_hm_t)

# "show rom-monitor R0" needs content of /proc/rmonbifo/bootver;
# please refer to hman_ui.tpp file
polaris_proc_rmonbifo_read(polaris_hm_t)

# "show plat soft yang-management process r0" invokes hm_show_yang_proc_cb;
# "show plat soft iox-service" invokes hm_iox_srvc_show_cb;
# They invoke "ps -C" which needs access to /sys/devices/system/cpu/online
# TODO: should we replace system() with something like hm_get_procs_with_name_running
dev_read_sysfs(polaris_hm_t)
# "show platform software yang-management process state" invokes /bin/mcp_pkg_wrap,
# which sources /tmp/sw/boot/rmonbifo/env_var.sh
polaris_rmonbifo_tmp_read(polaris_hm_t)
# show iox-service requires reading of libvirt_ver of created under CAF context
optional_policy(`
polaris_caf_tmp_files_read(polaris_hm_t)
')
# hardcoded policy for hm to df, per Victor
optional_policy(`
gen_require(`
type polaris_iosd_portal_dmi_lipc_t;
type polaris_iosd_portal_app_lipc_t;
')
allow polaris_hm_t { polaris_iosd_portal_dmi_lipc_t polaris_iosd_portal_app_lipc_t }:sock_file getattr;
')

```

```

# during "show version installed" command
# "grep -q srdriver /tmp/sw/rp/local/0/rp_base/iso" which is link to the universal image
polaris_bootflash_read(polaris_hm_t)
# this is for calcsha.sh (invoked by the command above) but might work for others too
polaris_install_engine_domtrans(polaris_hm_t)
# this if for hman to read and delete /tmp/version.info created by calcsha.sh in prev context type
polaris_install_tmp_read(polaris_hm_t)
gen_require(
    type polaris_install_tmp_t;
)
allow polaris_hm_t polaris_install_tmp_t:file unlink;

# need open, read on /bootflash/packages.conf (grep sha1sum: /tmp/packages.conf)
polaris_read_packages_conf(polaris_hm_t)

# This is created for hman to grant it access to /bootflash/topnmemuse
polaris_bootflash_manage(polaris_hm_t)

# read /tmp/pkg_summary.txt file
polaris_pkg_summary_tmp_read(polaris_hm_t)

polaris_zram_getattr(polaris_hm_t)

optional_policy(
    polaris_ssd_auth_domtrans(polaris_hm_t)
)

optional_policy(
    polaris_ssd_unmount_domtrans(polaris_hm_t)
)

optional_policy(
    polaris_confdomtrans(polaris_hm_t)
)

#####
# show platform software process slot R0 monitor
# mcp_monitor_process_batchmode.sh
# /bin/sh /usr/binos/conf/bexec.sh -c /usr/binos/conf/mcp_monitor_process_batchmode.sh -n 1 -d 3 -l 0
#####

polaris_utility_domain_template(monitor_process)

polaris_bexecute_domtrans(polaris_hm_t)
polaris_bexecute_domain(polaris_monitor_process_t, polaris_monitor_process_exec_t)

# mcp_monitor_process_batchmode.sh calls "top" command

```

```

# "top" needs read/getattr access of various files in the system
domain_read_all_domains_state(polaris_monitor_process_t)

# "top" needs access to /sys/devices/system/cpu/online, etc
dev_read_sysfs(polaris_monitor_process_t)

# "top" need read access to /proc/meminfo, /proc/stat
kernel_read_system_state(polaris_monitor_process_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_monitor_process_t)

# need write/ioctl/getattr access for pipes like "pipe:[118396]"
polaris_hman_use_fifo(polaris_monitor_process_t)

corecmd_exec_bin(polaris_monitor_process_t)

gen_require(
    type admin_home_t;
)
#top -b -n3 -d3 needs permission to create dir /.config ,write
#to files and add files
allow polaris_monitor_process_t admin_home_t:dir { add_name create write };
allow polaris_monitor_process_t self:capability sys_ptrace;
#####

#####
# pkg_summary.sh : show version R0 installed
# /bin/bash /usr/binos/conf/pkg_summary.sh -o /tmp/pkg_summary.txt -d model -P
#####

polaris_utility_domain_template(pkg_summary)

polaris_pkg_summary_domtrans(polaris_hm_t)

# it executes find /tmp/sw -maxdepth 5 -mindepth 5 -name mount
files_getattr_all_dirs(polaris_pkg_summary_t)
files_getattr_all_files(polaris_pkg_summary_t)
files_read_all_dirs_except(polaris_pkg_summary_t)

polaris_chasfs_read(polaris_pkg_summary_t)
polaris_cpld_read(polaris_pkg_summary_t)
polaris_use_btrace_fifo(polaris_pkg_summary_t)
polaris_rmonbifo_tmp_read(polaris_pkg_summary_t)
polaris_btrace_data_manage(polaris_pkg_summary_t)
polaris_boot_tmp_read(polaris_pkg_summary_t)

# need open, read on /bootflash/debug.conf

```

```

polaris_read_debug_conf(polaris_pkg_summary_t)

polaris_read_packages_conf(polaris_pkg_summary_t)

allow polaris_pkg_summary_t self:capability sys_resource;

corecmd_exec_bin(polaris_pkg_summary_t)

auth_use_nsswitch(polaris_pkg_summary_t)

polaris_disk_crashinfo_getattr(polaris_pkg_summary_t)

# read /proc/cmdline
kernel_read_system_state(polaris_pkg_summary_t)

# handle /tmp/pkg_summary.txt file
type polaris_pkg_summary_tmp_t;
files_tmp_file(polaris_pkg_summary_tmp_t)
files_tmp_filetrans(polaris_pkg_summary_t, polaris_pkg_summary_tmp_t, file)
manage_files_pattern(polaris_pkg_summary_t, polaris_pkg_summary_tmp_t, polaris_pkg_summary_tmp_t)

#####

#####

# pkg_to_tree.sh : Generates a software tree based on a provisioning file.
# /bin/bash /usr/binos/conf/pkg_to_tree.sh -c /tmp/packages.conf
# -t /tmp/show_patch_provision_temp -p /tmp/sw/isos
# -r /tmp/show_provision_temp -a -q
#####

polaris_utility_domain_template(pkg_to_tree)

gen_require(
    type unconfined_service_t;
)
polaris_pkg_to_tree_domtrans({unconfined_service_t polaris_hm_t})

files_getattr_all_files(polaris_pkg_to_tree_t)
polaris_harddisk_read(polaris_pkg_to_tree_t)
polaris_cpuld_read(polaris_pkg_to_tree_t)
polaris_use_btrace_fifo(polaris_pkg_to_tree_t)
polaris_rmonbifo_tmp_read(polaris_pkg_to_tree_t)
polaris_btrace_data_manage(polaris_pkg_to_tree_t)
polaris_boot_tmp_read(polaris_pkg_to_tree_t)
polaris_patch_data_manage(polaris_pkg_to_tree_t)

# if being executed on other node, telnet /dev/ptsN might be used
# as stdin/stdout

```

```

telnet_use_ptys(polaris_pkg_to_tree_t)

# pkg_to_tree.sh creates/deletes directories and files under
# /tmp/show_provision_temp
type polaris_show_provision_tmp_t;
files_tmp_file(polaris_show_provision_tmp_t)
polaris_show_provision_temp_manage(polaris_pkg_to_tree_t)

# pkg_to_tree.sh verifies each package as it is mounted
polaris_code_verify_domtrans(polaris_pkg_to_tree_t)

corecmd_exec_bin(polaris_pkg_to_tree_t)

polaris_disk_crashinfo_getattr(polaris_pkg_to_tree_t)

# manage the /tmp/lf symbolic link
type polaris_pkg_to_tree_tmp_t;
files_tmp_file(polaris_pkg_to_tree_tmp_t)
files_tmp_filetrans(polaris_pkg_to_tree_t, polaris_pkg_to_tree_tmp_t, lnk_file, "lf")
manage_lnk_files_pattern(polaris_pkg_to_tree_t, polaris_pkg_to_tree_tmp_t, polaris_pkg_to_tree_tmp_t)

# permit pkg_to_tree.sh mounting to use conf/pkg files in bootflash
polaris_bootflash_read(polaris_pkg_to_tree_t)
polaris_disk_bootflash_search(polaris_pkg_to_tree_t)

# we want to read the existing mounts in chasfs
polaris_chasfs_read(polaris_pkg_to_tree_t)

# pkg_to_tree.sh interfaces with installer data, including ISSU files
polaris_install_tmp_log_write(polaris_pkg_to_tree_t)
polaris_sw_data_manage(polaris_pkg_to_tree_t)
polaris_read_packages_conf(polaris_pkg_to_tree_t)
polaris_issu_tmp_files_manage(polaris_pkg_to_tree_t)
polaris_install_tmp_manage(polaris_pkg_to_tree_t)

# allow pkg_to_tree.sh to do the loopback mounts of packages and manage
# mount links in tmp. This includes mapping mounted passwd file and
# mounting sysfs. This is also needed to mount /mnt/sd3/iox_alt_hdd.dsk
mount_domtrans(polaris_pkg_to_tree_t)
auth_map_passwd(polaris_pkg_to_tree_t)
dev_list_sysfs(polaris_pkg_to_tree_t)
allow polaris_pkg_to_tree_t sysfs_t:file { getattr open read };
allow polaris_pkg_to_tree_t tmp_t:lnk_file { create rename unlink };

# when expanding/installing super images, pkg_to_tree uses install_engine_exec_t
# utilities like issu_check
polaris_install_engine_domtrans(polaris_pkg_to_tree_t)

```

```

#####
# misc hman cli(s)
#####

# hman needs access to /bootflash/.issu_loc_lock
polaris_issu_files_manage(polaris_hm_t)

# hman process creates/deletes directories and files under
# /tmp/show_provision_temp
polaris_show_provision_temp_manage(polaris_hm_t)

# signal send during show platform software process slot R0 monitor
polaris_send_signal_to_bexecute(polaris_hm_t)

polaris_dyncfg_tmp_read(polaris_hm_t)

polaris_disk_crashinfo_getattr(polaris_hm_t)

# setting up /dev/ttyS0 speed from hman_handle_console_baud_rate_change
term_use_unallocated_ttys(polaris_hm_t)

# allow to send message to /dev/log
logging_send_syslog_msg(polaris_hm_t)

# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_hm_t)

# hman starts agetty-iosd.service in case of nyquist stack
getty_systemctl(polaris_hm_t)

# This block is policies for "sh pla so filesystem bootflash: de" CLI
polaris_utility_domain_template(cli_fs_cmds)

gen_require(
    type polaris_bexecute_t;
)
polaris_bexecute_domtrans(polaris_cli_fs_cmds_t)
polaris_cli_fs_cmds_domtrans(polaris_bexecute_t)
telnet_use_ptys(polaris_cli_fs_cmds_t)

# Blanket permission for disk management for cli_fs_cmds (for show/erase fs)
polaris_persistent_manage(polaris_cli_fs_cmds_t)
# permission to manage removable ( seems pretty safe )
polaris_removable_manage(polaris_cli_fs_cmds_t)
polaris_getattr_removable(polaris_cli_fs_cmds_t)
fs_read_removable_symlinks(polaris_cli_fs_cmds_t)
# btrace.sh needs these
polaris_boot_tmp_read(polaris_cli_fs_cmds_t)

```

```

polaris_btrace_tmppub_read(polaris_cli_fs_cmds_t)
# this is for NFS access mounted in a dir of ncd context
optional_policy(
    polaris_ncd_tmp_read(polaris_cli_fs_cmds_t)
)

#need to access pipes like pipe:[107820]
polaris_hman_use_fifo(polaris_cli_fs_cmds_t)

# df or stat the mount point
fs_getattr_nfs(polaris_cli_fs_cmds_t)
# mkfs permissions via domtrans
fstools_domtrans(polaris_cli_fs_cmds_t)
# runs NFS exportfs ( copied from ncd )
rpc_read_exports(polaris_cli_fs_cmds_t)
rpc_write_exports(polaris_cli_fs_cmds_t)
rpc_manage_nfs_state_data_dir(polaris_cli_fs_cmds_t)
rpc_manage_nfs_state_data(polaris_cli_fs_cmds_t)
fs_rw_nfsd_fs(polaris_cli_fs_cmds_t)
kernel_rw_rpc_sysctls(polaris_cli_fs_cmds_t)
fs_getattr_xattr_fs(polaris_cli_fs_cmds_t)
# rsync/remote_format perms ( rsync borrowed from polariscrft.te )
polaris_udev_tmp_list_dirs(polaris_cli_fs_cmds_t)
gen_require(
    type rsync_exec_t;
    type rsync_port_t;
    type rsync_tmp_t;
)
allow polaris_cli_fs_cmds_t rsync_port_t:tcp_socket name_connect;
allow polaris_cli_fs_cmds_t rsync_exec_t:file { execute execute_no_trans getattr map open read };

allow polaris_cli_fs_cmds_t rsync_tmp_t:file open;

allow polaris_cli_fs_cmds_t self:capability { chown fsetid setgid };

# Need to access /proc/self/fd/1 by platform_fs_operation.sh which is invoked by
# /bin/bash/usr/binos/conf/mcp_cli_fs_cmds.sh show bootflash:all
fs_associate_proc(polaris_cli_fs_cmds_t)

polaris_cli_fs_cmds_domtrans(polaris_hm_t)

corecmd_exec_bin(polaris_cli_fs_cmds_t)
polaris_cpld_read(polaris_cli_fs_cmds_t)
polaris_chasfs_manage(polaris_cli_fs_cmds_t)
polaris_use_btrace_fifo(polaris_cli_fs_cmds_t)
polaris_rmonbifo_tmp_read(polaris_cli_fs_cmds_t)

auth_use_nsswitch(polaris_cli_fs_cmds_t)

```

```

# allow polaris_cli_fs_cmds_t polaris_udev_tmp_files_t:file open;
polaris_udev_tmp_read(polaris_cli_fs_cmds_t)
#watch on modify /tmp/udev/etc/udev/usbflash1-2/udev-info for remote/stby usb device
polaris_udev_tmp_watch(polaris_cli_fs_cmds_t)

# allow to run mount in its own domain
mount_domtrans(polaris_cli_fs_cmds_t)
# runs systemctl to remount file system.
# usb[01] fs_target remount service used.
systemd_exec_systemctl(polaris_cli_fs_cmds_t)
systemd_config_generic_services(polaris_cli_fs_cmds_t)

# allow to run readlink -f /dev/bootflash1
storage_getattr_fixed_disk_dev(polaris_cli_fs_cmds_t)

# allow "format" CLI to add/delete links in /dev/, and /; e.g., /dev/harddisk1 /harddisk
ifdef(`crankshaft_family',`
    gen_require(`
        type device_t;
        type root_t;
        type udev_t;
    ')
    #/dev/harddisk1 /dev/harddisk1 -> /dev/dm-0
    filetrans_pattern({udev_t polaris_cli_fs_cmds_t}, device_t, fixed_disk_device_t, lnk_file, "harddisk1")
    filetrans_pattern({udev_t polaris_cli_fs_cmds_t}, device_t, fixed_disk_device_t, lnk_file, "harddisk")
    #/harddisk -> /misc/scratch
    filetrans_pattern(polaris_cli_fs_cmds_t, root_t, polaris_disk_bootflash_t, lnk_file, "harddisk")

    manage_lnk_files_pattern(polaris_cli_fs_cmds_t, fixed_disk_device_t, fixed_disk_device_t)
')
seutil_domtrans_setfiles(polaris_cli_fs_cmds_t)
polaris_hman_use_fifo(setfiles_t)
# need open, read on /bootflash/packages.conf
polaris_read_packages_conf(polaris_cli_fs_cmds_t)

# "sed" needs access to /proc/cmdline
kernel_read_system_state(polaris_cli_fs_cmds_t)

# work with /tmp files (/tmp/fs_lock_bootflash)
type polaris_cli_fs_cmds_tmp_t;
gen_require(`
    type tmp_t;
')
files_tmp_file(polaris_cli_fs_cmds_tmp_t)
manage_files_pattern(polaris_cli_fs_cmds_t, tmp_t, polaris_cli_fs_cmds_tmp_t)
files_tmp_filetrans(polaris_cli_fs_cmds_t, polaris_cli_fs_cmds_tmp_t, file)

```

```

#"find /vol/disk0/caf" when show CLI is excuted
polaris_caf_tmp_files_read(polaris_cli_fs_cmds_t)

#Caf and IOxMan-CLI interaction
polaris_caf_tmp_files_manage(polaris_cli_fs_cmds_t)

# mcp_cli_fs_cmds.sh show webui: all runs df -P /webui
fs_getattr_tmpfs(polaris_cli_fs_cmds_t)

polaris_persistent_getattr(polaris_cli_fs_cmds_t)
fs_getattr_xattr_fs(polaris_cli_fs_cmds_t)
allow polaris_cli_fs_cmds_t self:capability dac_override;
allow polaris_cli_fs_cmds_t self:dir { add_name write };

# allow caf access to mcp_cli_fs_cmds.sh for fsck on ngwc platforms
ifdef(`ngwc_family',`
domain_read_all_domains_state(polaris_cli_fs_cmds_t)
polaris_caf_domtrans(polaris_cli_fs_cmds_t)
polaris_caf_files_read(polaris_cli_fs_cmds_t)
dev_read_sysfs(polaris_cli_fs_cmds_t)
')

#####
# fsck CLI using mcp_cli_fs_cmds.sh as tested on sparrow
#####
# allow fsck in mcp_cli_fs_cmds.sh to execute udev in the udev domain
udev_domtrans(polaris_cli_fs_cmds_t)
# allow crypsetup to be executed
lvm_domtrans(polaris_cli_fs_cmds_t)
# allow fsck to run on bootflash
polaris_nvram_getattr(polaris_cli_fs_cmds_t)

# during SDWAN admin-tech generation, fs_display_*() in mcp_cli_fs_cmds.sh is
# invoked; this tries to find files like /bootflash/tracelogs/cia-netcon* with
# LABEL polaris_conf_d_var_log_t
polaris_conf_d_var_log_read(polaris_cli_fs_cmds_t)
#####
# hm calls df to figure out tmpfs size, on some platforms
# where configfs is mounted it needs statfs access to it
gen_require(`
    type configfs_t;
')
allow polaris_hm_t configfs_t:dir getattr;

# hm populates vrf_shm on behalf of iosd, and may create
# and delete vrf-based netns
polaris_vrf_netns_manage(polaris_hm_t)
fs_unmount_nsfs(polaris_hm_t)

```

```

#read udev_info
polaris_udev_tmp_read(polaris_hm_t)

gen_require(
    type rsync_t;
)
allow rsync_t polaris_hm_t:fifo_file read;

#####
# show platform software yang-management process monitor
# mcp_monitor_dmi_proc.sh
# /bin/bash /bin/mcp_pkg_wrap rp_daemons /usr/binos/conf/mcp_monitor_dmi_proc.sh
#####

polaris_utility_domain_template(monitor_dmi_process)

polaris_bexecute_domain(polaris_monitor_dmi_process_t, polaris_monitor_dmi_process_exec_t)

# mcp_monitor_dmi_proc.sh calls "ps" command
# "ps" needs read/getattr access of various files in the system
# ps -eo comm,pid,s,vsize,rssize,%cpu,%mem,etime --sort=comm
domain_read_all_domains_state(polaris_monitor_dmi_process_t)

# "ps" needs access to /proc/uptime
kernel_read_system_state(polaris_monitor_dmi_process_t)

# "ps" needs access to /sys/devices/system/cpu/online, etc
dev_read_sysfs(polaris_monitor_dmi_process_t)

# "ps" need read access to /proc
kernel_list_proc(polaris_monitor_dmi_process_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_monitor_dmi_process_t)

# executes head command
corecmd_exec_bin(polaris_monitor_dmi_process_t)

# sources cyan_api.sh
files_exec_usr_files(polaris_monitor_dmi_process_t)

# /bin/bash /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/conf/mcp_monitor_dmi_proc.sh
corecmd_shell_entry_type(polaris_monitor_dmi_process_t)

# need write/ioctl/getattr access for pipes like "pipe:[79843]"
polaris_hman_use_fifo(polaris_monitor_dmi_process_t)

```

```

# read /etc/init.d/quad_sup_usb_infra.sh
init_read_script_files(polaris_cli_fs_cmds_t)
#This triggers access to /tmp/.flashlock and /dev/sda3
polaris_flashlib_lock(polaris_cli_fs_cmds_t)
#allow flash utility
polaris_flashlib_read(polaris_cli_fs_cmds_t)
# /sys/bus/usb/drivers/usb/*/authorized is accessed (read and write) from hman.
# For USB disable feature across all ngwc platforms needs authorized file to
# be accessed.
ifdef(^ngwc_family',`
gen_require(`
type sysfs_t;
')
allow polaris_hm_t sysfs_t:file create;
dev_rw_sysfs(polaris_hm_t)
dev_manage_sysfs_dirs(polaris_hm_t)
')

# work with /tmp files (/tmp/usb-disable)
polaris_iosd_usb_disable_tmp_manage(polaris_hm_t)

#need access to tmp files created under issu directory
polaris_issu_tmp_files_read(polaris_hm_t)

# HMMAN calls for checking database compactability
# tdlldb_db_epoch_test is requires access to /tmp/issu/provision/sw-running.txt
polaris_install_tmp_read(polaris_hm_t)

optional_policy(`
  polaris_efs_files_list_dirs(polaris_cli_fs_cmds_t)
')

# Execute hdparam in its own domain
fstools_domtrans(polaris_hm_t)

# Allow polaris_hm to get attributes of fixed disk
storage_getattr_fixed_disk_dev(polaris_hm_t)

# Allow read to ssd auth tmp files /tmp/ssd_blk_device
polaris_read_ssd_tmp_files(polaris_hm_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarishm.te
No license file was found, but licenses were detected in source scan.

#
# March 2017, Victor Kamensky
#

```

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#

## <summary>Polaris ngwc\_tbl\_mgr Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngwctblmgr.if

No license file was found, but licenses were detected in source scan.

#

# September 2017, Victor Kamensky

#

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# All rights reserved

#

## <summary>Polaris polarisbtman Policy Rules.</summary>

#####

## <summary>

## Execute fs tools in the btrace\_rotate domain.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed to transition.

## </summary>

## </param>

#

interface(`polaris\_btrace\_rotate\_domtrans`,

gen\_require(`

type polaris\_btman\_t, polaris\_btman\_exec\_t;

')

corecmd\_search\_bin(\$1)

domtrans\_pattern(\$1, polaris\_btman\_exec\_t, polaris\_btman\_t)

')

#####

## <summary>

## Read /tmp/tmpub files/dirs

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

```

interface(`polaris_btrace_tmppub_read`,`
    gen_require(`
        type polaris_btrace_tmppub_t;
    `)

    read_files_pattern($1, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)
    read_lnk_files_pattern($1, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)
    list_dirs_pattern($1, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)
)

```

```
#####
```

```

## <summary>
##   Manage /tmp/tmppub files/dirs
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_btrace_tmppub_manage`,`
    gen_require(`
        type polaris_btrace_tmppub_t;
    `)

    manage_files_pattern($1, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)
    manage_dirs_pattern($1, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)
)

```

```
#####
```

```

## <summary>
## Read and write all btman's fifo file, used as
##   standard input/output.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolecap/>
#

```

```

interface(`polaris_use_btman_fifo`,`
    gen_require(`
        type polaris_btman_t;
    `)

    allow $1 polaris_btman_t:fifo_file { rw_term_perms lock append create unlink };
)

```

Found in path(s):  
\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtman.if  
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```
#  
# June 2017, Victor Kamensky  
#  
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# All rights reserved  
#  
  
## <summary>Polaris webui Policy Rules.</summary>
```

```
#####  
## <summary>  
##   Read files under /webui/..., these are webui odm file  
## </summary>  
## <param name="domain">  
##   <summary>  
##     Domain allowed access.  
##   </summary>  
## </param>  
#  
interface(`polaris_read_webui_files`,  
  gen_require(  
    type polaris_webui_file_t;  
  )  
  
  read_files_pattern($1, polaris_webui_file_t, polaris_webui_file_t)  
  read_lnk_files_pattern($1, polaris_webui_file_t, polaris_webui_file_t)  
)
```

Found in path(s):  
\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswebui.if  
No license file was found, but licenses were detected in source scan.

```
#  
# March 2017, Victor Kamensky  
#  
# Copyright (c) 2016-2019 by Cisco Systems, Inc.  
# All rights reserved  
#  
  
/tmp/fp/tlddb(/.*)?      gen_context(system_u:object_r:polaris_tlddb_t,s0)  
/tmp/rp/tlddb(/.*)?      gen_context(system_u:object_r:polaris_tlddb_t,s0)  
/tmp/cc/tlddb(/.*)?      gen_context(system_u:object_r:polaris_tlddb_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristddb.fc

No license file was found, but licenses were detected in source scan.

```
#
# March 2017, Victor Kamensky
#
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#

## <summary>Polaris NVRAM Policy Rules.</summary>

#####
# Polaris lsmpi
#####

#####
## <summary>
##   Work (read, write, ioctl) with /dev/lsmpi device.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_lsmpi_dev_use',`
gen_require(`
    type device_t;
    type polaris_lsmpi_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_lsmpi_device_t)
    read_chr_files_pattern($1, device_t, polaris_lsmpi_device_t)
    allow $1 polaris_lsmpi_device_t:chr_file map;
`)

#####
## <summary>
##   Read lsmpi sysctl file, ie one under /proc/sys/lsmpi and
## /proc/sys/lsmpi_lodrv directories.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
```

```

## <rolebase/>
#
interface(`polaris_lsmpi_sysctl_read`,`
gen_require(`
type polaris_sysctl_lsmpi_t;
`)
read_files_pattern($1, polaris_sysctl_lsmpi_t, polaris_sysctl_lsmpi_t)
`)

#####
## <summary>
## Read from /sys/devices/virtual/contdev sysfs files.
## sys files.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_contdev_dev_read`,`
gen_require(`
type polaris_sysfs_contdev_t;
type sysfs_t;
`)
read_files_pattern($1, polaris_sysfs_contdev_t, polaris_sysfs_contdev_t)
list_dirs_pattern($1, polaris_sysfs_contdev_t, polaris_sysfs_contdev_t)
# genfscon statement specifically excludes symbolic links from
# genfscon path specific entries. To workaround, let us allow
# to follow sysfs_t symbolic links
allow $1 sysfs_t:lnk_file read;
`)

#####
## <summary>
## Write into /sys/devices/virtual/contdev sysfs files.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_contdev_dev_write`,`
gen_require(`
type polaris_sysfs_contdev_t;
type sysfs_t;
`)

```

```

write_files_pattern($1, polaris_sysfs_contdev_t, polaris_sysfs_contdev_t)
# genfscon statement specifically excludes symbolic links from
# genfscon path specific entries. To workaround, let us allow
# to follow sysfs_t symbolic links
allow $1 sysfs_t:lnk_file read;
)

#####
## <summary>
##   Manage /sys/devices/virtual/contdev sysfs files.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_manage_contdev_dev`,`
gen_require(`
type polaris_sysfs_contdev_t;
type sysfs_t;
)
manage_files_pattern($1, polaris_sysfs_contdev_t, polaris_sysfs_contdev_t)
manage_dirs_pattern($1, polaris_sysfs_contdev_t, polaris_sysfs_contdev_t)
# genfscon statement specifically excludes symbolic links from
# genfscon path specific entries. To workaround, let us allow
# to follow sysfs_t symbolic links
allow $1 sysfs_t:lnk_file read;
)

#####
## <summary>
##   Allow the specified domain to manage punt/inject socket
## files. I.e /tmp/pi/dp_2_iosd_pi and /tmp/pi/iosd_2_dp_pi
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_pi_uds_manage`,`
gen_require(`
type polaris_pi_uds_t;
)
manage_sock_files_pattern($1, polaris_pi_uds_t, polaris_pi_uds_t)
)

```

Found in path(s):  
\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislsmpi.if  
No license file was found, but licenses were detected in source scan.

```
#  
# March 2017, Victor Kamensky  
#  
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#
```

```
/usr/binos/conf/issu_stack.sh -- gen_context(system_u:object_r:polaris_issu_stack_exec_t,s0)
```

```
/tmp/issu_stk(/.*)? gen_context(system_u:object_r:polaris_issu_stack_tmp_t,s0)
```

Found in path(s):  
\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisissustack.fc  
No license file was found, but licenses were detected in source scan.

```
#  
# August 2017, Shawn Lu  
#  
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# All rights reserved  
#
```

```
# polarisnmspd file contexts place holder
```

Found in path(s):  
\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisnmspd.fc  
No license file was found, but licenses were detected in source scan.

```
#  
# Aug 2020, Sridhar C  
#  
# Copyright (c) 2020 by Cisco Systems, Inc.  
# All rights reserved  
#
```

```
policy_module(polarisxcopy, 1.0);
```

```
#####  
## xcopy_script.sh  
#####  
polaris_utility_domain_template(xcopy_script)
```

```
polaris_bexecute_domain(polaris_xcopy_script_t, polaris_xcopy_script_exec_t)
```

```

# xcopy_script.sh call other scripts through brelay.sh
polaris_bexecute_domtrans(polaris_xcopy_script_t)

polaris_chasfs_manage(polaris_xcopy_script_t)

# xcopy calls curl/sshpass/scp command and support scp/http/https
gen_require(
    type polaris_curl_t;
    type ssh_exec_t;
    type ssh_home_t;
    type devpts_t;
)
polaris_curl_domtrans(polaris_xcopy_script_t)
corenet_tcp_connect_ssh_port(polaris_curl_t)
corenet_tcp_connect_http_port(polaris_curl_t)
corenet_tcp_connect_ssh_port(polaris_xcopy_script_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_xcopy_script_t)

# read polaris vrf net namespace file
fs_read_nsfs_files(polaris_xcopy_script_t)

# curl needs access to bootflash
polaris_bootflash_manage(polaris_curl_t)
polaris_bootflash_manage(polaris_xcopy_script_t)

# also need to be able to ls /tmp/ufs/ on ngwc
optional_policy(
    polaris_ncd_tmp_read(polaris_xcopy_script_t)
)

# Execute
corecmd_exec_bin(polaris_xcopy_script_t)

#uses kernel utilities like pidof, stat
domain_read_all_domains_state(polaris_xcopy_script_t)
kernel_list_proc(polaris_xcopy_script_t)

# read /proc/cmdline
kernel_read_system_state(polaris_xcopy_script_t)
fs_getattr_tmpfs(polaris_xcopy_script_t)
fs_getattr_xattr_fs(polaris_xcopy_script_t)

# xcopy started from the smand and needs fifo
polaris_smand_use_fifo(polaris_xcopy_script_t)

# ping to check reachability

```

```

netutils_domtrans_ping(polaris_xcopy_script_t)
#
# calls mcp_chvrf.sh for ping and curl
polaris_chvrf_domtrans(polaris_xcopy_script_t)

# xcopy uses ps to find the curl process state
# "ps" needs read access to /sys/devices/system/cpu/online
# "ps" needs read access to /proc/uptime
dev_read_sysfs(polaris_xcopy_script_t)

# Started by bexecute so it has its stdin set to telnet pty file
telnet_use_ptys(polaris_xcopy_script_t)

# stdout is set to fifo set by rotte to capture output into btrace
# btrace also need these policies :)
# btrace_init also refer to /tmp/sw/boot/..
polaris_use_btrace_fifo(polaris_xcopy_script_t)
polaris_cpld_read(polaris_xcopy_script_t)
polaris_boot_tmp_read(polaris_xcopy_script_t)

# Allow /tmp/xcopy/
type polaris_xcopy_tmp_t;
files_tmp_file(polaris_xcopy_tmp_t)
files_tmp_filetrans(polaris_xcopy_script_t, polaris_xcopy_tmp_t, { dir file })
polaris_xcopy_tmp_manage(polaris_xcopy_script_t)

# Curl writes the progress...
polaris_xcopy_tmp_manage(polaris_curl_t)

# PS command access ttyS1
term_getattr_unallocated_ttys(polaris_xcopy_script_t)

# sshpass/scp
ssh_getattr_user_home_dir(polaris_xcopy_script_t)

# sshpass uses the ptmx
term_use_ptmx(polaris_xcopy_script_t)
term_getattr_pty_fs(polaris_xcopy_script_t)

# scp uses ssh
#allow polaris_xcopy_script_t ssh_exec_t:file { execute execute_no_trans map open read };
ssh_exec(polaris_xcopy_script_t)

allow polaris_xcopy_script_t self:capability {sys_resource fsetid};
allow polaris_xcopy_script_t self:process setfscreate;
allow polaris_xcopy_script_t ssh_home_t:dir { create search };
allow polaris_xcopy_script_t devpts_t:chr_file { getattr open read setattr write };

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisxcopy.te

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#

# April 2017, Victor Kamensky

#

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#

## <summary>Polaris dmi\_ncsshd\_fwd Policy Rules.</summary>

#####

## <summary>

## Connect to and send messages to dmi\_ncsshd\_bp

## tmp/.ncsshd\_bp.sock unix datagram sockets.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_dmi\_ncsshd\_fwd\_dgram\_send`,`

gen\_require(`

type polaris\_dmi\_ncsshd\_log\_t;

type polaris\_dmi\_ncsshd\_fwd\_t;

`)

allow \$1 self:unix\_stream\_socket {create\_socket\_perms};

allow \$1 polaris\_dmi\_ncsshd\_fwd\_t:unix\_stream\_socket {connectto};

write\_sock\_files\_pattern(\$1, polaris\_dmi\_ncsshd\_log\_t,polaris\_dmi\_ncsshd\_log\_t)

')

#####

## <summary>

## Write into fifo file created by dmi\_ncsshd\_fwd, typical case when

## hman starts script under popen.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

## <rolecap/>

#

interface(`polaris\_dmi\_ncsshd\_fwd\_use\_fifo`,`

```

gen_require(
    type polaris_dmi_ncsshd_fwd_t;
)

write_fifo_files_pattern($1, polaris_dmi_ncsshd_fwd_t, polaris_dmi_ncsshd_fwd_t)
)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmincsshdfwd.if
```

No license file was found, but licenses were detected in source scan.

```

dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
define(`polaris_database_aux',`dnl
/tmp/rp/tlddb/[0-9]/$2 -- gen_context(system_u:object_r:$1,s0)
/tmp/fp/tlddb/[0-9]/$2 -- gen_context(system_u:object_r:$1,s0)
/tmp/cc/tlddb/[0-9]/$2 -- gen_context(system_u:object_r:$1,s0)
/tmp/rp/tlddb/[0-9]/$2.lock -- gen_context(system_u:object_r:$1,s0)
/tmp/fp/tlddb/[0-9]/$2.lock -- gen_context(system_u:object_r:$1,s0)
/tmp/cc/tlddb/[0-9]/$2.lock -- gen_context(system_u:object_r:$1,s0)
)

define(`polaris_database',`dnl
polaris_database_aux(database_label($1), $1)
)

define(`polaris_database_process',`)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_database_db_fc.m4
```

No license file was found, but licenses were detected in source scan.

```

#
# June 2017, Victor Kamensky
#
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#

## <summary>Polaris ioxman Policy Rules.</summary>

#####

## <summary>
##   Manage ioxman temporary files and directories in /tmp.

```

```

## Like /tmp/ios_xml.dat.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_iox_manage_tmp_files`,`
    gen_require(`
        type polaris_iox_tmp_t;
    `)

    manage_files_pattern($1, polaris_iox_tmp_t, polaris_iox_tmp_t)
    files_tmp_filetrans($1, polaris_iox_tmp_t, file, "iox_xml.dat")
    files_tmp_filetrans($1, polaris_iox_tmp_t, file, "iox_override.conf")
    # /tmp/trace/resource.log can be created by ioxman/vman/caf
    # through sourcing in the family of the pvsm_*.sh scripts
    files_tmp_filetrans($1, polaris_iox_tmp_t, file, "resource.log")
)

```

```

#####
## <summary>
##   Read ioxman temporary files and directories in /tmp.
## Like /tmp/ios_xml.dat and /tmp/iox_override.conf
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_iox_read_tmp_files`,`
    gen_require(`
        type polaris_iox_tmp_t;
    `)

    read_files_pattern($1, polaris_iox_tmp_t, polaris_iox_tmp_t)
)

```

```

#####
## <summary>
##   Make the specified domain able to work with iosd2iox files
## </summary>
## <param name="type">
##   <summary>
##     Domain allowed access.
##   </summary>

```

```

## </param>
#
interface(`polaris_iox2iosd_tmp_manage',`
    gen_require(`
        type polaris_iox2iosd_tmp_t;
    `)

    manage_dirs_pattern($1, polaris_iox2iosd_tmp_t, polaris_iox2iosd_tmp_t)
    manage_files_pattern($1, polaris_iox2iosd_tmp_t, polaris_iox2iosd_tmp_t)
)

```

```
#####
```

```

## <summary>
##   Read ioxman executable file. Used by caf to read iosman
## version.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_ioxman_exec_read',`
    gen_require(`
        type polaris_ioxman_exec_t;
        type bin_t;
    `)

    read_files_pattern($1, bin_t, polaris_ioxman_exec_t)
)

```

```
#####
```

```

## <summary>
##   Allow the specified domain to get show_version information
## from ioxman executable
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_ioxman_show_version',`
    gen_require(`
        type polaris_ioxman_exec_t;
    `)

    polaris_show_version($1, polaris_ioxman_exec_t)
)

```

```
#####
## <summary>
##   Allow the specified domain to get show_version information
## from dockerd and other container_runtime_t executables
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_container_runtime_show_version',`
    gen_require(`
        type container_runtime_exec_t;
    `)
    polaris_show_version($1, container_runtime_exec_t)
`)

#####
## <summary>
##   Execute a domain transition to run cat9k_ssd_auth_cmds.sh
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_ssd_auth_domtrans',`
    gen_require(`
        type polaris_ssd_auth_t, polaris_ssd_auth_exec_t;
    `)

    domtrans_pattern($1, polaris_ssd_auth_exec_t, polaris_ssd_auth_t)
`)

#####
## <summary>
##   Read ssd files in /tmp/ssd_blk_device
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_read_ssd_tmp_files',`
```

```
gen_require(  
    type polaris_ssd_auth_tmp_t;  
)  
  
read_files_pattern($1, polaris_ssd_auth_tmp_t, polaris_ssd_auth_tmp_t)  
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisioxman.if

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```
#  
# Nov 2020, Swati Kumaro  
#  
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#
```

```
/dev/blzi_fpga -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)  
/dev/blzi_ts_1pps -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)  
/dev/blzi_gps_1pps -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)  
/dev/blzi_lol_1pps -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)  
/dev/blzi_ts_interest_0 -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)  
/dev/blzi_ts_interest_1 -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)  
/dev/blzi_ts_interest_2 -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)  
/dev/blzi_ts_interest_3 -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)  
/dev/blzi_ts_interest_4 -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)  
/dev/blzi_ts_interest_5 -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisptpdrp.fc

No license file was found, but licenses were detected in source scan.

```
#  
# January 2021, Gabriel Lee, Shawn Liu  
#  
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# All rights reserved  
#
```

```
policy_module(polarisezmanage, 1.0);
```

```
type polaris_ezmanage_file_t;  
files_type(polaris_ezmanage_file_t)  
polaris_pfile_type(polaris_ezmanage_file_t)
```

```
polaris_process_domain_template(ezmanage)
```

```

# Allow ezManage script to be executed by systemd
gen_require(
    type unconfined_service_t;
)

polaris_ezmanage_domtrans(unconfined_service_t)

# Allow ezManage file and directory access
polaris_manage_ezmanage_files(polaris_ezmanage_t)

# Allow ezManage socket access
allow polaris_ezmanage_t self:unix_dgram_socket { connected_socket_perms sendto };

# Allow read of /etc/passwd
auth_use_nsswitch(polaris_ezmanage_t)

# ezManage python script needs access to USB ttys for modem AT channel
term_use_usb_ttys(polaris_ezmanage_t)

# ezManage python script needs /usr/bin/python3 execution and may also call other generic system bin utilities
corecmd_exec_bin(polaris_ezmanage_t)

# ezManage needs to access /bootflash/ciscosdwan.cfg and a variably named tar file in /bootflash/modem_firmware
polaris_bootflash_filetrans(polaris_ezmanage_t, polaris_ezmanage_file_t, file, "ciscosdwan.cfg")
polaris_bootflash_filetrans(polaris_ezmanage_t, polaris_ezmanage_file_t, file, "modem_firmware.tar.gz")

# ezManage socket file is created in /var/run
type polaris_ezmanage_var_run_t;
files_pid_file(polaris_ezmanage_var_run_t)
files_pid_filetrans(polaris_ezmanage_t, polaris_ezmanage_var_run_t, sock_file, "cwan_ezmanage_py_server")

# Allow ezManage to access its socket file in /var/run
polaris_manage_ezmanage_var_run_files(polaris_ezmanage_t)

# Allow ezManage to access ngiolite socket file in /var/run
gen_require(
    type polaris_cwan_svr_var_run_t;
)
rw_sock_files_pattern(polaris_ezmanage_t, polaris_cwan_svr_var_run_t, polaris_cwan_svr_var_run_t)

# Allow ezManage to access ngiolite dgram_socket
gen_require(
    type polaris_ngiolite_t;
)
allow polaris_ezmanage_t polaris_ngiolite_t:unix_dgram_socket sendto;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisezmanage.te

```

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```
#
# March 2017, Victor Kamensky
#
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#

## <summary>Polaris dbm Policy Rules.</summary>

#####
## <summary>
##   Setup /bootflash/.dbpersist directory and content.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_tdlpersist_setup`, `
    gen_require(`
        type polaris_disk_bootflash_t;
        type polaris_disk_dbm_t;
    `)
    filetrans_pattern($1, polaris_disk_bootflash_t, polaris_disk_dbm_t, dir, ".dbpersist")
    # allow creation of /bootflash/.dbpersist directory
    manage_dirs_pattern($1, polaris_disk_bootflash_t, polaris_disk_dbm_t)
    # dbm can manage files inside of its own polaris_disk_dbm_t directories
    manage_files_pattern($1, polaris_disk_dbm_t, polaris_disk_dbm_t)
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdbm.if

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```
#
# May 2017, Victor Kamensky
#
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#

# polarismdtpubd file contexts place holder
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismdtpubd.fc

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```
#
# February 2020, Victor Kamensky
#
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#

policy_module(polaristtm, 1.0);

gen_require(
    type polaris_ttm_t;
)
polaris_chasfs_read(polaris_ttm_t)
polaris_cpld_read(polaris_ttm_t)

logging_send_syslog_msg(polaris_ttm_t)

# vconfd_load_shared_schemas
polaris_conf_d_shared_schema_read(polaris_ttm_t)

# /var/run/.ttmd socket and pid
type polaris_ttm_var_run_t;
files_pid_file(polaris_ttm_var_run_t)
manage_files_pattern(polaris_ttm_t, polaris_ttm_var_run_t, polaris_ttm_var_run_t)
manage_sock_files_pattern(polaris_ttm_t, polaris_ttm_var_run_t, polaris_ttm_var_run_t)
files_pid_filetrans(polaris_ttm_t, polaris_ttm_var_run_t, { file sock_file })

# allow /usr/binos/bin/ttmd to acces polaris_tdlresolve_t and
#
# polaris_global_service_t
polaris_tdlresolve_manage(polaris_ttm_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristtm.te
```

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```
#
# February 2020, Victor Kamensky
#
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#
```

```
policy_module(polarissdaveproxy, 1.0);
```

```
gen_require(
    type polaris_sdave_proxy_t;
```

```

')

# btrace_application_start
polaris_chasfs_read(polaris_sdavc_proxy_t)
polaris_tdlresolve_read(polaris_sdavc_proxy_t)
polaris_cpld_read(polaris_sdavc_proxy_t)

# Allow SDAVC exports using UDP socket.
allow polaris_sdavc_proxy_t self:udp_socket create_socket_perms;

# Change namespace to allow network communication with vManage
(process_namespace_network_change_internal - opens /var/run/netns/*)
polaris_cedge_set_ns(polaris_sdavc_proxy_t)

# Reset the namespace back to default (process_namespace_network_default opens /proc/1/ns/net)
polaris_cedge_reset_ns(polaris_sdavc_proxy_t)

type polaris_sdavc_proxy_files_t;
files_type(polaris_sdavc_proxy_files_t)
polaris_pfile_type( polaris_sdavc_proxy_files_t)

# Create /bootflash/sdavc directory, Write, Read & Removed files (For SDAVC imports)
polaris_bootflash_filetrans(polaris_sdavc_proxy_t, polaris_sdavc_proxy_files_t, dir, "sdavc")
polaris_bootflash_filetrans(polaris_iosd_t, polaris_sdavc_proxy_files_t, dir, "sdavc")
polaris_sdavc_proxy_manage(polaris_sdavc_proxy_t)

# IOSd process also should have access to /bootflash/sdavc directory
gen_require(
    type polaris_iosd_t;
)
polaris_sdavc_proxy_manage(polaris_iosd_t)

# Allow SDAVC imports (HTTP GET, PUT) we use /usr/bin/curl executable.
# Exe: curl -f -s --connect-time 10 -o /bootflash/sdavc/.... -w% {http_code} http://<user>:<pw>@<vManage system
ip>:<port>
# Run CURL in its domain so it wont have all sdavcproxy permissions.

gen_require(
    type polaris_curl_t;
)
polaris_curl_domtrans(polaris_sdavc_proxy_t)
corenet_tcp_connect_generic_port(polaris_curl_t)

# cURL process also should have access to /bootflash/sdavc directory
polaris_sdavc_proxy_manage(polaris_curl_t)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissdaveproxy.te
```

```
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```

```
#
```

```
# Sep 2020, Sridhar C
```

```
#
```

```
# Copyright (c) 2020 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
/usr/binos/conf/xcopy_script.sh -- gen_context(system_u:object_r:polaris_xcopy_script_exec_t,s0)
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisxcopy.fc
```

```
No license file was found, but licenses were detected in source scan.
```

```
dnl
```

```
dnl April 2018, Victor Kamensky
```

```
dnl
```

```
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
```

```
dnl All rights reserved
```

```
dnl
```

```
divert(-1)
```

```
include(`polaris_process.m4')
```

```
dnl Stub out plaris process
```

```
define(`polaris_process',`')
```

```
dnl Stub out mqipc
```

```
define(`polaris_mqipc_service_server',`')
```

```
define(`polaris_mqipc_service_client',`')
```

```
define(`polaris_mqipc_service_server_elastic_client',`')
```

```
dnl Stub out lipc
```

```
define(`polaris_lipc_service_server',`')
```

```
define(`polaris_lipc_service_client',`')
```

```
include(`polaris_ipc_ripc.m4')
```

```
include(`polaris_ipc_base_ripc_te.m4')
```

```
dnl Stub out non existent one
```

```
define(`polaris_websocket_service_server',`')
```

```
define(`polaris_cipc_service_server',`')
```

```
include(`polaris_max_scope.m4')
```

```
divert(0)dnl
```

```
#
```

```
# This is a generated file! Instead of modifying this file,  
# modify proper platform TDL file.  
#
```

```
policy_module(autopolarisplatformipcbase, 1.0);
```

```
gen_require(`  
    attribute port_type;  
    attribute defined_port_type;  
")
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_base_te.m4  
No license file was found, but licenses were detected in source scan.
```

```
#  
# March 2017, Victor Kamensky  
#  
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#
```

```
policy_module(polarisdroputil, 1.0);
```

```
polaris_process_domain_template(droputil)
```

```
corecmd_exec_bin(polaris_droputil_t)
```

```
# allow to read /proc/meminfo  
kernel_read_system_state(polaris_droputil_t)
```

```
# allow read of /etc/passwd  
auth_use_nsswitch(polaris_droputil_t)
```

```
# run ldd, which in turns execve "ld.so --verify"  
libs_exec_ld_so(polaris_droputil_t)
```

```
# work with /tmp files  
type polaris_droputil_tmp_t;  
files_tmp_file(polaris_droputil_tmp_t)  
manage_dirs_pattern(polaris_droputil_t, tmp_t, polaris_droputil_tmp_t)  
manage_files_pattern(polaris_droputil_t, polaris_droputil_tmp_t, polaris_droputil_tmp_t)  
manage_fifo_files_pattern(polaris_droputil_t, polaris_droputil_tmp_t, polaris_droputil_tmp_t)  
manage_lnk_files_pattern(polaris_droputil_t, polaris_droputil_tmp_t, polaris_droputil_tmp_t)  
files_tmp_filetrans(polaris_droputil_t, polaris_droputil_tmp_t, { file dir })
```

```
# on some platform /tmp/rp/dropbox is created by binos service  
# that runs under initrc_t
```

```

gen_require(
    type initrc_t;
)
files_tmp_filetrans(initrc_t, polaris_droputil_tmp_t, dir, "dropbox")

allow polaris_droputil_t self:capability { sys_resource dac_override };
allow polaris_droputil_t self:process setpgid;

polaris_btrace_data_manage(polaris_droputil_t)
polaris_cpld_read(polaris_droputil_t)
polaris_chasfs_manage(polaris_droputil_t)
polaris_boot_tmp_read(polaris_droputil_t)
polaris_read_debug_conf(polaris_droputil_t)
polaris_disk_crashinfo_getattr(polaris_droputil_t)
polaris_rmonbifo_tmp_read(polaris_droputil_t)

# runs systemctl start reflector.service
systemd_exec_systemctl(polaris_droputil_t)

# PLEASE LOOK AT ME need to have separate label for reflector.service
# allow only to start if, do it once copy of reflector.service is fixed
systemd_config_generic_services(polaris_droputil_t)

# droputil.sh delets /tmp/rp/droputil/so-del-stage/rp/0
fs_getattr_tmpfs(polaris_droputil_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdroputil.te
No license file was found, but licenses were detected in source scan.

#
# March 2017, Victor Kamensky
#
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#

policy_module(polarisofa, 1.0);

gen_require(
    type polaris_ofa_t;
)

polaris_btrace_data_manage(polaris_ofa_t)
polaris_crft_data_manage(polaris_ofa_t)
polaris_chasfs_manage(polaris_ofa_t)
polaris_tdlresolve_read(polaris_ofa_t)
polaris_tdlldb_list_dirs(polaris_ofa_t)

```

```
polaris_cpuld_read(polaris_ofa_t)
polaris_flashlib_read(polaris_ofa_t)
```

```
allow polaris_ofa_t self:capability sys_admin;
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisofa.te
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
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#

# /bootflash labels
/bootflash(/.*)?          gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/bootflash/.ssh(/.*)?     gen_context(system_u:object_r:ssh_home_t,s0)
/bootflash/.ssh/ssh_host.*_key\pub  gen_context(system_u:object_r:sshd_key_t,s0)
/bootflash/.ssh/ssh_host.*_key     gen_context(system_u:object_r:sshd_key_t,s0)
/bootflash/tracelogs(/.*)?       gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/bootflash/tan(/.*)?           gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/bootflash/core(/.*)?         gen_context(system_u:object_r:polaris_core_file_t,s0)
/bootflash/debug.conf         gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/bootflash/packages.conf      gen_context(system_u:object_r:polaris_packages_conf_t,s0)

# /objstore
/objstore(/.*)?           gen_context(system_u:object_r:polaris_disk_objstore_t,s0)
/dev/shm/sem\objstore_sem  gen_context(system_u:object_r:polaris_objstore_sem_t,s0)

# hanet driver used by vpcgw platform of VXE family
ifdef(`vpcgw_platform',`
/dev/hanet -c gen_context(system_u:object_r:polaris_hanet_device_t,s0)
')

# /csl_p_0
/csl_p_0(/.*)?          gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)

# /csl_p_1.context
/csl_p_1(/.*)?         gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)

# /csl_s_0.context
/csl_s_0(/.*)?        gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)

# /csl_s_1.context
/csl_s_1(/.*)?        gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)
```

```

# /varied
/varied(/.*)?          gen_context(system_u:object_r:polaris_disk_varied_t,s0)
/varied/.install_info  gen_context(system_u:object_r:polaris_vxeinstall_info_t,s0)
/varied/obfl.*         gen_context(system_u:object_r:polaris_obfl_data_t,s0)
/varied/grub_cisco_version  gen_context(system_u:object_r:polaris_grubver_t,s0)
/varied/grub(/.*)?     gen_context(system_u:object_r:boot_t,s0)
/varied/grub2(/.*)?    gen_context(system_u:object_r:polaris_grub_bios_t,s0)
/varied/vcpu_template.txt gen_context(system_u:object_r:polaris_iosd_vcpu_t,s0)

/sbin/grub*           gen_context(system_u:object_r:bootloader_exec_t,s0)

# /grubenv
/bootefi(/.*)?       gen_context(system_u:object_r:polaris_grub_efi_t, s0)

# from /lib/tmpfiles.d/binos-vxe.conf
/lic0 -l              gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/lic1 -l              gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)

# umbrella_ini.sh executable label
/usr/binos/conf/umbrella_init.sh -- gen_context(system_u:object_r:polaris_umbrella_init_exec_t,s0)

#
# On ultra_us /cpld_util.sh creates /tmp/chassis. Put this script into the initexec_t domain so
# chasfs transitions properly.
#
/cpld_util.sh         gen_context(system_u:object_r:initrc_exec_t,s0)

# /config labels
/config(/.*)?         gen_context(system_u:object_r:polaris_disk_config_t,s0)
/config/.ssh(/.*)?    gen_context(system_u:object_r:ssh_home_t,s0)
/config/.ssh/ssh_host.*_key\*.pub gen_context(system_u:object_r:sshd_key_t,s0)
/config/.ssh/ssh_host.*_key    gen_context(system_u:object_r:sshd_key_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisvxe.fc

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```

#
# March 2017, Victor Kamensky
#
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#

```

policy\_module(polarisboot, 1.0);

#####

# /tmp/sw/boot policy

```
#####
type polaris_boot_tmp_t;
files_tmp_file(polaris_boot_tmp_t)
gen_require(
    attribute domain;
)
files_tmp_filetrans(domain, polaris_boot_tmp_t, dir, "boot")
# /tmp/sw/isos
files_tmp_filetrans(domain, polaris_boot_tmp_t, dir, "isos")

# dmesg command is executed in its own domain and result is store
# into /tmp/sw/boot/dmesg file
gen_require(
    type dmesg_t;
)
polaris_boot_tmp_write(dmesg_t)

# /tmp/reload_reason copied from /bootflash/.prst_sync/reload_info
files_tmp_filetrans(domain, polaris_boot_tmp_t, file, "reload_reason")

# /tmp/bootup_timestamp created by /etc/init.d/binos
gen_require(
    type initrc_t;
    type init_t;
)
files_tmp_filetrans({ initrc_t init_t }, polaris_boot_tmp_t, file, "bootup_timestamp")

type polaris_boot_file_t;
files_type(polaris_boot_file_t)
polaris_pfile_type(polaris_boot_file_t)
gen_require(
    type polaris_disk_bootflash_t;
)
filetrans_pattern(domain, polaris_disk_bootflash_t, polaris_boot_file_t, file, "reload_info")
filetrans_pattern(domain, polaris_disk_bootflash_t, polaris_boot_file_t, file, "stack_reload_info")
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisboot.te

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```
#
# February 2020, Victor Kamensky
#
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#
```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscfgmgr.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscxp.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmiportsfetch.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisftm.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdbgd.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfpm.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisvdaemon.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristtm.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisomp.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisinstallmgr.fc
No license file was found, but licenses were detected in source scan.

```

```

#
# March 2017, Victor Kamensky
#
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#

```

```

## <summary>Polaris Common Policy Rules.</summary>

```

```

#####
# Polaris common
#####

```

```

#####
## <summary>
##   Create a domain for long running Polaris processes in
##   confined mode.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <param name="entry_point">
## <summary>
##   Type of the program to be used as an entry point to this domain.
## </summary>
## </param>
#
interface(`polaris_process_domain_confined',`
    gen_require(`
        type unconfined_service_t;
    ')
    init_daemon_domain($1, $2)

    # polaris process now started by pman, which still runs

```

```

# under unconfined label
type_transition unconfined_service_t $2:process $1;
allow unconfined_service_t $1:process transition;
allow $1 unconfined_service_t:process sigchld;

polaris_pman_entry($1, $2)

gen_require(`
    attribute polaris_domain;
    attribute polaris_exec_domain;
    attribute polaris_extended_domain;
`)
typeattribute $1 polaris_domain, polaris_extended_domain;
typeattribute $2 polaris_exec_domain;

# allow all process to check whether kernel ksm is enabled
polaris_ksm_run_check($1)
)

#####
## <summary>
##   Create a domain for long running Polaris processes. Note
##   depending on policy build setting it could be confined or
##   not confined
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <param name="entry_point">
## <summary>
##   Type of the program to be used as an entry point to this domain.
## </summary>
## </param>
#
interface(`polaris_process_domain`,`

# the default is to confine all domains
polaris_process_domain_confined($1, $2)

#
# if the domain is in the permissive map, then set it to be confined
# permissive. if the domain is in the confined map, then there really
# isnt much else to do but leave it confined. if the domain isnt in
# the permissive or confined maps then determine if the domain should
# be unconfined.
#

```

```

        ifelse(permissive_domain($1), $1, `polaris_permissive_domain_setup($1)',
              confined_domain($1), $1, `',
              `polaris_domain_maybe_unconfined($1)')
    )

```

```
#####
```

```

## <summary>
##   Create a domain for utility Polaris processes in
##   confined mode.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <param name="entry_point">
## <summary>
##   Type of the program to be used as an entry point to this domain.
## </summary>
## </param>
#
interface(`polaris_utility_domain_confined',`
  domain_type($1)
  domain_entry_file($1, $2)
  role system_r types $1;

  gen_require(`
    attribute polaris_domain;
    attribute polaris_exec_domain;
    attribute polaris_extended_domain;
  `)
  typeattribute $1 polaris_domain, polaris_extended_domain;
  typeattribute $2 polaris_exec_domain;

  # allow all process to check whether kernel ksm is enabled
  polaris_ksm_run_check($1)
)

```

```
#####
```

```

## <summary>
##   Create a domain for utility Polaris processes. Note
##   depending on policy build setting it could be confined or
##   not confined
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>

```

```

## </param>
## <param name="entry_point">
## <summary>
## Type of the program to be used as an entry point to this domain.
## </summary>
## </param>
#
interface(`polaris_utility_domain`,`

    # the default is to confine all domains
    polaris_utility_domain_confined($1, $2)

    #
    # if the domain is in the permissive map, then set it to be confined
    # permissive. if the domain is in the confined map, then there really
    # isnt much else to do but leave it confined. if the domain isnt in
    # the permissive or confined maps then determine if the domain should
    # be unconfined.
    #
    ifelse(permissive_domain($1), $1, `polaris_permissive_domain_setup($1)',
           confined_domain($1), $1, `',
           `polaris_domain_maybe_unconfined($1)')
)

#####
## <summary>
## Creates types and rules for a basic
## polaris process domain.
## </summary>
## <param name="stem">
## <summary>
## Stem for the domain. Name is constructed as polaris_stem_t
## </summary>
## </param>
#
template(`polaris_process_domain_template`,`
    type polaris_$1_t;
    type polaris_$1_exec_t;

    polaris_process_domain(polaris_$1_t, polaris_$1_exec_t)
    ifdef(polaris_permissive,`
        permissive polaris_$1_t;
    `)
)

polaris_btrace_data_client_template($1)
polaris_maroon_data_client_template($1)
polaris_crft_data_client_template($1)
polaris_process_proc_kpageflags_template($1)

```

```

    polaris_process_uswap_access(polaris_${1}_t, $1, "$1")
)

#####
## <summary>
## Creates types and rules for a basic
## polaris process domain.
## </summary>
## <param name="stem">
## <summary>
## Stem for the domain. Name is constructed as polaris_stem_t
## </summary>
## </param>
#
template(`polaris_utility_domain_template`,`
    type polaris_${1}_t;
    type polaris_${1}_exec_t;

    polaris_utility_domain(polaris_${1}_t, polaris_${1}_exec_t)
    ifdef(polaris_permissive,`
        permissive polaris_${1}_t;
    `)
)

polaris_btrace_data_client_template($1)
polaris_maroon_data_client_template($1)
polaris_crft_data_client_template($1)
polaris_process_proc_kpageflags_template($1)
)

#####
## <summary>
## Allow the specified domain to execute polaris domain
## process in the caller domain.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_exec`,`
    gen_require(`
        attribute polaris_exec_domain;
    `)

    can_exec($1, polaris_exec_domain)
)

```

```
#####
## <summary>
## Allow the specified domain to read polaris domain
## executable file. I.e to get information from executables
## like binary trace info, trace key etc
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_read_exec_domain`,`
    gen_require(`
        attribute polaris_exec_domain;
        type bin_t;
    `)

    read_files_pattern($1, bin_t, polaris_exec_domain)
)

#####
## <summary>
## Allow the specified domain to receive signals from any
## polaris process.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_receive_signal_from_domain`,`
    gen_require(`
        attribute polaris_domain;
    `)

    allow polaris_domain $1:process signal_perms;
)

#####
## <summary>
## Systemd-tmpfiles utility creates an object
## in the tmp directories, with a private type using a type
## transition.
## Note rules to create files and directories which are
## performed by systemd-tmpfiles reside in /lib/tmpfiles.d/
```

```

## directory. And polaris specific rules are in binos.conf file.
## Note systemd-tmpfiles utility would use label from file_contexts
## to restore proper label. I.e the same effect could be achived by
## placing proper .fc expression.
## </summary>
## <param name="private type">
## <summary>
## The type of the object to be created.
## </summary>
## </param>
## <param name="object">
## <summary>
## The object class of the object being created.
## </summary>
## </param>
## <param name="name">
## <summary>
## The name of the object being created.
## </summary>
## </param>
#
interface(`polaris_systemd_tmpfiles_tmp_filetrans',`
    gen_require(`
        type systemd_tmpfiles_t;
    `)
    files_tmp_filetrans(systemd_tmpfiles_t, $1, $2, $3)
`)

#####
## <summary>
## socketat through get_netns_fd function call access
## /proc/pid/ns/net file
##
## Implementation notes:
##
## wants to read /proc/pid/ns/net but gets denial because our 3.10 kernel
## does not support nsfs yet, so /proc/pid/ns/net is marked as proc_t instead
## of be nsfs_t. For now allow read access to proc_t through
## kernel_system_state_reader attribute. Try to drop it in latter kernels
## type=AVC msg=audit(1479574148.450:70): avc: denied { open } for pid=27619 comm="smd"
## path="net:[4026531957]" dev="proc" ino=4026531957 scontext=system_u:system_r:polaris_smd_t:s0
## tcontext=system_u:object_r:proc_t:s0 tclass=file
## in 4.4 /proc/pid/ns/net inode is under nsfs_t, polaris_smd_t needs to
## open, getattr, and read from it
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.

```

```

## </summary>
## </param>
#
interface(`polaris_socketat_nsfs_read`,`
    kernel_read_system_state($1)
    fs_read_nsfs_files($1)
    gen_require(`
        type ifconfig_var_run_t;
    `)
    list_dirs_pattern($1, ifconfig_var_run_t, ifconfig_var_run_t)
`)

```

```
#####
```

```

## <summary>
## All namespace related operation to switch name space
## is covered under this macro.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_namespace_set_netns_with_etc`,`
    files_mounon_isid($1)
    files_mounon_rootfs($1)
    dev_mount_sysfs_fs($1)
    dev_unmount_sysfs_fs($1)
    sysnet_read_config($1)
    sysnet_write_config($1)
    sysnet_manage_config_dirs($1)
    files_rw_etc_files($1)
    allow $1 net_conf_t:file mounon;
    allow $1 etc_t:file mounon;
    allow $1 self:capability sys_chroot;
`)

```

```
#####
```

```

## <summary>
## process can execute libeiutil build_config_directory function
##
## Implementation notes:
## build_config_directory function from mgmt/libeiutil/src/eiutil.c
## calls glibc nftw function, which effectively walks whole file tree
## and execute given call back. While function is executed it needs
## access to all files and directories attributes also it wants to
## search all directories. But we will not grant search access to
## security_file_type, instead we will dontaudit those. Anyway no

```

```
## relevant config file should be under security_file_type directory.
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_libeiutil_build_config_directory`,`
```

```
files_getattr_all_files($1)
```

```
files_getattr_all_dirs($1)
```

```
files_read_all_symlinks($1)
```

```
files_list_non_security($1)
```

```
files_dontaudit_list_security_dirs($1)
```

```
`)
```

```
#####
```

```
## <summary>
```

```
## Allow the specified domain to read write from i2c device.
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_i2c_use`,`
```

```
gen_require(`
```

```
type device_t;
```

```
type polaris_i2c_device_t;
```

```
`)
```

```
rw_chr_files_pattern($1, device_t, polaris_i2c_device_t)
```

```
`)
```

```
#####
```

```
## <summary>
```

```
## Work (read, write, ioctl) with /dev/remap_mem0
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
#
```

```
interface(`polaris_remap_mem_dev_use`,`
```

```
gen_require(`
```

```

        type device_t;
    type polaris_remap_mem_device_t;
)
    write_chr_files_pattern($1, device_t, polaris_remap_mem_device_t)
    read_chr_files_pattern($1, device_t, polaris_remap_mem_device_t)
    allow $1 polaris_remap_mem_device_t:chr_file map;
)

#####
## <summary>
##   Allow the specified domain to read firmware files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_firmware_read`,`
    gen_require(`
        type polaris_firmware_t;
    `)

    read_files_pattern($1, polaris_firmware_t, polaris_firmware_t)
    # /firmware/* are link files, allow to follow symbolic link
    allow $1 polaris_firmware_t:lnk_file read;
    allow $1 polaris_firmware_t:dir read;
)

#####
## <summary>
##   Allow the specified domain to manage firmware files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_firmware_manage`,`
    gen_require(`
        type polaris_firmware_t;
    `)

    manage_files_pattern($1, polaris_firmware_t, polaris_firmware_t)
    manage_lnk_files_pattern($1, polaris_firmware_t, polaris_firmware_t)
    manage_dirs_pattern($1, polaris_firmware_t, polaris_firmware_t)
)

```

```
#####
## <summary>
##   Allow the specified domain to getattr of firmware files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_firmware_getattr`,`
    gen_require(`
        type polaris_firmware_t;
    `)

    getattr_files_pattern($1, polaris_firmware_t, polaris_firmware_t)
)

#####
## <summary>
##   Allow the specified domain to map of firmware files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_firmware_map`,`
    gen_require(`
        type polaris_firmware_t;
    `)

    read_files_pattern($1, polaris_firmware_t, polaris_firmware_t)
    allow $1 polaris_firmware_t:file map;
)

#####
## <summary>
##   Allow the specified domain to write relocations into text segment, deals
## with icc broken relocations.
##
## LOOK AT ME:
## Basically it deals with denials like this:
## type=AVC msg=audit(1475815369.598:3): avc: denied { execmod } for pid=4929 comm="cman_fp"
## path="/tmp/sw/mount/csr1000v-mono-universalk9.2016-10-
## 06_20.15_kamensky.SSA.pkg/usr/cpp/lib64/libcpp_client_ha_oor.so" dev="loop0" ino=7683
```

```

scontext=system_u:system_r:unconfined_service_t:s0 tcontext=system_u:object_r:lib_t:s0 tclass=file
## It happens because icc generates code with relocations in text segment and
## run-time linker is dealing with it by doing mprotect(WRITE), relocatings,
## mprotect(NO WRITE). Remove once icc compiled is fixed
##
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_icc_broken_relocations',`
    gen_require(`
        type lib_t;
    ')

    allow $1 lib_t:file execmod;
')

#####
## <summary>
##   Allow the specified domain to work with /dev/mem
##
## LOOK AT ME!!! LOOK AT ME!!! Missing driver: application works
## with /dev/mem directy
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_dev_mem_use',`
    dev_read_raw_memory($1)
    dev_write_raw_memory($1)
    allow $1 self:capability sys_rawio;
    gen_require(`
        type memory_device_t;
    ')

    allow $1 memory_device_t:chr_file map;
')

#####
## <summary>
##   Append to /tmp/etc file. First usage to update xinetd.conf
## files.
## </summary>

```

```

## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_etc_append`,`
  gen_require(`
    type polaris_etc_t;
  `)
  append_files_pattern($1, polaris_etc_t, polaris_etc_t)
`)

```

```
#####
```

```

## <summary>
##   Search /tmp/etc directory
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_etc_search`,`
  gen_require(`
    type polaris_etc_t;
  `)
  search_dirs_pattern($1, polaris_etc_t, polaris_etc_t)
`)

```

```
#####
```

```

## <summary>
## List the contents of /etc directories.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_etc_list`,`
  gen_require(`
    type polaris_etc_t;
  `)

  allow $1 polaris_etc_t:dir list_dir_perms;
`)

```

```
#####
## <summary>
## Allow domain to attach to TUN devices created by ifconfig_t subject.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`ifconfig_attach_tun_iface`,`
gen_require(`
type ifconfig_t;
`)

allow $1 ifconfig_t:tun_socket relabelfrom;
allow $1 self:tun_socket relabelto;
`)

```

```
#####
## <summary>
## Perms used by pidof
## binos/infra/systemd/scripts/errmsg.sh, might needs /dev/ttyS0
## access.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolebase/>
#
interface(`pidof_use`,`
# FIXME or fix labeling
# /sys/devices/system/cpu/online should be labeled cpu_online_t
# but for some reason this did not happen, grant perms for both
dev_read_sysfs($1)
dev_read_cpu_online($1)
# /proc scan
domain_read_all_domains_state($1)
kernel_list_proc($1)
`)

```

```
#####
## <summary>
## Script can execute errmsg function from
## binos/infra/systemd/scripts/errmsg.sh, might needs /dev/ttyS0
## access.

```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_script_errmsg_use`,`
  # send to syslog (journal), iosd outputs to console if up
  logging_send_syslog_msg($1)
  # check if iosd is up and find its pid and if ttyS0 is opened
  pidof_use($1)
  # if FDs dont have ttyS0 it sends to console itself
  term_use_unallocated_ttys($1)
`)

#####
## <summary>
##   Allow the specified domain to read ebf (explicit
##   bindind) files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_ebf_map`,`
  gen_require(`
    type polaris_ebf_t;
  `)

  read_files_pattern($1, polaris_ebf_t, polaris_ebf_t)
  allow $1 polaris_ebf_t:file map;
`)

#####
## <summary>
##   Allow the specified domain to execute show_version command
##   for given executable label
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <param name="subject_exec">

```

```

## <summary>
## Domain of executable that version can be checked
## </summary>
## </param>
#
interface(`polaris_show_version',`
    read_files_pattern($1, $2, $2)
    allow $1 $2:file map;
`)

#####
## <summary>
## Configure the polaris domain as permissive
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolebase/>
#
interface(`polaris_permissive_domain_setup',`
    gen_require(
        type $1;
    )

    permissive $1;
)

#####
## <summary>
## Creates types and rules for process access to uswap feature.
## Ability to create file/folder under /bootflash/.USWAP/"FRU", and
## map file.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <param name="stem">
## <summary>
## Stem for the object label. Name is constructed as
## polaris_"stem"_uswap_files_t. It should be the short
## form of the process name.

```

```

## E.g., for IOSd polaris_iosd_uswap_files_t.
## </summary>
## </param>
## <param name="name">
## <summary>
## The name of the object being created.
## Name of the folder created by the process for
## creating the uswap files.
## </summary>
## </param>
#
template(`polaris_process_uswap_access`,`
    gen_require(`
        type polaris_uswap_files_t;
    `)
    type polaris_$2_uswap_files_t;
    files_type(polaris_$2_uswap_files_t)
    polaris_pfile_type(polaris_$2_uswap_files_t)

    filetrans_pattern($1, polaris_uswap_files_t, polaris_$2_uswap_files_t, { file dir})
    manage_dirs_pattern($1, polaris_$2_uswap_files_t, polaris_$2_uswap_files_t)
    manage_files_pattern($1, polaris_$2_uswap_files_t, polaris_$2_uswap_files_t)
    manage_lnk_files_pattern($1, polaris_$2_uswap_files_t, polaris_$2_uswap_files_t)
    allow $1 polaris_$2_uswap_files_t:file map;

    # allow access to pvp to clean-up the process related uswap file/folder
    gen_require(`
        type polaris_pvp_t;
    `)
    allow polaris_pvp_t polaris_$2_uswap_files_t:dir { read remove_name rmdir write };
    allow polaris_pvp_t polaris_$2_uswap_files_t:file unlink;
)

#####
## <summary>
## Allow process access to to access page related files such as "/proc/kpageflags"
## </summary>
## <param name="stem">
## <summary>
## Stem for the domain. Name is constructed as polaris_stem_t
## </summary>
## </param>
#
template(`polaris_process_proc_kpageflags_template`,`
    gen_require(`
        type proc_t;
    `)
    allow polaris_$1_t proc_t:file { open read };

```

)

```
#####  
## <summary>  
## transition context of fman(rp/fp) created iptbl tmp files related to acl mgmt.  
## </summary>  
## <param name="domain">  
## <summary>  
## Domain allowed access.  
## </summary>  
## </param>  
#  
interface(`polaris_fman_acl_iptbl_tmp_file`,`  
    gen_require(`  
        type polaris_iptbl_tmp_t;  
    `)  
    files_tmp_filetrans($1, polaris_iptbl_tmp_t, file, "iptbl.v4")  
    files_tmp_filetrans($1, polaris_iptbl_tmp_t, file, "iptbl.v6")  
    manage_files_pattern($1, polaris_iptbl_tmp_t, polaris_iptbl_tmp_t)  
`)  
)
```

```
#####  
## <summary>  
## Manage files/folders in /tmp/rsync_log_dir.  
## </summary>  
## <param name="domain">  
## <summary>  
## Domain allowed access.  
## </summary>  
## </param>  
#  
interface(`polaris_manage_rsync_tmplog_dir`,`  
    gen_require(`  
        type polaris_rsync_tmp_t;  
    `)  
    manage_files_pattern($1, polaris_rsync_tmp_t, polaris_rsync_tmp_t)  
    manage_dirs_pattern($1, polaris_rsync_tmp_t, polaris_rsync_tmp_t)  
`)  
)
```

```
#####  
## <summary>  
## Manage cerr shared memory /dev/shm/cerrno_dll.  
## </summary>  
## <param name="domain">  
## <summary>  
## Domain allowed access.
```

```

## </summary>
## </param>
#
interface(`polaris_cerr_shm_manage',`
    gen_require(`
        type tmpfs_t;
        type polaris_cerr_shm_t;
    `)
    fs_getattr_tmpfs($1)
    manage_files_pattern($1, tmpfs_t, polaris_cerr_shm_t)
    allow $1 polaris_cerr_shm_t:file map;
    fs_tmpfs_filetrans($1, polaris_cerr_shm_t, file, "cerno_dll")
)

#####
## <summary>
##   Manage shared memory for vrf - /dev/shm/vrf_shm.
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_vrf_shm_manage',`
    gen_require(`
        type tmpfs_t;
        type polaris_vrf_shm_t;
    `)
    fs_getattr_tmpfs($1)
    manage_files_pattern($1, tmpfs_t, polaris_vrf_shm_t)
    allow $1 polaris_vrf_shm_t:file map;
    filetrans_pattern($1, tmpfs_t, polaris_vrf_shm_t, file, "vrf_shm")
)

#####
## <summary>
##   On-demand creation of vrf-based netns using "ip netns".
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_vrf_netns_manage',`
    polaris_vrf_shm_manage($1)
)

```

```

kernel_rw_net_sysctls($1)
polaris_lfts_dev_use($1)

sysnet_exec_ifconfig($1)
sysnet_manage_ifconfig_run($1)
gen_require(`
    type ifconfig_var_run_t;
`)
allow $1 ifconfig_var_run_t:file { create mounton open read };
allow $1 ifconfig_var_run_t:dir mounton;

gen_require(`
    type polaris_ip_linux_port_var_t;
`)
read_files_pattern($1, var_t, polaris_ip_linux_port_var_t)
getattr_files_pattern($1, var_t, polaris_ip_linux_port_var_t)
`)

#####
## <summary>
## Allow read/write of network state directory files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
##
#
interface(`polaris_kernel_rw_network_state_files`,`
gen_require(`
    type proc_net_t;
`)

rw_files_pattern($1, proc_net_t, proc_net_t)
`)
#
#####
## <summary>
## Allow the specified domain to send signals to
## Binos shell
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_send_signal_to_shell`,`
    gen_require(`
        type polaris_shell_t;
    `)

    allow $1 polaris_shell_t:process signal_perms;
)

#####
## <summary>
## Execute curl in the curl domain.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_curl_domtrans`,`
    gen_require(`
        type polaris_curl_t, polaris_curl_exec_t;
    `)

    corecmd_search_bin($1)
    domtrans_pattern($1, polaris_curl_exec_t, polaris_curl_t)
)

#####
## <summary>
## Manage files and directories in /tmp directory with rsync_tmp_t
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`rsync_tmp_manage`,`
    gen_require(`
        type rsync_tmp_t;
    `)

    manage_dirs_pattern($1, rsync_tmp_t, rsync_tmp_t)
    manage_files_pattern($1, rsync_tmp_t, rsync_tmp_t)
    manage_lnk_files_pattern($1, rsync_tmp_t, rsync_tmp_t)
    manage_fifo_files_pattern($1, rsync_tmp_t, rsync_tmp_t)
)

#####

```

```

## <summary>
##   Allow the specified domain to read /tmp/ldwm_envelope file
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
interface(`polaris_ldwm_envelope_read`,`
  gen_require(`
    type polaris_ldwm_envelope_tmp_t;
  `)

  read_files_pattern($1, polaris_ldwm_envelope_tmp_t, polaris_ldwm_envelope_tmp_t)
`)

#####
## <summary>
##   This is copied from polarisngwc.if since other platforms may also
##   read/write /sys/devices files. In addition to ngwc, tsn requires it.
##   Write into /sys/devices/virtual/misc/ggpiio/gpio_out_assert sysfs files.
##       or /sys/devices/platform/cpn-110-master/cpn-110-master sysfs
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
interface(`polaris_ggpiio_dev_read_write`,`
  gen_require(`
    type polaris_sysfs_ggpiio_t;
  `)
  read_files_pattern($1, polaris_sysfs_ggpiio_t, polaris_sysfs_ggpiio_t)
  write_files_pattern($1, polaris_sysfs_ggpiio_t, polaris_sysfs_ggpiio_t)
`)

#####
## <summary>
##   Manage files under /bootflash/certs , cert files for AP
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_wlc_ap_cert_manage`,`
  gen_require(`

```

```

    type polaris_ap_cert_file_t;
)

manage_files_pattern($1, polaris_ap_cert_file_t, polaris_ap_cert_file_t)
manage_dirs_pattern($1, polaris_ap_cert_file_t, polaris_ap_cert_file_t)

)

#####
## <summary>
##   Manage SERDES key directoy and files
##   SERDES library stores info in /tmp/serdes_asic_key_dir/*
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_serdes_asic_key_tmp_manage`,`
    gen_require(`
        type polaris_serdes_asic_key_tmp_t;
    `)

    files_tmp_filetrans($1, polaris_serdes_asic_key_tmp_t, {dir file}, "serdes_asic_key_dir")

    manage_dirs_pattern($1, {tmp_t polaris_serdes_asic_key_tmp_t}, polaris_serdes_asic_key_tmp_t)
    manage_files_pattern($1, polaris_serdes_asic_key_tmp_t, polaris_serdes_asic_key_tmp_t)
)

#####
## <summary>
##   Manage polaris_tech_support_tmp_t in /tmp.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
interface(`polaris_tech_support_tmp_read`,`
    gen_require(`
        type polaris_tech_support_tmp_t;
    `)

    read_files_pattern($1, polaris_tech_support_tmp_t, polaris_tech_support_tmp_t)
)

#####

```

```

## <summary>
##   Getattr of any file under /proc/*/fd/?. Typically
## run by lsof.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
interface(`polaris_proc_fd_all_getattr`,`

    domain_read_all_domains_state($1)
    files_getattr_all_files($1)
    files_getattr_all_dirs($1)
    files_getattr_all_sockets($1)
    files_getattr_all_pipes($1)
    files_getattr_all_chr_files($1)
    files_getattr_all_symlinks($1)
    files_read_all_dirs_except($1)
    dev_getattr_all_chr_files($1)
    dev_getattr_all_blk_files($1)
    dev_getattr_mtrr_dev($1)

    # misc socket and fifo files got created under label of its process domain
    # and since domain labels are not in file_type attribute, need special
    # permission
    gen_require(`
        attribute domain;
    `)
    allow $1 domain:{socket socket_class_set fifo_file} getattr;
    # access sysctl_rpc_t
    kernel_read_rpc_sysctls($1)
`)

#####
## <summary>
##   Manage files and directories sysfs, This should only be used
##   if the interface needs sysfs_t create access. Otherwise please use
##   dev_rw_sysfs
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_sysfs_manage`,`

```

```

gen_require(
    type sysfs_t;
)
manage_files_pattern($1, sysfs_t, sysfs_t)
)

#####
## <summary>
## Check access to the init/systemd executable.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_init_access_check`,`
gen_require(
    type init_exec_t;
)
init_access_check($1)
allow $1 init_exec_t:file {open read};
allow $1 init_exec_t:lnk_file read_lnk_file_perms;
)

#####
## <summary>
## Manage polaris_manage_rommon_info in /tmp.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
interface(`polaris_manage_rommon_info`,`
gen_require(
    type polaris_rommon_info_tmp_t;
)
manage_files_pattern($1, polaris_rommon_info_tmp_t, polaris_rommon_info_tmp_t)
)

#####
## <summary>
## Allow the specified domain to manage tamlib debug file /bootflash/tamlib_dbg_log
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.

```

```

## </summary>
## </param>
#
interface(`polaris_tamlib_dbg_file_manage`,`
    gen_require(`
        type polaris_tamlib_dbg_file_t;
    `)
    filetrans_pattern($1, polaris_disk_bootflash_t, polaris_tamlib_dbg_file_t, file, "tamlib_dbg_log")
    manage_files_pattern($1, polaris_tamlib_dbg_file_t, polaris_tamlib_dbg_file_t)
`)

```

```
#####
```

```

## <summary>
## Allow access to /dev/DDR
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_DDR_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_DDR_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_DDR_device_t)
    read_chr_files_pattern($1, device_t, polaris_DDR_device_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscommon.if

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```

#
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#
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#

```

```
## <summary>Polaris tams_rp Policy Rules.</summary>
```

```
#####
```

```

## <summary>
## Allow polaris_tams_rp_t unix stream socket connect
## </summary>
## <param name="domain">

```

```
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_tams_rp_socket_connect`,`
    gen_require(`
        type polaris_tams_rp_t;
    `)
    allow $1 polaris_tams_rp_t:unix_stream_socket connectto;
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristamsrp.if

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```
#
# August 2017, Shawn Lu
#
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#
```

```
# polariswncd file contexts place holder
```

```
/mnt/images(/.*)?    gen_context(system_u:object_r:polaris_wlc_ap_images_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswncd.fc

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```
#
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#
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#
```

```
# /harddisk /harddisk -> /misc/scratch
```

```
/harddisk    gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)
```

```
/misc/scratch    gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
```

```
/usb0        gen_context(system_u:object_r:removable_t,s0)
```

```
/usb1        gen_context(system_u:object_r:removable_t,s0)
```

```
/misc/usb0    gen_context(system_u:object_r:removable_t,s0)
```

```
/misc/usb1    gen_context(system_u:object_r:removable_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisstorage.fc

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#

/tmp/tam\_cfg\_done(/.\*)? gen\_context(system\_u:object\_r:polaris\_tam\_tmp\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisesgtamcfg.fc

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#

# February 2020, Victor Kamensky

#

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#

## <summary>Polaris omp Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisomp.if

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#

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#

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#

## <summary>Polaris TDLDB Policy Rules.</summary>

#####

# Polaris tdldb (infra/tdllib)

#####

#####

## <summary>

## Make specified domain as one of tdldb types.

## </summary>

## <param name="domain">

## <summary>

```

## The domain serving as polaris_tlddb type
## </summary>
## </param>
#
interface(`polaris_tlddb_type`,`
    gen_require(`
        attribute polaris_tlddb;
    `)
    typeattribute $1 polaris_tlddb;
files_type($1)
`)

#####
## <summary>
## List directories in /tmp/[rp]fp[cc]/tlddb directories.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_tlddb_list_dirs`,`
    gen_require(`
        type polaris_tlddb_t;
    `)
    list_dirs_pattern($1, polaris_tlddb_t, polaris_tlddb_t)
`)

#####
## <summary>
## Use tlddb database files in /tmp/[rp]fp[cc]/tlddb
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <param name="database_label">
## <summary>
## Database file label.
## </summary>
## </param>
## <param name="object">
## <summary>
## Database file name. Also used to derive lock file name.
## </summary>
## </param>

```

```

#
interface(`polaris_tdlldb_use`,`
gen_require(`
type polaris_tdlldb_t;
    type tmp_t;
`)
manage_dirs_pattern($1, polaris_tdlldb_t, polaris_tdlldb_t)
manage_files_pattern($1, polaris_tdlldb_t, $2)
allow $1 $2:file map;
allow $1 polaris_tdlldb_t:file lock;
type_transition $1 polaris_tdlldb_t : file $2 "$3";
type_transition $1 polaris_tdlldb_t : file $2 "$3.lock";

# manage /var/tmp/tdlddb_ene_fifo.0xYYYYYY files - it seems there is
# no way to assign separate label to them
manage_fifo_files_pattern($1, tmp_t, tmp_t)

# tdlldb_database_handle_open_internal through libuuid calls
# uuid_generate_time_generic, which needs access to udp socket
# once it reaches get_node_id function
allow $1 self:udp_socket { create ioctl };
)

#####
## <summary>
##   Setup tdlldb database persistent files in
##       /tmp/[rp|fp|cc]/tdlddb/persist-config
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <param name="database_label">
##   <summary>
##     Database file label.
##   </summary>
## </param>
## <param name="object">
##   <summary>
##     Database file name. Also used to derive lock file name.
##   </summary>
## </param>
#
interface(`polaris_tmp_tdlldb_persist_setup`,`
gen_require(`
type polaris_tdlldb_t;
type polaris_tdlldb_persist_t;

```

```
)
filetrans_pattern($1, polaris_tdldb_t, polaris_tdldb_persist_t, dir, "persistent-config")
# allow creation of /tmp/rp/tdldb/persistent-config
manage_dirs_pattern($1, polaris_tdldb_t, polaris_tdldb_persist_t)
# Manage files inside of its own polaris_tdldb_persist_t directories
manage_files_pattern($1, polaris_tdldb_persist_t, polaris_tdldb_persist_t)
')
```

```
#####
```

```
## <summary>
##   Manage tdldb directories
## </summary>
## <param name="domain">
##   <summary>
##     The domain serving as polaris_tdldb type
##   </summary>
## </param>
#
```

```
interface(`polaris_tdldb_manage_dirs`,`
    gen_require(`
        type polaris_tdldb_t;
    `)
    manage_dirs_pattern($1, polaris_tdldb_t, polaris_tdldb_t)
')
```

```
#####
```

```
## <summary>
##   Use polaris_dir_db_tdldb_t database.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <infoflow type="none"/>
#
```

```
interface(`polaris_dir_db_tdldb_dir_use`,`
    gen_require(`
        type polaris_dir_db_tdldb_t;
    `)

    polaris_tdldb_use($1, polaris_dir_db_tdldb_t, DB_DIR)
')
```

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\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristdldb.if

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```

#
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#
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#

policy_module(polariswncd, 1.0);

gen_require(
    type polaris_wncd_t;
)

polaris_btrace_data_manage(polaris_wncd_t)
polaris_crft_data_manage(polaris_wncd_t)
polaris_chasfs_manage(polaris_wncd_t)
polaris_tdlresolve_read(polaris_wncd_t)
polaris_tdlldb_list_dirs(polaris_wncd_t)
polaris_cpld_read(polaris_wncd_t)
polaris_lua_read(polaris_wncd_t)
polaris_flashlib_read(polaris_wncd_t)

polaris_ripc_sman_ui_serv_connect(polaris_wncd_t)

polaris_db_tdlldb_dir_use(polaris_wncd_t)

#wncd need setrlimit to change limit of resource
allow polaris_wncd_t self:process setrlimit;
allow polaris_wncd_t self:capability sys_resource;

#allow tcp connection from http port
allow polaris_wncd_t self:capability net_bind_service;
corenet_tcp_bind_http_port(polaris_wncd_t)

#allow udp for dhcpd
corenet_udp_bind_dhcpd_port(polaris_wncd_t)
corenet_udp_bind_generic_node(polaris_wncd_t)
allow polaris_wncd_t self:udp_socket { create_socket_perms recv_msg send_msg };

#allow AF_PACKET
allow polaris_wncd_t self:capability net_raw;
allow polaris_wncd_t self:packet_socket { create_socket_perms recv_msg send_msg };

# required in function ewlc_capwap_dgram_srvr_state_update()
allow polaris_wncd_t self:rawip_socket { create_socket_perms setopt ioctl };

corenet_raw_bind_generic_node(polaris_wncd_t)

```

```

gen_require(
    type port_t;
)
allow polaris_wncd_t port_t:rawip_socket name_bind;

#allow to read /etc/passwd
auth_use_nsswitch(polaris_wncd_t)

#stuff related to vrf support of the socket
polaris_lfts_dev_use(polaris_wncd_t)
polaris_socketat_nsfs_read(polaris_wncd_t)

#each instance of wncd has a devshell support
corenet_tcp_bind_polaris_wncd_devshell_port(polaris_wncd_t)

# extra instances of wncd do set up cyan database for given elastic number
polaris_dyncfg_setup(polaris_wncd_t)

allow polaris_wncd_t self:capability dac_override;

# wncd does ionotify for /bootflash/apple_device_map.xml file in
# wsa_notif_register_filepath function
polaris_bootflash_read(polaris_wncd_t)
polaris_persistent_watch(polaris_wncd_t)

# manage pem certificates on /bootflash
polaris_persistent_manage(polaris_wncd_t)

# for /dev/shm/cerrno_dll
polaris_cerr_shm_manage(polaris_wncd_t)

#####
# For ewlc, wncd and wncmgrd needs access to files under /mnt/images/...these
# are related to AccessPoint images
#####

type polaris_wlc_ap_images_t;
files_type(polaris_wlc_ap_images_t)

# wncd calls ewlc_get_ap_sw_version() to open/read
# /tmp/sw/rp/0/0/rp_wlc/mount/mnt/images/ap.pri/version.info
# call-chain: main -> ewlc_app_context_init -> wncd_evlib_app_init_cb ->
# ewlc_capwapac_lib_init -> capwapac_init_default_config -> ewlc_get_ap_sw_version
polaris_wlc_ap_images_read(polaris_wncd_t)

polaris_odm_clnt2svr_mqipc_create(polaris_wncd_t)

# wncd works with AF_NETLINK NLMSG_APP_SIP ewlc_sip_netlink_sock_init

```

```

allow polaris_wncd_t self:netlink_socket create_socket_perms;

logging_send_syslog_msg(polaris_wncd_t)

# binds to mdns port from mdns_ipv4_socket_init function
corenet_udp_bind_mdns_port(polaris_wncd_t)

# bind CAPWAP control and data
corenet_udp_bind_polaris_capwap_ctr_port(polaris_wncd_t)
corenet_udp_bind_polaris_capwap_data_port(polaris_wncd_t)

#allow read/write/mmap access to awips file
gen_require(
type polaris_awips_signature_file_t;
)
allow polaris_wncd_t polaris_awips_signature_file_t:file { map read open getattr unlink };

# allow read / write / unlink access to /bootflash/certs
polaris_wlc_ap_cert_manage(polaris_wncd_t)

# wncd ewlc-lisp interaction module, connect to lisp map-server on port 4342
corenet_tcp_connect_lisp_cons_control_port(polaris_wncd_t)

# binds to mdns bcp port from mdns bcp function
corenet_udp_bind_mdns_bcp_port(polaris_wncd_t)

#DB persistence
polaris_tdlbpersist_setup(polaris_wncd_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswncd.te

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```

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#

```

## <summary>Polaris ngwc\_fed\_debug Policy Rules.</summary>

#####

## <summary>

## Connect to and send messages to /tmp/idope\_svr and

## /tmp/shfwd\_svr unix datagram sockets.

## </summary>

## <param name="domain">

```

## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_fed_debug_sock_write`,
    gen_require(`
        type polaris_fed_debug_sock_t;
        type polaris_ngwc_fed_debug_mgr_t;
        type tmp_t;
    `)

    allow $1 self:unix_stream_socket {create_socket_perms};
    allow $1 polaris_ngwc_fed_debug_mgr_t:unix_stream_socket {connectto};
    write_sock_files_pattern($1, tmp_t, polaris_fed_debug_sock_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngwcfeddebug.if

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```

#
# March 2017, Victor Kamensky
#
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#

```

```
policy_module(polarispsd, 1.0);
```

```

gen_require(`
    type polaris_psd_t;
`)

```

```

polaris_btrace_data_manage(polaris_psd_t)
polaris_crft_data_manage(polaris_psd_t)
polaris_chasfs_manage(polaris_psd_t)
polaris_tdlresolve_read(polaris_psd_t)
polaris_tdlldb_list_dirs(polaris_psd_t)
polaris_cpld_read(polaris_psd_t)
polaris_flashlib_read(polaris_psd_t)

```

```
polaris_ripc_sman_ui_serv_connect(polaris_psd_t)
```

```
polaris_db_tdlldb_dir_use(polaris_psd_t)
```

```

# allow read of /etc/passwd
auth_use_nsswitch(polaris_psd_t)

```

```

# allow to read /proc/meminfo
kernel_read_system_state(polaris_psd_t)

# psd wants to run /usr/binos/bin/cfgwr command
corecmd_exec_bin(polaris_psd_t)
corecmd_exec_shell(polaris_psd_t)

# provide objstore access
polaris_disk_objstore_read(polaris_psd_t)

# work with /tmp files (/tmp/sh-thd-*)
type polaris_psd_tmp_t;
files_tmp_file(polaris_psd_tmp_t)
files_tmp_filetrans(polaris_psd_t, polaris_psd_tmp_t, file)
manage_files_pattern(polaris_psd_t, polaris_psd_tmp_t, polaris_psd_tmp_t)

polaris_obfl_data_read(polaris_psd_t)

allow polaris_psd_t self:capability { fsetid };

allow polaris_psd_t self:capability { dac_override chown };
allow polaris_psd_t self:netlink_route_socket rw_netlink_socket_perms;

logging_send_syslog_msg(polaris_psd_t)

#psd need detect which terminal to use as console, need read permission to ttyS*
# psd need read/write grub configure file /boot/grub/menu.*: read /boot/grub/menu.bak
# , generate /boot/grub/menu.list
# read access to bootflash for bin file loading
ifdef(`vxe_family',`
term_use_unallocated_ttys(polaris_psd_t)
polaris_legacy_grub_manage(polaris_psd_t)
polaris_bootflash_read(polaris_psd_t)
polaris_disk_varied_read(polaris_psd_t)
`)
ifdef(`wlc_family',`
term_use_unallocated_ttys(polaris_psd_t)
bootloader_rw_config(polaris_psd_t)
polaris_disk_varied_read(polaris_psd_t)
`)
ifdef(`vwlc_platform',`
polaris_legacy_grub_manage(polaris_psd_t)
polaris_bootflash_read(polaris_psd_t)
`)

polaris_disk_csl_manage(polaris_psd_t)

```

```

fs_read_nsfs_files(polaris_psd_t)

polaris_dyncfg_tmp_read(polaris_psd_t)

polaris_read_packages_conf(polaris_psd_t)

# handling /tmp/restconf
type polaris_restconf_t;
files_tmp_file(polaris_restconf_t)

files_tmp_filetrans(polaris_psd_t, polaris_restconf_t, dir, "restconf")
polaris_restconf_manage(polaris_psd_t)

# handling /tmp/.ncsshd_authorized_keys
type polaris_ncsshd_keys_t;
files_tmp_file(polaris_ncsshd_keys_t);

files_tmp_filetrans(polaris_psd_t, polaris_ncsshd_keys_t, dir, ".ncsshd_authorized_keys")
polaris_ncsshd_keys_manage(polaris_psd_t)

polaris_tmp_tlddb_persist_setup(polaris_psd_t)

polaris_tlddbpersist_setup(polaris_psd_t)

# write mem updates the grub config files
optional_policy('
polaris_grubcfg_manage(polaris_psd_t)
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispsd.te

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```

#
# February 2020, Victor Kamensky
#
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#
```

## <summary>Polaris fpm Policy Rules.</summary>

#####

```

## <summary>
##   Write fpm /var/run socket file
## </summary>
## <param name="domain">
##   <summary>
```

```

## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_fpm_var_sock_write`,`
    gen_require(`
        type polaris_fpm_t;
        type polaris_fpm_var_run_t;
        type var_run_t;
    `)
    write_sock_files_pattern($1, var_run_t, polaris_fpm_var_run_t)
    allow $1 polaris_fpm_t:unix_stream_socket { connectto };
)

#####
## <summary>
## Manage mqipc fpm2fmrp shared memory file in /dev/shm directory
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_fpm2fmrp_mqipc_use`,`
    gen_require(`
        type polaris_fpm2fmrp_mqipc_t;
    `)
    polaris_mqipc_use($1, polaris_fpm2fmrp_mqipc_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfpm.if

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```

#
# Oct 2020, Xin Xiang
#
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#

```

```
## <summary>Polaris Doppler Policy Rules.</summary>
```

```

#####
## <summary>
## Work (read, write, ioctl) with /dev/dmabap
## </summary>

```

```

## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_dmammap_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_dmammap_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_dmammap_device_t)
    read_chr_files_pattern($1, device_t, polaris_dmammap_device_t)
    allow $1 polaris_dmammap_device_t:chr_file map;
`)

```

```

#####
## <summary>
##   Work (read, write, ioctl) with /dev/dmamap
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_dplr_dev_use`,`
    gen_require(`
        type device_t;
        type polaris_dplr_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_dplr_device_t)
    read_chr_files_pattern($1, device_t, polaris_dplr_device_t)
    allow $1 polaris_dplr_device_t:chr_file map;
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdoppler.if

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```

#
# March 2017, Victor Kamensky
#
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#

```

/usr/binos/conf/pvp.sh -- gen\_context(system\_u:object\_r:polaris\_pvp\_exec\_t,s0)

```

/tmp/sw/rp/max_elastic_bays -- gen_context(system_u:object_r:polaris_pvp_tmp_t,s0)
/tmp/iosd_memory_share -- gen_context(system_u:object_r:polaris_pvp_tmp_t,s0)

/tmp/cc/0(/.*)?          gen_context(system_u:object_r:polaris_pvp_tmp_t,s0)
/tmp/cc/*/pvp(/.*)?     gen_context(system_u:object_r:polaris_pvp_tmp_t,s0)
/tmp/fp/pvp(/.*)?      gen_context(system_u:object_r:polaris_pvp_tmp_t,s0)
/tmp/rp/pvp/oir/sw_lic_service(/.*)?  gen_context(system_u:object_r:polaris_chasfs_t,s0)
/tmp/rp/pvp/oir/sw_csl_service(/.*)?  gen_context(system_u:object_r:polaris_chasfs_t,s0)
/tmp/rp/pvp/oir/rp_(.*)/(.*)?        gen_context(system_u:object_r:polaris_chasfs_t,s0)
/tmp/rp/pvp(/.*)?          gen_context(system_u:object_r:polaris_pvp_tmp_t,s0)

/tmp/rp/pvp/sai_process(/.*)?        gen_context(system_u:object_r:polaris_pvp_sai_t,s0)
/tmp/fp/pvp/sai_process(/.*)?        gen_context(system_u:object_r:polaris_pvp_sai_t,s0)
/tmp/cc/*/pvp/sai_process(/.*)?      gen_context(system_u:object_r:polaris_pvp_sai_t,s0)

/tmp/rp/pvp/process_state(/.*)?      gen_context(system_u:object_r:polaris_process_state_t,s0)
/tmp/fp/pvp/process_state(/.*)?      gen_context(system_u:object_r:polaris_process_state_t,s0)
/tmp/cc/pvp/process_state(/.*)?      gen_context(system_u:object_r:polaris_process_state_t,s0)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispvp.fc
```

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```
#
```

```
# August 2017, Shawn Lu
```

```
#
```

```
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```

```
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```

```
#
```

```
policy_module(polariswlc, 1.0);
```

```
# hanet driver used by vwlc, is there better place for it?
```

```
type polaris_hanet_device_t;
```

```
dev_node(polaris_hanet_device_t)
```

```
gen_require(`
```

```
    type polaris_wlc_ap_images_t;
```

```
    type mnt_t;
```

```
    attribute polaris_extended_domain;
```

```
')
```

```
# transition when /mnt/images is created
```

```
filetrans_pattern(polaris_extended_domain, mnt_t, polaris_wlc_ap_images_t, dir, "images")
```

```
# epaN and epactrlN devices
```

```
type polaris_epa_device_t;
```

```
dev_node(polaris_epa_device_t)
```

```

# luna_fpgs device
type polaris_luna_mbfpga_device_t;
dev_node(polaris_luna_mbfpga_device_t)

# astro device
type polaris_astro_device_t;
dev_node(polaris_astro_device_t)

# cpp_il device
type polaris_cpp_il_device_t;
dev_node(polaris_cpp_il_device_t)

# oob_evfc device
type polaris_oob_evfc_device_t;
dev_node(polaris_oob_evfc_device_t)

# on vwlc all processes read grub_cisco_version in polaris_disk_varied_t
gen_require(
    attribute polaris_domain;
)
polaris_disk_varied_search(polaris_domain)

# /dev/sfp-ktr device
type polaris_sfp_katar_device_t;
dev_node(polaris_sfp_katar_device_t)

# handle /tmp/vxe_disk_XXX_YYY files
ifdef(^vwlc_platform',`
gen_require(
    type unconfined_service_t;
)
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v1")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v2")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v3")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v4")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_gpt_v1")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_gpt_v2")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_gpt_v3")
polaris_boot_tmp_manage(unconfined_service_t)
)
type polaris_grubver_t;
polaris_pfile_type(polaris_grubver_t)

type polaris_grub_bios_t;
polaris_pfile_type(polaris_grub_bios_t)

#on vWLC, all processes read grubenv from EFI disk partition.

```

```
gen_require(  
    attribute polaris_domain;  
)  
polaris_vwlc_grub_efi_search(polaris_domain)
```

```
type polaris_vwlcinstall_info_t;  
polaris_pfile_type(polaris_vwlcinstall_info_t)
```

```
gen_require(  
    type unconfined_service_t;  
    type polaris_disk_varied_t;  
)  
# unconfined service create /boot/.install_info if does not exist yet  
filetrans_pattern(unconfined_service_t, polaris_disk_varied_t, polaris_vwlcinstall_info_t, file, ".install_info")
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisvwlc.te

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```
#  
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#
```

```
/tmp/sw/boot/rmonbifo(/.*)?          gen_context(system_u:object_r:polaris_rmonbifo_tmp_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrmonbifo.fc

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```
#  
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#
```

```
# polarisbtlogger file contexts place holder
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtlogger.fc

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```
#  
# March 2017, Victor Kamensky
```

```

#
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#

policy_module(polarisnifmgr, 1.0);

gen_require(`
    type polaris_nif_mgr_t;
`)

polaris_ripc_sman_ui_serv_connect(polaris_nif_mgr_t)

polaris_btrace_data_manage(polaris_nif_mgr_t)
polaris_crft_data_manage(polaris_nif_mgr_t)
polaris_chasfs_manage(polaris_nif_mgr_t)
polaris_tdlresolve_read(polaris_nif_mgr_t)
polaris_tdlldb_list_dirs(polaris_nif_mgr_t)
polaris_cpld_read(polaris_nif_mgr_t)
polaris_lua_read(polaris_nif_mgr_t)
polaris_flashlib_read(polaris_nif_mgr_t)

#If romvar is not set, Set Rommon env variable needs write permission
polaris_flashlib_write(polaris_nif_mgr_t)

logging_send_syslog_msg(polaris_nif_mgr_t)

# set out of band interface mac set_oobndif_mac
allow polaris_nif_mgr_t self:tcp_socket ioctl;

# communication between the nif manager and fed use directories under /tmp/sv
polaris_sv_tmp_use(polaris_nif_mgr_t)

# /dev/shm/sdm access
optional_policy(`
polaris_sdm_shm_manage(polaris_nif_mgr_t)
`)

# open /dev/ttyS0 console in sco_sys_init_sw_params
term_use_unallocated_ttys(polaris_nif_mgr_t)

# allow create and write access to the /proc/*_sesa file

gen_require(`
type polaris_proc_sesa_t;
`)
polaris_proc_sesa_create_write(polaris_nif_mgr_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisnifmgr.te

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#

# April 2017, Victor Kamensky

#

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#

policy\_module(polarisdmiopdatamgrd, 1.0);

gen\_require(^

    type polaris\_dmi\_opdatamgrd\_t;

')

# allow to get getattr of /proc file system

domain\_read\_all\_domains\_state(polaris\_dmi\_opdatamgrd\_t)

# work with /var/log/dmi/ files

type polaris\_dmi\_var\_log\_t;

logging\_log\_file(polaris\_dmi\_var\_log\_t)

manage\_files\_pattern(polaris\_dmi\_opdatamgrd\_t, polaris\_dmi\_var\_log\_t, polaris\_dmi\_var\_log\_t)

manage\_dirs\_pattern(polaris\_dmi\_opdatamgrd\_t, polaris\_dmi\_var\_log\_t, polaris\_dmi\_var\_log\_t)

logging\_log\_filetrans(polaris\_dmi\_opdatamgrd\_t, polaris\_dmi\_var\_log\_t, dir, "dmi")

polaris\_chasfs\_manage(polaris\_dmi\_opdatamgrd\_t)

polaris\_btrace\_data\_manage(polaris\_dmi\_opdatamgrd\_t)

polaris\_cpld\_read(polaris\_dmi\_opdatamgrd\_t)

polaris\_boot\_tmp\_read(polaris\_dmi\_opdatamgrd\_t)

# run ldd, which in turns execve "ld.so --verify"

libs\_exec\_ld\_so(polaris\_dmi\_opdatamgrd\_t)

# this (opdatamgrd.sh) process is shell script need permission to execute shell

# and variety of small util commands under bin\_t

corecmd\_exec\_shell(polaris\_dmi\_opdatamgrd\_t)

corecmd\_exec\_bin(polaris\_dmi\_opdatamgrd\_t)

# allow read of /etc/passwd

# passwd\_file\_t:file { getattr open read };

auth\_use\_nsswitch(polaris\_dmi\_opdatamgrd\_t)

# opdatamgrd.sh calls ps command

# ps needs access to /sys/devices/system/cpu/online

dev\_read\_sysfs(polaris\_dmi\_opdatamgrd\_t)

```

# ps needs access to proc_t
kernel_read_system_state(polaris_dmi_opdatamgrd_t)

allow polaris_dmi_opdatamgrd_t self:capability { sys_resource dac_override };

# handling of /tmp/stream-parsers
type polaris_dmi_parser_t;
files_tmp_file(polaris_dmi_parser_t)
files_tmp_filetrans(polaris_dmi_opdatamgrd_t, polaris_dmi_parser_t, dir, "stream-parsers")
manage_dirs_pattern(polaris_dmi_opdatamgrd_t, tmp_t, polaris_dmi_parser_t)
manage_files_pattern(polaris_dmi_opdatamgrd_t, polaris_dmi_parser_t, polaris_dmi_parser_t)

mount_domtrans(polaris_dmi_opdatamgrd_t)

# confd_cli runs under our label
allow polaris_dmi_opdatamgrd_t self:tcp_socket create_socket_perms;

# runs ps that wants to have access to containers files
optional_policy(`
polaris_disk_vman_dir_list(polaris_dmi_opdatamgrd_t)
`)
polaris_sandbox_file_dir_list(polaris_dmi_opdatamgrd_t)
polaris_sandbox_file_getattr(polaris_dmi_opdatamgrd_t)

# runs find to search all 'parse.*' files
# find . -perm /111 -name parse.* -exec basename {} ;
# LOOK AT ME it seems that it does search on customer visible
# directories, can and whether customer supposed to be
# able give parse.* files to dmi opdatamgrd, could it
# be exploited?
files_getattr_all_files(polaris_dmi_opdatamgrd_t)
files_getattr_all_dirs(polaris_dmi_opdatamgrd_t)

# access to /dev/pts/0
ssh_use_ptys(polaris_dmi_opdatamgrd_t)

# directly work with to /dev/ttyS1
term_use_unallocated_ttys(polaris_dmi_opdatamgrd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmiopdatamgrd.te
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```

```

#

## <summary>Polaris ngwc_fed Policy Rules.</summary>

#####

## <summary>
##   Connect to and send messages to /tmp/dbgmn_log_sv unit
## datagram socket.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_fed_sock_write`,`
    gen_require(`
        type polaris_fed_sock_t;
        type polaris_ngwc_fed_t;
        type tmp_t;
    `)

    allow $1 self:unix_stream_socket {create_socket_perms};
    allow $1 polaris_ngwc_fed_t:unix_stream_socket {connectto};
    write_sock_files_pattern($1, tmp_t, polaris_fed_sock_t)
)

#####

## <summary>
##   Allow the specified domain able to read fed /tmp files.
## </summary>
## <param name="type">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <param name="object">
##   <summary>
##     File name in /tmp that the fed domain creates and other domains
##     access.
##   </summary>
## </param>
#
interface(`polaris_fed_tmp_files_read`,`
    gen_require(`
        type polaris_fed_tmp_t;
    `)
)

```

```

    read_files_pattern($1, polaris_fed_tmp_t, polaris_fed_tmp_t)
)

#####
## <summary>
##   Allow to read and write /tmp/epc_ws/fed_to_wif_pipe file.
## </summary>
## <param name="domain">
##   <summary>
##     epc_ws_liaison and ngwc-fed pipe interaction.
##   </summary>
## </param>
#
interface(`polaris_fed_shm_file_read`,`
    gen_require(`
        type polaris_ngwc_fed_t;
    `)

    allow $1 polaris_ngwc_fed_t:shm { associate read unix_read unix_write write };
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngwcfed.if

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```

#
# August 2017, Shawn Lu
#
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#

```

# polarismobilityd file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismobilityd.fc

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```

#
# April 2017, Victor Kamensky
#
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#

```

policy\_module(polarisdmivtyserverutild, 1.0);

```

gen_require(`

```

```

    type polaris_dmi_vtyserverutild_t;
)

polaris_btrace_data_manage(polaris_dmi_vtyserverutild_t)
polaris_chasfs_manage(polaris_dmi_vtyserverutild_t)
polaris_tdlresolve_read(polaris_dmi_vtyserverutild_t)
polaris_tdlldb_list_dirs(polaris_dmi_vtyserverutild_t)
polaris_cpld_read(polaris_dmi_vtyserverutild_t)
polaris_flashlib_read(polaris_dmi_vtyserverutild_t)

allow polaris_dmi_vtyserverutild_t self:socket { connect create read write };

type polaris_dmi_vtyserverutild_tmp_t;
files_tmp_file(polaris_dmi_vtyserverutild_tmp_t)
files_tmp_filetrans(polaris_dmi_vtyserverutild_t, polaris_dmi_vtyserverutild_tmp_t, fifo_file, ".DMI_FIFO")
manage_fifo_files_pattern(polaris_dmi_vtyserverutild_t,
polaris_dmi_vtyserverutild_tmp_t,polaris_dmi_vtyserverutild_tmp_t)

logging_send_syslog_msg(polaris_dmi_vtyserverutild_t)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmi_vtyserverutild.te
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```

dnl

dnl April 2018, Victor Kamensky

dnl

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dnl

```

define(`mqipc_stem', `translit(patsubst($1, `~mqipc$', ``), `-', `_)')
define(`mqipc_label', `format(`polaris_%s_mqipc_t', mqipc_stem($1))')

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_mqipc.m4
No license file was found, but licenses were detected in source scan.

```

#

# November 2020, Christine Hwang

#

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#

## <summary>Polaris Cabo GNSS Policy Rules.</summary>

#####

## <summary>

```

## Work (read, write, ioctl) with /dev/ttyS1
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_cabo_gnss_dev_use',`
    gen_require(`
        type device_t;
        type polaris_cabo_gnss_device_t;
    `)
    write_chr_files_pattern($1, device_t, polaris_cabo_gnss_device_t)
    read_chr_files_pattern($1, device_t, polaris_cabo_gnss_device_t)
    allow $1 polaris_cabo_gnss_device_t:chr_file map;
)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscabognss.if
```

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```

#
# June 2017, Victor Kamensky
#
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#

policy_module(polaristservice, 1.0);

polaris_process_domain_template(tservice_telnet)

polaris_process_domain_template(tservice_ssh)

gen_require(`
    type inetd_exec_t, inetd_t;
`)
domtrans_pattern(polaris_tservice_telnet_t, inetd_exec_t, inetd_t)

polaris_chasfs_manage(polaris_tservice_telnet_t)
polaris_btrace_data_manage(polaris_tservice_telnet_t)
polaris_cpld_read(polaris_tservice_telnet_t)
polaris_boot_tmp_read(polaris_tservice_telnet_t)
polaris_rmonbifo_tmp_read(polaris_tservice_telnet_t)

corecmd_exec_shell(polaris_tservice_telnet_t)
corecmd_exec_bin(polaris_tservice_telnet_t)

```

```

# allow read of /etc/passwd
auth_use_nsswitch(polaris_tservice_telnet_t)

dmidecode_domtrans(polaris_tservice_telnet_t)

allow polaris_tservice_telnet_t self:capability sys_resource;
kernel_read_system_state(polaris_tservice_telnet_t)

gen_require(`
    type initrc_exec_t, initrc_t;
`)
domtrans_pattern(polaris_tservice_telnet_t, initrc_exec_t, initrc_t)

# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_tservice_telnet_t)

# /bin/sh /usr/binos/conf/mcp_chvrf.sh eobc /usr/sbin/xinetd -f
# /tmp/chassis/local/rp/chasfs/rp/0/0/etc/telnet/xinetd_telnetd.conf
polaris_chvrf_domtrans(polaris_tservice_telnet_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristservice.te
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#
# August 2017, Shawn Lu
#
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#

## <summary>Polaris WLC Platform Policy Rules.</summary>

#####
## <summary>
##   Work (read, write, ioctl) with /dev/hanet
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_hanet_dev_use',`
    gen_require(`
        type device_t;
        type polaris_hanet_device_t;

```

```

)
    write_chr_files_pattern($1, device_t, polaris_hanet_device_t)
    read_chr_files_pattern($1, device_t, polaris_hanet_device_t)
)

#####
## <summary>
##   Work (read, write, ioctl) with /dev/epa[0-9]* and
## /dev/epactrl[0-9]*
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_epa_dev_use`,`
gen_require(`
    type device_t;
    type polaris_epa_device_t;
)
    write_chr_files_pattern($1, device_t, polaris_epa_device_t)
    read_chr_files_pattern($1, device_t, polaris_epa_device_t)
    allow $1 polaris_epa_device_t:chr_file map;
)

#####
## <summary>
##   Work (read, write, ioctl) with /dev/luna_mbfpga device
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_luna_mbfpga_dev_use`,`
gen_require(`
    type device_t;
    type polaris_luna_mbfpga_device_t;
)
    write_chr_files_pattern($1, device_t, polaris_luna_mbfpga_device_t)
    read_chr_files_pattern($1, device_t, polaris_luna_mbfpga_device_t)
)

#####
## <summary>
##   Work (read, write, ioctl) with /dev/astro device

```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_astro_dev_use',`
gen_require(`
    type device_t;
    type polaris_astro_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_astro_device_t)
    read_chr_files_pattern($1, device_t, polaris_astro_device_t)
)

#####
## <summary>
##   Work (read, write, ioctl) with /dev/cpp_il device
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_cpp_il_dev_use',`
gen_require(`
    type device_t;
    type polaris_cpp_il_device_t;
`)
    write_chr_files_pattern($1, device_t, polaris_cpp_il_device_t)
    read_chr_files_pattern($1, device_t, polaris_cpp_il_device_t)
)

#####
## <summary>
##   Work (read, write, ioctl) with /dev/oob_evfc device
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_oob_evfc_dev_use',`
gen_require(`
    type device_t;

```

```

type polaris_oob_evfc_device_t;
)
    write_chr_files_pattern($1, device_t, polaris_oob_evfc_device_t)
    read_chr_files_pattern($1, device_t, polaris_oob_evfc_device_t)
)

#####
## <summary>
##   Work (read, write, ioctl) with /dev/sfp-ktr device
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_sfp_katar_dev_use`,`
gen_require(`
    type device_t;
    type polaris_sfp_katar_device_t;
)
    write_chr_files_pattern($1, device_t, polaris_sfp_katar_device_t)
    read_chr_files_pattern($1, device_t, polaris_sfp_katar_device_t)
)

#####
## <summary>
## Read vWLC install info files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_vwlcinstall_info_read`,`
gen_require(`
    type polaris_vwlcinstall_info_t;
)
    read_files_pattern($1, polaris_vwlcinstall_info_t, polaris_vwlcinstall_info_t)
    list_dirs_pattern($1, polaris_vwlcinstall_info_t, polaris_vwlcinstall_info_t)
)

#####
## <summary>
## Read /dev/vda1 device the efi partition
## </summary>
## <param name="domain">

```

```

## <summary>
##     Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_vwlc_grub_info_read`,`
gen_require(`
type polaris_grubver_t;
type polaris_grub_bios_t;
type polaris_grub_efi_t;
`)
read_files_pattern($1, polaris_grubver_t, polaris_grubver_t)
read_files_pattern($1, polaris_grub_bios_t, polaris_grub_bios_t)
read_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
list_dirs_pattern($1, polaris_grubver_t, polaris_grubver_t)
list_dirs_pattern($1, polaris_grub_bios_t, polaris_grub_bios_t)
list_dirs_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
`)

```

```
#####
```

```

## <summary>
## Search /dev/vda1 device the efi partition
## </summary>
## <param name="domain">
##     <summary>
##         Domain allowed access.
##     </summary>
## </param>
#
interface(`polaris_vwlc_grub_efi_search`,`
gen_require(`
type polaris_grub_efi_t;
`)
search_dirs_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
`)

```

```
#####
```

```

## <summary>
## Work (read, write, ioctl) with /dev/vda1 device
## </summary>
## <param name="domain">
##     <summary>
##         Domain allowed access.
##     </summary>
## </param>
#
interface(`polaris_vwlc_grub_efi_use`,`
gen_require(`

```

```
type polaris_grub_efi_t;
')
write_chr_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
read_chr_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
')
```

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\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswlc.if

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dnl April 2018, Victor Kamensky

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```
define(^database_stem', `translit(patsubst($1, `_DB$', `'), `A-Z', `a-z'))
```

```
define(^database_label', `format(^polaris_%s_db_tdldb_t', database_stem($1)))
```

```
define(^database_use_map', `defn(format(^`database_use_map[%s-%s]", `$1', `$2'))')
```

```
define(^database_use_map_set', `define(format(^`database_use_map[%s-%s]", `$1', `$2'), `$3'))
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_database\_db.m4

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#

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#

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#

```
policy_module(polarisdmi_dmi_authd, 1.0);
```

```
gen_require(^
```

```
    type polaris_dmi_dmi_authd_t;
```

```
')
```

```
polaris_btrace_data_manage(polaris_dmi_dmi_authd_t)
```

```
polaris_crft_data_manage(polaris_dmi_dmi_authd_t)
```

```
polaris_chasfs_manage(polaris_dmi_dmi_authd_t)
```

```
polaris_tdlresolve_read(polaris_dmi_dmi_authd_t)
```

```
polaris_tdldb_list_dirs(polaris_dmi_dmi_authd_t)
```

```
polaris_cpld_read(polaris_dmi_dmi_authd_t)
```

```
polaris_flashlib_read(polaris_dmi_dmi_authd_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_dmi_dmi_authd_t)
```

```

polaris_db_tdlldb_dir_use(polaris_dmi_dmiauthd_t)

# dmiauthd creates and binds to /tmp/.DmiAuth.socket unix socket
type polaris_dmi_dmiauthd_tmp_t;
files_tmp_file(polaris_dmi_dmiauthd_tmp_t)
files_tmp_filetrans(polaris_dmi_dmiauthd_t, polaris_dmi_dmiauthd_tmp_t, { sock_file fifo_file })
manage_sock_files_pattern(polaris_dmi_dmiauthd_t, polaris_dmi_dmiauthd_tmp_t, polaris_dmi_dmiauthd_tmp_t)
manage_fifo_files_pattern(polaris_dmi_dmiauthd_t, polaris_dmi_dmiauthd_tmp_t, polaris_dmi_dmiauthd_tmp_t)

# dmiauthd creates diagnostic files in /tmp/netconf-yang-diag
type polaris_dmi_dmiauthd_tmp_diags_t;
files_tmp_file(polaris_dmi_dmiauthd_tmp_diags_t)
files_tmp_filetrans(polaris_dmi_dmiauthd_t, polaris_dmi_dmiauthd_tmp_diags_t, dir, "netconf-yang-diag")
polaris_dmiauthd_tmp_diags_manage(polaris_dmi_dmiauthd_t)

logging_send_syslog_msg(polaris_dmi_dmiauthd_t)

# read confd log file and push into btrace
polaris_confd_log_read(polaris_dmi_dmiauthd_t)

# from dmilib iospc_connect through libiospc iospc_token_read_from_file
# iospc_token_read_from_file reads /tmp/rp/.iospc_dmiauthd
polaris_dmiauthd_token_read(polaris_dmi_dmiauthd_t)

gen_require(
    type polaris_confd_tmp_t;
)
# This is applicable to wireless platforms running in standby monitoring mode
# wherein dmiauthd create temporary files in /tmp/confd upon switchover and
# trigger ConfD restart.
manage_files_pattern(polaris_dmi_dmiauthd_t, polaris_confd_tmp_t, polaris_confd_tmp_t)
manage_dirs_pattern(polaris_dmi_dmiauthd_t, polaris_confd_tmp_t, polaris_confd_tmp_t)

#####
# "show netconf-yang diagnostics [all | last | message]" invokes
# /usr/binos/conf/dmid_diag_logs.sh
#####

polaris_utility_domain_template(dmid_diag_logs)

polaris_bexecute_domtrans(polaris_dmi_dmiauthd_t)
polaris_bexecute_domain(polaris_dmid_diag_logs_t, polaris_dmid_diag_logs_exec_t)

# signal sent during the show cmd
polaris_send_signal_to_bexecute(polaris_dmi_dmiauthd_t)

# read files in /tmp/netconf-yang-diag

```

```

polaris_dmiauthd_tmp_diags_read(polaris_dmid_diag_logs_t)

# need write/ioctl/getattr access for pipes
polaris_dmiauthd_use_fifo(polaris_dmid_diag_logs_t)

polaris_use_btrace_fifo(polaris_dmid_diag_logs_t)
polaris_btrace_data_manage(polaris_dmid_diag_logs_t)
polaris_chasfs_read(polaris_dmid_diag_logs_t)
polaris_cpld_read(polaris_dmid_diag_logs_t)
dev_read_sysfs(polaris_dmid_diag_logs_t)
auth_use_nsswitch(polaris_dmid_diag_logs_t)
polaris_boot_tmp_read(polaris_dmid_diag_logs_t)
fs_getattr_tmpfs(polaris_dmid_diag_logs_t)

# bash tmp files, such as /tmp/sh-thd-1599654988
type polaris_dmid_diag_logs_tmp_t;
files_tmp_file(polaris_dmid_diag_logs_tmp_t)
files_tmp_filetrans(polaris_dmid_diag_logs_t, polaris_dmid_diag_logs_tmp_t, file)
manage_files_pattern(polaris_dmid_diag_logs_t, polaris_dmid_diag_logs_tmp_t, polaris_dmid_diag_logs_tmp_t)

# execute /bin/sed
corecmd_exec_bin(polaris_dmid_diag_logs_t)

#####
# Allow diagnostics feature to create log file in bootflash
#####

# execute /bin/tar
corecmd_exec_bin(polaris_dmi_dmiauthd_t)
# tar reads /etc/passwd
auth_use_nsswitch(polaris_dmi_dmiauthd_t)
# create log file in bootflash
polaris_bootflash_manage(polaris_dmi_dmiauthd_t)

#####

allow polaris_dmi_dmiauthd_t self:capability sys_resource;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmidmiauthd.te
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# September 2017, Victor Kamensky
#
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#

```

```

policy_module(polarisunconfined, 1.0);

## <desc>
## <p>
## IOSd runs in unconfined mode
## </p>
## </desc>
gen_tunable(polaris_unconfined_iosd, true)

## <desc>
## <p>
## All polaris processes except IOSd runs in unconfined mode
## </p>
## </desc>
gen_tunable(polaris_unconfined_all, true)

gen_require(
    type apmd_t;
    type auditd_t;
    type inetd_t;
    type init_t;
    type initrc_t;
    type journalctl_t;
    type rpcbind_t;
    type rpcd_t;
    type sshd_t;
    type syslogd_t;
    type telnetd_t;
    type udev_t;
    type vird_t;
    type virtlogd_t;
    type vmtools_t;
    type ifconfig_t;
    type setfiles_t;
    type iptables_t;
    type virsh_t;
    type svirt_t;
    type svirt_lxc_net_t;
    type vird_lxc_t;
)

polaris_domain_maybe_unconfined(apmd_t)
polaris_domain_maybe_unconfined(auditd_t)
polaris_domain_maybe_unconfined(inetd_t)
polaris_domain_maybe_unconfined(init_t)
polaris_domain_maybe_unconfined(initrc_t)
polaris_domain_maybe_unconfined(journalctl_t)

```

polaris\_domain\_maybe\_unconfined(rpcbind\_t)  
polaris\_domain\_maybe\_unconfined(rpcd\_t)  
polaris\_domain\_maybe\_unconfined(sshd\_t)  
polaris\_domain\_maybe\_unconfined(syslogd\_t)  
polaris\_domain\_maybe\_unconfined(telnetd\_t)  
polaris\_domain\_maybe\_unconfined(udev\_t)  
polaris\_domain\_maybe\_unconfined(virt\_d\_t)  
polaris\_domain\_maybe\_unconfined(virtlogd\_t)  
polaris\_domain\_maybe\_unconfined(vmtools\_t)  
polaris\_domain\_maybe\_unconfined(ifconfig\_t)  
polaris\_domain\_maybe\_unconfined(setfiles\_t)  
polaris\_domain\_maybe\_unconfined(iptables\_t)  
polaris\_domain\_maybe\_unconfined(virsh\_t)  
polaris\_domain\_maybe\_unconfined(svirt\_t)  
polaris\_domain\_maybe\_unconfined(svirt\_lxc\_net\_t)  
polaris\_domain\_maybe\_unconfined(virt\_d\_lxc\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisunconfined.te

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#

# May 2017, Victor Kamensky

#

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#

/opt/confd/bin/confd -- gen\_context(system\_u:object\_r:polaris\_confd\_exec\_t,s0)

/opt/confd/lib/confd/lib/core/confd/priv/mmap\_schema --

gen\_context(system\_u:object\_r:polaris\_mmap\_schema\_exec\_t,s0)

/usr/binos/bin/vip-confd-startup.sh -- gen\_context(system\_u:object\_r:polaris\_confd\_exec\_t,s0)

/usr/bin/vconfd\_script\_cdb\_backup.sh -- gen\_context(system\_u:object\_r:polaris\_confd\_exec\_t,s0)

/usr/binos/conf/execute\_conf\_d\_cli.sh -- gen\_context(system\_u:object\_r:polaris\_confd\_cli\_exec\_t,s0)

/usr/binos/conf/confd\_logs.sh -- gen\_context(system\_u:object\_r:polaris\_confd\_exec\_t,s0)

/var/confd0(/.\*)? gen\_context(system\_u:object\_r:polaris\_confd\_var\_t,s0)

/dev/shm/confd(/.\*)? gen\_context(system\_u:object\_r:polaris\_confd\_shm\_t,s0)

/tmp/confd(/.\*)? gen\_context(system\_u:object\_r:polaris\_confd\_tmp\_t,s0)

/tmp/confd\_cli(/.\*)? gen\_context(system\_u:object\_r:polaris\_confd\_cli\_tmp\_t,s0)

/tmp/vconfd(/.\*)? gen\_context(system\_u:object\_r:polaris\_vconfd\_tmp\_t,s0)

/usr/bin/vconfd\_script\_\*.admin\_tech.\*.sh -- gen\_context(system\_u:object\_r:polaris\_admin\_tech\_exec\_t,s0)

/var/tech(/.\*)? gen\_context(system\_u:object\_r:polaris\_admin\_tech\_var\_t,s0)

/bootflash/admintech gen\_context(system\_u:object\_r:polaris\_admin\_tech\_data\_t,s0)

/bootflash/admintech\_trace gen\_context(system\_u:object\_r:polaris\_admin\_tech\_data\_t,s0)

/bootflash/MEMORY\_LOG\_\*.text gen\_context(system\_u:object\_r:polaris\_admin\_tech\_data\_t,s0)

/bootflash/collated\_log\_\* gen\_context(system\_u:object\_r:polaris\_admin\_tech\_data\_t,s0)

```
/bootflash/tracelogs/cia-netconf-trace\.* gen_context(system_u:object_r:polaris_confd_var_log_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisconfd.fc
```

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```
#
```

```
# July 2020, Victor Kamensky
```

```
#
```

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```

```
#
```

```
/tmp/HTX-IOX(/.*)? gen_context(system_u:object_r:polaris_htx_iox_tmp_t,s0)
```

```
# /dev/sppi_memif htx works with
```

```
/dev/sppi_memif -c gen_context(system_u:object_r:polaris_sppi_memif_device_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarishtx.fc
```

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```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

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```

```
#
```

```
/usr/binos/conf/periodic.sh -- gen_context(system_u:object_r:polaris_periodic_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisperiodic.fc
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
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```

```
# All rights reserved
```

```
#
```

```
policy_module(polarislua, 1.0);
```

```
#####
```

```
# Lua policy
```

```
#####
```

```
type polaris_lua_file_t;
files_type(polaris_lua_file_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarislua.te
```

No license file was found, but licenses were detected in source scan.

```
#
# November 2020, Christine Hwang
#
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#
```

```
policy_module(polariscabognss, 1.0);
```

```
gen_require(
    type polaris_cabo_gnss_t;
)
```

```
polaris_btrace_data_manage(polaris_cabo_gnss_t)
polaris_chasfs_manage(polaris_cabo_gnss_t)
polaris_tdlresolve_read(polaris_cabo_gnss_t)
polaris_cpld_read(polaris_cabo_gnss_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_cabo_gnss_t)
```

```
# Allow sysfs read for platform ID and
# r/w on /sys/class/gpio/export
polaris_sysfs_manage(polaris_cabo_gnss_t)
dev_manage_sysfs_dirs(polaris_cabo_gnss_t)
```

```
# Allow Cabo GNSS to access/modify to GPS GPIO
polaris_ggpio_dev_read_write(polaris_cabo_gnss_t)
```

```
# Allow Cabo GNSS access to /dev/ppp0
dev_rw_realtime_clock(polaris_cabo_gnss_t)
```

```
# allow system time capability to check for system timeout
allow polaris_cabo_gnss_t self:capability sys_time;
```

```
# Label Cabo GNSS TTY device
type polaris_cabo_gnss_device_t;
dev_node(polaris_cabo_gnss_device_t)
```

```
polaris_cabo_gnss_dev_use(polaris_cabo_gnss_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscabognss.te

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dnl

dnl April 2018, Victor Kamensky

dnl

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dnl

dnl WLC Platform Max Bay Limits

max\_bay\_map\_set(^rp', `per\_bay', 0)

max\_bay\_map\_set(^cc', `per\_bay', 1)

max\_bay\_map\_set(^fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(^rp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(^cc', `per\_bay', 1)

max\_bay\_ripc\_map\_set(^fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(^rp', `global', 0)

max\_bay\_ripc\_map\_set(^cc', `global', 1)

max\_bay\_ripc\_map\_set(^fp', `global', 0)

dnl in elastic scope each process has its own value

max\_elastic\_map\_set(^rp', `elastic', BPROC\_ODM, 1)

max\_elastic\_map\_set(^cc', `elastic', BPROC\_ODM, 1)

max\_elastic\_map\_set(^fp', `elasite', BPROC\_ODM, 1)

max\_elastic\_map\_set(^rp', `elastic', BPROC\_WNCD, 7)

max\_elastic\_map\_set(^cc', `elastic', BPROC\_WNCD, 7)

max\_elastic\_map\_set(^fp', `elastic', BPROC\_WNCD, 7)

max\_elastic\_ripc\_map\_set(^rp', `elastic', BPROC\_ODM, 1)

max\_elastic\_ripc\_map\_set(^cc', `elastic', BPROC\_ODM, 1)

max\_elastic\_ripc\_map\_set(^fp', `elasite', BPROC\_ODM, 1)

max\_elastic\_ripc\_map\_set(^rp', `elastic', BPROC\_WNCD, 7)

max\_elastic\_ripc\_map\_set(^cc', `elastic', BPROC\_WNCD, 7)

max\_elastic\_ripc\_map\_set(^fp', `elastic', BPROC\_WNCD, 7)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/wlcmapi.m4

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#

# August 2017, Shawn Lu

#

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#

## <summary>Polaris rogued Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrogued.if

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#

# August 2017, Victor Kamensky

#

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#

## <summary>Polaris flashcheck Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisflashcheck.if

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#

# March 2017, Victor Kamensky

#

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#

policy\_module(polarissmd, 1.0);

```
gen_require(  
    type polaris_smd_t;  
)
```

#####

# mqipc manual, one that missing in platform tdl file

#####

polaris\_btrace\_data\_manage(polaris\_smd\_t)

polaris\_crft\_data\_manage(polaris\_smd\_t)

polaris\_chasfs\_manage(polaris\_smd\_t)

polaris\_tdlresolve\_read(polaris\_smd\_t)

polaris\_tdlldb\_list\_dirs(polaris\_smd\_t)

polaris\_cpld\_read(polaris\_smd\_t)

polaris\_lua\_read(polaris\_smd\_t)

polaris\_flashlib\_read(polaris\_smd\_t)

polaris\_ripc\_sman\_ui\_serv\_connect(polaris\_smd\_t)

```

# working with smd persistent/ disk files
type polaris_smd_disk_t;
polaris_disk_type(polaris_smd_disk_t)

manage_files_pattern(polaris_smd_t, polaris_smd_disk_t, polaris_smd_disk_t)

polaris_db_tdlldb_dir_use(polaris_smd_t)

# access to persist tdlldb (e.g. .dbpersist)
polaris_tdlldbpersist_setup(polaris_smd_t)

# for /dev/shm/cerrno_dell
polaris_cerr_shm_manage(polaris_smd_t)

ifdef(`nyquist_platform',`
gen_require(`
    type polaris_bt_logger_smd_mqipc_t;
`)
# smd may start first and create this mqipc channel
polaris_mqipc_create_name(polaris_smd_t, polaris_bt_logger_smd_mqipc_t, bt_logger_smd)
`)

polaris_lfts_dev_use(polaris_smd_t)

allow polaris_smd_t self:capability { sys_resource net_bind_service };

polaris_socketat_nsfs_read(polaris_smd_t)

allow polaris_smd_t self:process setrlimit;

corenet_tcp_bind_polaris_smd_devshell_port(polaris_smd_t)
corenet_tcp_bind_generic_node(polaris_smd_t)
allow polaris_smd_t self:tcp_socket { getattr setopt getopt bind create listen accept connect read write
name_connect };
allow polaris_smd_t self:capability { net_admin sys_admin };

allow polaris_smd_t self:udp_socket { create_socket_perms recv_msg send_msg };
#smutil_msg_event_cb_handler() uses netlink
allow polaris_smd_t self:netlink_socket { bind create };

# LOOK AT ME: now smd may open arbitrary port on forwarding VRF (16)
# but in SELinux there is no way to differentiate between port spaces
# accross VRFs or namespaces. For now let's grant smd_t access to all ports
# regardless of VRF. In future investigate ways to be more restrictive
corenet_udp_bind_generic_port(polaris_smd_t)
corenet_udp_sendrecv_generic_port(polaris_smd_t)
# LOOK AT ME: grants access to udp_bind on any node, but if we can

```

```

# be more specific and bind only to forwarding VRF related interfaces
corenet_udp_bind_generic_node(polaris_smd_t)

# smd want to listent on http port 80 on VRF_FWD, for webauth code please see
# smd/webauth/src/webauth_io.c
corenet_tcp_bind_http_port(polaris_smd_t)

allow polaris_smd_t self:capability dac_override;

logging_send_syslog_msg(polaris_smd_t)

allow polaris_smd_t self:capability net_raw;
allow polaris_smd_t self:packet_socket { create_socket_perms recv_msg send_msg };

# for access to disk html files (for webauth)
polaris_persistent_read(polaris_smd_t)

# transition for dc_profile_dir to polaris_smd_disk_t
gen_require(
    type initrc_t;
)
polaris_bootflash_filetrans(initrc_t, polaris_smd_disk_t, dir, "dc_profile_dir")

# SANET is listening on http port(CSCvb41802)
# Hence, it needs to follow the same rule as nginx is using in polarisnginx.te
# FIXME: add interface to allow bind to port 1025-65535
corenet_tcp_bind_all_ports(polaris_smd_t)

polaris_issu_tmp_files_read(polaris_smd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissmd.te
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#
# February 2020, Victor Kamensky
#
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#

/usr/binos/conf/cedge-tanman.sh -- gen_context(system_u:object_r:polaris_cedge_tanman_exec_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscedgetanman.fc
No license file was found, but licenses were detected in source scan.

#

```

```
# March 2017, Victor Kamensky
#
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#

/usr/binos/conf/droputil.sh -- gen_context(system_u:object_r:polaris_droputil_exec_t,s0)

/tmp/rp/dropbox(/.*)? gen_context(system_u:object_r:polaris_droputil_tmp_t,s0)
/tmp/rp/droputil(/.*)? gen_context(system_u:object_r:polaris_droputil_tmp_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdroputil.fc
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#
# March 2017, Victor Kamensky
#
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#

policy_module(polarisvman, 1.0);

gen_require(
    type polaris_vman_t;
)

polaris_btrace_data_manage(polaris_vman_t)
polaris_crft_data_manage(polaris_vman_t)
polaris_chasfs_manage(polaris_vman_t)
polaris_tdlresolve_read(polaris_vman_t)
polaris_tdlldb_list_dirs(polaris_vman_t)
polaris_cpld_read(polaris_vman_t)
polaris_flashlib_read(polaris_vman_t)

polaris_ripc_sman_ui_serv_connect(polaris_vman_t)

polaris_db_tdlldb_dir_use(polaris_vman_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_vman_t)

polaris_rmonbifo_tmp_read(polaris_vman_t)
polaris_boot_tmp_read(polaris_vman_t)

logging_send_syslog_msg(polaris_vman_t)
```

```

modutils_read_module_deps(polaris_vman_t)
modutils_read_module_config(polaris_vman_t)
modutils_manage_module_config(polaris_vman_t)
modutils_domtrans_insmod(polaris_vman_t)
files_read_kernel_modules(polaris_vman_t)

corecmd_exec_bin(polaris_vman_t)
corecmd_exec_shell(polaris_vman_t)

# ifconfig related, ifconfig is executed in its own context
sysnet_domtrans_ifconfig(polaris_vman_t)

# VMAN calls vman_set_congestion_control_multiplex when the count
# of the bridge users reaches 2 and needs write permissions on
# contdev_multiplex
dev_rw_sysfs(polaris_vman_t)
fs_getattr_xattr_fs(polaris_vman_t)

virt_stream_connect(polaris_vman_t)
virt_read_pid_files(polaris_vman_t)

fs_rw_cgroup_files(polaris_vman_t)
kernel_read_system_state(polaris_vman_t)
# allow vman to read /dev/pts/*
term_use_generic_ptys(polaris_vman_t)
#allow polaris_vman_t polaris_udev_tmp_files_t:file open;
polaris_udev_tmp_read(polaris_vman_t)
#allow vman to run brctl in it's own domain
brctl_domtrans(polaris_vman_t)
#allow vman to run /sbin/fsck in script
fstools_domtrans(polaris_vman_t)
#allow vman to mount rootfs on polaris_disk_vman_t
allow polaris_vman_t polaris_disk_vman_t:dir mounton;
fs_mount_xattr_fs(polaris_vman_t)
#allow vman have capability for modify owner of the file
allow polaris_vman_t self:capability { chown fowner fsetid };
#allow vman to bind to unreserved tcp ports while it searches for
#port available to guest console to listen on
corenet_tcp_bind_unreserved_ports(polaris_vman_t)

# working with vman /var/ files
type polaris_var_vman_t;
files_tmp_file(polaris_var_vman_t)
files_var_filetrans(polaris_vman_t, polaris_var_vman_t, dir, "virtual-instance")
manage_files_pattern(polaris_vman_t, polaris_var_vman_t, polaris_var_vman_t)
manage_dirs_pattern(polaris_vman_t, polaris_var_vman_t, polaris_var_vman_t)
manage_sock_files_pattern(polaris_vman_t, polaris_var_vman_t, polaris_var_vman_t)

```

```

# working with vman persisten files
type polaris_disk_vman_t;
polaris_disk_type(polaris_disk_vman_t)

gen_require(
    type polaris_disk_bootflash_t;
    type polaris_disk_harddisk_t;
)
filetrans_pattern(polaris_vman_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_disk_vman_t, dir,
"virtual-instance")
filetrans_pattern(polaris_vman_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_disk_vman_t, file,
"virtual-instance.conf")
filetrans_pattern(polaris_vman_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_disk_vman_t, dir,
"vman_fdb")

# allow creation of /bootflash/virtual-instance.conf file
manage_files_pattern(polaris_vman_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_disk_vman_t)
# allow creation of /bootflash/virtual-instance and /bootflash/vman_fdb directories
manage_dirs_pattern(polaris_vman_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_disk_vman_t)
# vman can manage files inside of its own polaris_disk_vman_t directories
manage_files_pattern(polaris_vman_t, polaris_disk_vman_t, polaris_disk_vman_t)

# after all above transition we need to grant vman right to work with any
# persistent storage file since it needs to access and write .ova files
polaris_persistent_manage(polaris_vman_t)

# vman uses netlink socket to talk to lxc watchdog driver
# please see binos/vman/src/vman_lxc_wd.c
allow polaris_vman_t self:netlink_generic_socket { create_socket_perms sendto recvfrom};

# vman calls tipc-config which in turns wants to create AF_TIPC socket
allow polaris_vman_t self:socket create_socket_perms;

# vman uses 'ip netns exec 0 ifconfig -a' command which in turns switches
# network namespace and need access to /proc/pid/ns/net file
fs_read_nsfs_files(polaris_vman_t)

# this label is created to exchange log related information between container and host.
type polaris_vman_log_t;
# By making this label belong to polaris persistent storage combined with vman inheriting rights
# to manage polaris_disk via polaris_persistent_manage(), vman gains rights to manage below dirs.
polaris_disk_type(polaris_vman_log_t)
filetrans_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_log_t, dir, "UtdIpsAlert-IOX" )
filetrans_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_log_t, dir, "UtdUrf-IOX" )
filetrans_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_log_t, dir, "UtdAmp-IOX" )
filetrans_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_log_t, dir, "UtdTls-IOX" )
filetrans_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_log_t, dir, "UtdLogMappings-IOX" )
allow polaris_vman_t polaris_vman_log_t:dir mounton;

```

```

# Allow vman to work with /bootflash/virtual-instance/UTD/rootfs
optional_policy(
    gen_require(
        type container_file_t;
    )
    allow polaris_vman_t container_file_t:filesystem { getattr unmount };
)

# Allow vman/ioxman to work with /tmp/HTX-IOX
optional_policy(
    gen_require(
        type polaris_htx_iox_tmp_t;
    )
    allow polaris_vman_t polaris_htx_iox_tmp_t:dir { getattr mounton open read };
)

# Allow vman to mount /tmp/binos-IOX
optional_policy(
    gen_require(
        type polaris_qfp_memif_t;
    )
    allow polaris_vman_t polaris_qfp_memif_t:dir mounton;
)

# vman_init.sh operates on /tmp/vman files
type polaris_vman_tmp_t;
files_tmp_file(polaris_vman_tmp_t)
files_tmp_filetrans(polaris_vman_t, polaris_vman_tmp_t, { file dir })
polaris_systemd_tmpfiles_tmp_filetrans(polaris_vman_tmp_t, dir, "vman")
manage_files_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_tmp_t)
manage_dirs_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_tmp_t)

# allow vman to work with /tmp/xml
fs_remount_tmpfs(polaris_vman_t)
fs_unmount_tmpfs(polaris_vman_t)
fs_unmount_xattr_fs(polaris_vman_t)
allow polaris_vman_t polaris_vman_tmp_t:dir mounton;
optional_policy(
    polaris_cedge_xml_tmp_manage(polaris_vman_t)
)

# relabel /bootflash/virtual-instance/UTD/tmpstaging to /dev/loopX
gen_require(
    type iso9660_t;
)
allow polaris_vman_t iso9660_t:filesystem { relabelfrom };

```

```

# configure /proc/sys/net/ipv4/conf/dpbr_0/arp_announce
kernel_search_network_sysctl(polaris_vman_t)
kernel_rw_net_sysctls(polaris_vman_t)
#configure e.g. /proc/sys/vm/nr_hugepages
kernel_rw_vm_sysctls(polaris_vman_t)

# need to do bind mount of /bootflash/SHARED-IOX
mount_domtrans(polaris_vman_t)

# vman accessing files under /tmp created by initrc like /tmp/gdev/md0/gdev-info
init_read_script_tmp_files(polaris_vman_t)

#DB persistence
polaris_tlddbpersist_setup(polaris_vman_t)

polaris_tmp_tlddb_persist_setup(polaris_vman_t)

gen_require(
    type initrc_t;
)
files_tmp_filetrans(initrc_t, polaris_vman_tmp_t, file, "cgroup.log")

dmidecode_domtrans(polaris_vman_t)

# read /etc/libvirt/libvirt.conf
virt_read_config(polaris_vman_t)

# vman_cgroup_yaml.sh through prep_csr_kumo (binos_functions-pd) checks for
# ovf-env.xml file existence in variety of directories includind
# /cdrom0/ovf-env.xml
fs_read_iso9660_files(polaris_vman_t)

# allow vman to manage loop device: finding free /dev/loopN device
# note vman code iterated over all /dev/loop* devices and try to lock
# them. As part of that iteration it tries /dev/loop_control
# what it should do instead is to use /dev/loop_control to get free
# device
dev_rw_loop_control(polaris_vman_t)

# PLEASE LOOK AT ME
# allow vman to read, write /dev/loopN devices that are
# under fixed_disk_device_t label. It is pretty strong premission
# and at this point it is only done for /dev/loopN devices.
# Can we do better? i.e move /dev/loopN to some other label?
storage_manage_fixed_disk(polaris_vman_t)

# when /bootflash or /harddisk are 100% full
allow polaris_vman_t self:capability sys_resource;

```

```

# allow VMAN to move disk.img to the disk
allow polaris_vman_t self:process setfscreate;

# vman mounts directories on behalf of guest containers, it uses
# specified context for guest directories, need permission to
# relabel, mount, etc.
fs_relabelfrom_xattr_fs(polaris_vman_t)
virt_relabel_sandbox_filesystem(polaris_vman_t)
virt_mounton_sandbox_file(polaris_vman_t)
virt_manage_sandbox_files(polaris_vman_t)
gen_require(
    type svirt_sandbox_file_t;
)
allow polaris_vman_t svirt_sandbox_file_t:filesystem mount;

# /tmp/.flashlock operations from tdllib_startup_cfg_ignored, mcp_getmonvar
allow polaris_vman_t self:capability dac_override;

# allow vman to stat /dev/kvm, executed by vman_common_init function
dev_getattr_kvm_dev(polaris_vman_t)

# vman in getfs_info_by_mediatype function inspects files in /tmp/gdev
gen_require(
    type udev_tmp_t;
)
read_files_pattern(polaris_vman_t, udev_tmp_t, udev_tmp_t)

# /usr/binos/conf/vman_exec.sh policy

polaris_utility_domain_template(vman_shell)

polaris_bexecute_domain(polaris_vman_shell_t, polaris_vman_shell_exec_t)
# vman_exec.sh calls mcp_chvrf.sh
polaris_chvrf_domtrans(polaris_vman_shell_t)
# mcp_chvrf.sh calls vman_exec.sh back and then it call bexec.sh
polaris_bexecute_domtrans(polaris_vman_shell_t)
corecmd_exec_bin(polaris_vman_shell_t)

# inherits stdin from telnetd
telnet_use_ptys(polaris_vman_shell_t)
#allow use of ptys for vman tech support
telnet_use_ptys(polaris_vman_tech_t)

optional_policy(
# reads /opt/cisco/caf/config/system-config.ini
polaris_caf_files_read(polaris_vman_t)
)

```

```

# vman_is_machine_type_initialized clone needs cap_userns sys_admin
allow polaris_vman_t self:cap_userns sys_admin;

# vman_cgroup_yaml.sh searches for ovf-env.xml on cdrom0
fs_read_removable_files(polaris_vman_t)

# vman starts vman_init.sh that in turns calls virsh
gen_require(
    type virsh_t;
    type virsh_exec_t;
)
domtrans_pattern(polaris_vman_t, virsh_exec_t, virsh_t)

polaris_bexecute_domtrans(polaris_vman_t)
polaris_send_signal_to_bexecute(polaris_vman_t)

gen_require(
    type polaris_chvrf_t;
)
# inherited as stdin/sdtout from vman
polaris_vman_use_fifo(polaris_chvrf_t)

# vman calls code_sign_verify VmanPackage
polaris_code_verify_domtrans(polaris_vman_t)

# vm_net_dev_utilization reads /proc/2962/net/dev
kernel_read_network_state(polaris_vman_t)

polaris_iosd_vcpu_read(polaris_vman_t)

# /usr/binos/conf/cgroup_reports.sh
polaris_utility_domain_template(cgroup_reports)

polaris_bexecute_domain(polaris_cgroup_reports_t, polaris_cgroup_reports_exec_t)
polaris_bexecute_domtrans(polaris_cgroup_reports_t)
# inherited as stdin/sdtout from vman
polaris_vman_use_fifo(polaris_cgroup_reports_t)

corecmd_exec_bin(polaris_cgroup_reports_t)
auth_use_nsswitch(polaris_cgroup_reports_t)

fs_read_cgroup_files(polaris_cgroup_reports_t)
fs_list_cgroup_dirs(polaris_cgroup_reports_t)

# cgroup_reports.sh creates misc files under /tmp
type polaris_cgroup_reports_tmp_t;
files_type(polaris_cgroup_reports_tmp_t)

```

```

files_tmp_filetrans(polaris_cgroup_reports_t, polaris_cgroup_reports_tmp_t, file)
manage_files_pattern(polaris_cgroup_reports_t, polaris_cgroup_reports_tmp_t, polaris_cgroup_reports_tmp_t)
fs_getattr_tmpfs(polaris_cgroup_reports_t)

# /usr/binos/conf/vman_techsupport.sh
polaris_utility_domain_template(vman_tech)

polaris_bexecute_domain(polaris_vman_tech_t, polaris_vman_tech_exec_t)
polaris_bexecute_domtrans(polaris_vman_tech_t)
# inherited as stdin/stdout from vman
polaris_vman_use_fifo(polaris_vman_tech_t)

# vman_techsupport.sh starts virsh -c qemu:///system list --all
gen_require(
    type virsh_t;
    type virsh_exec_t;
)
domtrans_pattern(polaris_vman_tech_t, virsh_exec_t, virsh_t)

# starts ip link show
sysnet_domtrans_ifconfig(polaris_vman_tech_t)

# starts brctl show
brctl_domtrans(polaris_vman_tech_t)

corecmd_exec_bin(polaris_vman_tech_t)
auth_use_nsswitch(polaris_vman_tech_t)

polaris_proc_rmonbifo_read(polaris_vman_tech_t)
polaris_chasfs_read(polaris_vman_tech_t)
polaris_cpld_read(polaris_vman_tech_t)

# starts ps aux
kernel_read_system_state(polaris_vman_tech_t)
domain_read_all_domains_state(polaris_vman_tech_t)
dev_read_sysfs(polaris_vman_tech_t)
# getattr of stdin/stdout of misc processes
term_getattr_unallocated_ttys(polaris_vman_tech_t)
term_read_console(polaris_vman_tech_t)

# reads /bootflash/virtual-instance/
polaris_disk_vman_read(polaris_vman_tech_t)

# find /etc/libvirt/lxc -name *.xml -print
virt_read_config(polaris_vman_tech_t)
# no interface that lists virt_etc_rw_t dir
gen_require(
    type virt_etc_rw_t;

```

```

)
list_dirs_pattern(polaris_vman_tech_t, virt_etc_rw_t, virt_etc_rw_t)

# find /var/run/libvirt -name *.xml -maxdepth 2 -print
virt_read_pid_files(polaris_vman_tech_t)
# no interface that lists virt_var_run_t dir
gen_require(
    type virt_var_run_t;
)
list_dirs_pattern(polaris_vman_tech_t, virt_var_run_t, virt_var_run_t)
# no interface that lists virt_lxc_var_run_t dir
gen_require(
    type virt_lxc_var_run_t;
)
list_dirs_pattern(polaris_vman_tech_t, virt_lxc_var_run_t, virt_lxc_var_run_t)
# no interface that lists qemu_var_run_t dir
gen_require(
    type qemu_var_run_t;
)
list_dirs_pattern(polaris_vman_tech_t, qemu_var_run_t, qemu_var_run_t)
#allow read of /run/libvirt/qemu
read_files_pattern(polaris_vman_tech_t, qemu_var_run_t, qemu_var_run_t)

# by some strange reason /var/run/libvirt/network is under dnsmasq_var_run_t label
dnsmasq_read_pid_files(polaris_vman_tech_t)
# no interface that lists dnsmasq_var_run_t dir
gen_require(
    type dnsmasq_var_run_t;
)
list_dirs_pattern(polaris_vman_tech_t, dnsmasq_var_run_t, dnsmasq_var_run_t)

polaris_vman_var_read(polaris_vman_tech_t)

# cat /proc/net/dev
kernel_read_network_state(polaris_vman_tech_t)

# find /sys/class/net -name intsvc* -type d -print
dev_list_sysfs(polaris_vman_tech_t)

# grep over /varied/ovf-env.xml
polaris_disk_varied_read(polaris_vman_tech_t)

# writes into /tmp/vman_techsupport
polaris_vman_tmp_manage(polaris_vman_tech_t)

# find over /sys/fs/cgroup/memory/machine
fs_list_cgroup_dirs(polaris_vman_tech_t)
# cat /sys/fs/cgroup/memory/machine/memory.limit_in_bytes

```

```

fs_read_cgroup_files(polaris_vman_tech_t)

# runs df command
fs_getattr_xattr_fs(polaris_vman_tech_t)
fs_getattr_all_fs(polaris_vman_tech_t)
files_getattr_all_dirs(polaris_vman_tech_t)
# getattr over /run/netns/2
fs_read_nsfs_files(polaris_vman_tech_t)

# check existence of vman btrace file before passing it to btdecode
polaris_vman_bt_getattr(polaris_vman_tech_t)
# check existence of pman btrace file for vman before passing it to btdecode
polaris_pman_bt_getattr(polaris_vman_tech_t)

# vman_techsupport.sh creates misc files under /tmp
type polaris_vman_tech_tmp_t;
files_type(polaris_vman_tech_tmp_t)
files_tmp_filetrans(polaris_vman_tech_t, polaris_vman_tech_tmp_t, file)
manage_files_pattern(polaris_vman_tech_t, polaris_vman_tech_tmp_t, polaris_vman_tech_tmp_t)

#allow vman tech support to read container logs including listing dirs
gen_require(
    type virt_log_t;
)
list_dirs_pattern(polaris_vman_tech_t, virt_log_t, virt_log_t)
virt_read_log(polaris_vman_tech_t)

# allow vman to access /etc/passwd
auth_map_passwd(polaris_vman_shell_t)

#vman does lvm storage management e.g. vman_libvirt_strg_available_by_pool
lvm_domtrans(polaris_vman_t)

#Allow read of pid files e.g. /run/udev/data/b7:34
udev_read_pid_files(polaris_vman_t)

#allow vman to connect to the WAAS container for serial vman_register_socket
polaris_waas_stream_connect(polaris_vman_t)

# allow vman to pgrep
# allow to get getattr of /proc file system
domain_read_all_domains_state(polaris_vman_t)

# allow vman to kill LXC container process that hasn't shutdown
# inspite of a shutdown command
gen_require(
    type virtd_lxc_t;

```

```
)  
polaris_vman_kill_process(virt_d_lxc_t)
```

```
# allow vman to rsync using ioxman_syslib.sh  
rsync_entry_type(polaris_vman_t)  
corenet_tcp_connect_rsync_port(polaris_vman_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisvman.te  
No license file was found, but licenses were detected in source scan.
```

```
#  
# March 2017, Victor Kamensky  
#  
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#
```

```
/tmp/.ncsshd_authorized_keys(/.*)? gen_context(system_u:object_r:polaris_ncsshd_keys_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispsd.fc  
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```

```
#  
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#
```

```
## <summary>Polaris Btrace Policy Rules.</summary>
```

```
#####  
# Obfl policy  
#####
```

```
#####  
## <summary>  
## Read obfl files (under /obfl, /varied/obfl, etc)  
## </summary>  
## <param name="domain">  
## <summary>  
## Domain allowed access.  
## </summary>  
## </param>  
## <rolebase/>  
#
```

```

interface(`polaris_obfl_data_read`,`
gen_require(`
type polaris_obfl_data_t;
type root_t;
`)

read_inlk_files_pattern($1, root_t, polaris_obfl_data_t)
read_files_pattern($1, polaris_obfl_data_t, polaris_obfl_data_t)
list_dirs_pattern($1, polaris_obfl_data_t, polaris_obfl_data_t)
allow $1 polaris_obfl_data_t:file map;
`)

#####
## <summary>
## Manage obfl files (under /obfl, /varied/obfl, etc
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolebase/>
#
interface(`polaris_obfl_data_manage`,`
gen_require(`
type polaris_obfl_data_t;
type root_t;
type var_t;
`)

read_inlk_files_pattern($1, root_t, polaris_obfl_data_t)
manage_files_pattern($1, { var_t polaris_obfl_data_t }, polaris_obfl_data_t)
manage_dirs_pattern($1, { var_t polaris_obfl_data_t }, polaris_obfl_data_t)
allow $1 polaris_obfl_data_t:file map;
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisobfl.if

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```

#
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#
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#
## <summary>Polaris Btrace Policy Rules.</summary>

```

```
#####
# RPC policy
#####

#####

## <summary>
##   Work with ripc
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_ripc`,`
    corenet_tcp_bind_generic_node($1)
    allow $1 self:tcp_socket { getattr setopt getopt bind create listen accept connect read write };
    # bipc would like to issue "setsockopt(sock, SOL_SOCKET, SO_VRF," which requires
    # net_admin and sys_admin capabilities
    allow $1 self:capability { net_admin sys_admin };

    polaris_socketat_nsfs_read($1)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisripc.if  
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```
#
# March 2017, Victor Kamensky
#
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#

```

```
/tmp/sw/boot(/.*)?      gen_context(system_u:object_r:polaris_boot_tmp_t,s0)
/tmp/sw/îsos(/.*)?      gen_context(system_u:object_r:polaris_boot_tmp_t,s0)
/tmp/bootup_timestamp   gen_context(system_u:object_r:polaris_boot_tmp_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisboot.fc  
 No license file was found, but licenses were detected in source scan.

```
#
# December 2019, Victor Kamensky
#

```

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#

# polarisservicemgr file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisservicemgr.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

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#

## <summary>Polaris polarisboothelper Policy Rules.</summary>

#####

## <summary>

## Read any regular file/directory from /tmp/udev.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_udev\_tmp\_read`,`

gen\_require(`

type polaris\_udev\_tmp\_files\_t;

`)

read\_files\_pattern(\$1, polaris\_udev\_tmp\_files\_t, polaris\_udev\_tmp\_files\_t)

list\_dirs\_pattern(\$1, polaris\_udev\_tmp\_files\_t, polaris\_udev\_tmp\_files\_t)

`)

#####

## <summary>

## Manage any regular file/directory from /tmp/udev.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_udev\_tmp\_manage`,`

```

gen_require(
    type polaris_udev_tmp_files_t;
)
manage_dirs_pattern($1, polaris_udev_tmp_files_t, polaris_udev_tmp_files_t)
manage_files_pattern($1, polaris_udev_tmp_files_t, polaris_udev_tmp_files_t)
)

```

```
#####
```

```

## <summary>
## Listdir of any regular directory from /tmp/udev.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_udev_tmp_list_dirs`,`
    gen_require(
        type polaris_udev_tmp_files_t;
    )
    list_dirs_pattern($1, polaris_udev_tmp_files_t, polaris_udev_tmp_files_t)
)

```

```
#####
```

```

## <summary>
## Watch udev_tmp_files directories and files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <rolebase/>
#

```

```

interface(`polaris_udev_tmp_watch`,`
    gen_require(
        type polaris_udev_tmp_files_t;
    )
    allow $1 polaris_udev_tmp_files_t:{dir file} watch;
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisboothelper.if  
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```

#
# March 2017, Victor Kamensky

```

```
#
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#

/usr/cpp/bin/cpp_driver -- gen_context(system_u:object_r:polaris_cpp_driver_exec_t,s0)
/usr/cpp/bin/cpp_driver_ledp -- gen_context(system_u:object_r:polaris_cpp_driver_exec_t,s0)
/usr/cpp/bin/cpp_driver_us_ledp -- gen_context(system_u:object_r:polaris_cpp_driver_exec_t,s0)
/usr/cpp/bin/cpp_driver_vwlc -- gen_context(system_u:object_r:polaris_cpp_driver_exec_t,s0)
/usr/cpp/bin/cpp_driver_vwlc_ledp -- gen_context(system_u:object_r:polaris_cpp_driver_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscppdriver.fc
```

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```
#
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#
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#
```

```
/usr/binos/conf/mcp_monitor_process_batchmode.sh --
gen_context(system_u:object_r:polaris_monitor_process_exec_t,s0)
/usr/binos/conf/pkg_summary.sh -- gen_context(system_u:object_r:polaris_pkg_summary_exec_t,s0)
/usr/binos/conf/pkg_to_tree.sh -- gen_context(system_u:object_r:polaris_pkg_to_tree_exec_t,s0)

/tmp/myhostname gen_context(system_u:object_r:polaris_hm_tmp_t,s0)
/tmp/show_provision_tmp(/.*)? gen_context(system_u:object_r:polaris_show_provision_tmp_t,s0)
/tmp/fs_lock_bootflash gen_context(system_u:object_r:polaris_cli_fs_cmds_tmp_t,s0)
# used by "sh pla so filesystem bootflash: de" CLI
/usr/binos/conf/mcp_cli_fs_cmds.sh -- gen_context(system_u:object_r:polaris_cli_fs_cmds_exec_t,s0)
# used by "show platform software yang-management process monitor" CLI
/usr/binos/conf/mcp_monitor_dmi_proc.sh --
gen_context(system_u:object_r:polaris_monitor_dmi_process_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarishm.fc
```

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```
#
# August 2017, Shawn Lu
#
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#
```

```
## <summary>Polaris odm Policy Rules.</summary>
```

```
#####
## <summary>
## Mqipc channel in sub directory and multiple servers on TDL
## channel is not supported by autogen code. ODM odm_clnt2svr_data
## channel is one of those. Allow domain to be one server on it.
## ODM elastic value is 2 now, add more if need in the future.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <param name="mqipc_label">
##   <summary>
##     Mqipc channel file label.
##   </summary>
## </param>
#
interface(`polaris_odm_clnt2svr_mqipc_create`,`
    gen_require(`
        type polaris_odm_client2server_data_mqipc_t;
    `)
    polaris_mqipc_create_name_dir($1, polaris_odm_client2server_data_mqipc_t, odm_clnt2svr_data-b1)
    polaris_mqipc_create_name_dir($1, polaris_odm_client2server_data_mqipc_t, odm_clnt2svr_data-b0)
    polaris_mqipc_create_name_dir($1, polaris_odm_client2server_data_mqipc_t, odm_clnt2svr_data)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisodm.if

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```
#
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#

```

```
## <summary>Polaris install_mgr Policy Rules.</summary>
```

```
#####
## <summary>
##   Read /tmp/sw/inst_tmp_1 files and directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.

```

```

## </summary>
## </param>
#
interface(`polaris_install_mgr_tmp_read`,`
gen_require(`
type polaris_install_mgr_tmp_t;
`)
list_dirs_pattern($1, polaris_install_mgr_tmp_t, polaris_install_mgr_tmp_t)
read_files_pattern($1, polaris_install_mgr_tmp_t, polaris_install_mgr_tmp_t)
read_lnk_files_pattern($1, polaris_install_mgr_tmp_t, polaris_install_mgr_tmp_t)
`)

#####
## <summary>
## Read/Write /.installer files and directories
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_install_disk_manage`,`
gen_require(`
type polaris_disk_bootflash_t;
type polaris_disk_install_t;
`)

filetrans_pattern(polaris_install_mgr_t,polaris_disk_bootflash_t, polaris_disk_install_t, dir, ".installer")
filetrans_pattern(polaris_install_mgr_t,polaris_disk_bootflash_t, polaris_disk_install_t, fifo_file, "inot_fifo")
manage_dirs_pattern($1, {polaris_disk_bootflash_t polaris_disk_install_t}, polaris_disk_install_t)
manage_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
manage_fifo_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
`)

#####
## <summary>
## Read /bootflash/.installer files and directories
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_install_disk_read`,`
gen_require(`
type polaris_disk_install_t;
`)

```

```

)

read_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
)

#####
## <summary>
##   Read copylog files (location varies by platform)
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_read_user_file`,`
    gen_require(`
        type polaris_user_file_t;
        type device_t;
    `)

    read_blk_files_pattern($1, device_t, polaris_user_file_t)
    read_files_pattern($1, polaris_user_file_t, polaris_user_file_t)
    read_lnk_files_pattern($1, polaris_user_file_t, polaris_user_file_t)
)

#####
## <summary>
##   getattr for copylog files (location varies by platform)
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_user_file_getattr`,`
    gen_require(`
        type polaris_user_file_t;
        type device_t;
    `)

    getattr_files_pattern($1, polaris_user_file_t, polaris_user_file_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisinstallmgr.if

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#

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisjvm.fc

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dnl

dnl April 2018, Victor Kamensky

dnl

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dnl

dnl Crankshaft (Overlord, Utah, Goldbeach, Neptune, TSN and Supernova) Platform Max Bay Limits

max\_bay\_map\_set(`rp', `per\_bay', 0)

max\_bay\_map\_set(`cc', `per\_bay', 19)

max\_bay\_map\_set(`fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(`rp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(`cc', `per\_bay', 19)

max\_bay\_ripc\_map\_set(`fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(`rp', `global', 0)

max\_bay\_ripc\_map\_set(`cc', `global', 19)

max\_bay\_ripc\_map\_set(`fp', `global', 0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/crankshaftmaps.m4

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#

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#

/usr/bin/vconfd\_script\_reboot\sh -- gen\_context(system\_u:object\_r:polaris\_vconfd\_reboot\_exec\_t,s0)

/usr/bin/vconfd\_script\_if\_reset\sh -- gen\_context(system\_u:object\_r:polaris\_vconfd\_ifreset\_exec\_t,s0)

/usr/bin/vconfd\_script\_get\_config\sh -- gen\_context(system\_u:object\_r:polaris\_vconfd\_cfg\_exec\_t,s0)

```

/usr/bin/vconfd_script_vmanage_list_stats\sh --
gen_context(system_u:object_r:polaris_vconfd_history_exec_t,s0)
/usr/bin/vconfd_script_vmanage_clear_stats\sh --
gen_context(system_u:object_r:polaris_vconfd_history_exec_t,s0)
/usr/bin/vconfd_script_activate\sh -- gen_context(system_u:object_r:polaris_vconfd_software_exec_t,s0)
/usr/bin/mcp_upgrade_wrapper\sh -- gen_context(system_u:object_r:polaris_vconfd_software_exec_t,s0)
/usr/bin/vconfd_script_nms_action\sh -- gen_context(system_u:object_r:polaris_vconfd_nms_exec_t,s0)
/usr/bin/vconfd_script_add_chassis_numbers_to_ztp\sh --
gen_context(system_u:object_r:polaris_vconfd_device_exec_t,s0)
/usr/bin/vconfd_script_remove_chassis_numbers_from_ztp\sh --
gen_context(system_u:object_r:polaris_vconfd_device_exec_t,s0)
/usr/bin/vconfd_script_upload_chassis_number_file\sh --
gen_context(system_u:object_r:polaris_vconfd_device_exec_t,s0)
/usr/bin/reset-conf -- gen_context(system_u:object_r:polaris_vconfd_reset_exec_t,s0)
/usr/bin/reset-logs -- gen_context(system_u:object_r:polaris_vconfd_reset_exec_t,s0)
/usr/bin/patch\sh -- gen_context(system_u:object_r:polaris_vconfd_software_exec_t,s0)
/usr/bin/vconfd_script_reset_vsmart_serial_list\sh --
gen_context(system_u:object_r:polaris_vconfd_reset_exec_t,s0)

/usr/bin/vconfd_script_cert\sh -- gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)
/usr/bin/vconfd_script_show_cert\sh -- gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)
/usr/bin/vconfd_script_show_root_ca_cert\sh --
gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)
/usr/bin/vconfd_script_upload_root_ca_cert_chain\sh --
gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)
/usr/bin/vconfd_script_uninstall_root_ca_cert_chain\sh --
gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)
/usr/bin/vconfd_script_tlsproxy_install_certs\sh --
gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)
/usr/bin/vconfd_script_tlsproxy_remove_certs\sh --
gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)

/usr/bin/vconfd_script_csr\sh -- gen_context(system_u:object_r:polaris_vconfd_csr_exec_t,s0)
/usr/bin/vconfd_script_show_csr\sh -- gen_context(system_u:object_r:polaris_vconfd_csr_exec_t,s0)
/usr/bin/vconfd_script_sign_csr\sh -- gen_context(system_u:object_r:polaris_vconfd_csr_exec_t,s0)
/usr/bin/vconfd_script_upload_vsmart_serial_numbers\sh --
gen_context(system_u:object_r:polaris_vconfd_serialnum_exec_t,s0)
/usr/bin/vconfd_script_upload_vedge_serial_numbers\sh --
gen_context(system_u:object_r:polaris_vconfd_serialnum_exec_t,s0)
/usr/bin/vconfd_script_fetch_core_info\sh -- gen_context(system_u:object_r:polaris_vconfd_crash_exec_t,s0)
# admin-tech scripts skipped defined in some other place
/usr/bin/list_crashtech_files\sh -- gen_context(system_u:object_r:polaris_vconfd_crash_exec_t,s0)
/usr/bin/vconfd_script_unlock_user\sh -- gen_context(system_u:object_r:polaris_vconfd_aaa_exec_t,s0)
/usr/bin/vconfd_script_set_password\sh -- gen_context(system_u:object_r:polaris_vconfd_aaa_exec_t,s0)
/usr/bin/vconfd_script_container\sh -- gen_context(system_u:object_r:polaris_vconfd_contr_exec_t,s0)
/usr/bin/polaris_iox_precheck\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_install\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_upgrade\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)

```

```
/usr/bin/polaris_iox_uninstall\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_reset\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_postcheck\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_download\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_remove\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_activate\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_utd_sigupdate\sh -- gen_context(system_u:object_r:polaris_vconfd_utd_exec_t,s0)
/usr/bin/polaris_geo_db_update\sh -- gen_context(system_u:object_r:polaris_vconfd_geo_exec_t,s0)
/usr/bin/vconfd_script_vping\sh -- gen_context(system_u:object_r:polaris_vconfd_net_exec_t,s0)
/usr/bin/vconfd_script_vnping\sh -- gen_context(system_u:object_r:polaris_vconfd_net_exec_t,s0)
/usr/bin/vconfd_script_vtraceroute\sh -- gen_context(system_u:object_r:polaris_vconfd_net_exec_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscedge.fc

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```
#
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#
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#
```

```
policy_module(polaristdlresolve, 1.0);
```

```
#####
# TDLresolve policy
#####
gen_require(
    attribute polaris_extended_domain;
)
```

```
type polaris_tdlresolve_t;
files_type(polaris_tdlresolve_t)
```

```
files_tmp_filetrans(polaris_extended_domain, polaris_tdlresolve_t, dir, "tdlresolve")
# tdl_boottime.sh uses /tmp/tdlresolve_tmp for some temp files
# which are moved into /tmp/tdlresolve latter
files_tmp_filetrans(polaris_extended_domain, polaris_tdlresolve_t, dir, "tdlresolve_tmp")
```

```
type polaris_global_service_t;
files_type(polaris_global_service_t);
```

```
#####
# rsync policy
#####
gen_require(
    type rsync_t;
```

```
    type polaris_btrace_base_t;
)
#tdl_cleanup_epochs.sh uses btrace
allow rsysync_t polaris_btrace_base_t:file map;
#rsync invokes tdl_cleanup_epochs.sh as part of this set /proc/[pid]/oom_score_adj is done
allow rsysync_t self:capability sys_resource;
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristdlresolve.te
```

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```
#
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#
```

```
policy_module(polarisqfp, 1.0);
```

```
polaris_process_domain_template(qfp)
```

```
polaris_cpp_process(polaris_qfp_t)
polaris_cpp_dev_use(polaris_qfp_t)
polaris_btrace_data_manage(polaris_qfp_t)
polaris_crft_data_manage(polaris_qfp_t)
polaris_chasfs_manage(polaris_qfp_t)
polaris_lsmpi_dev_use(polaris_qfp_t)
polaris_persistent_list_dirs(polaris_qfp_t);
```

```
# allow for hot add on azure
```

```
kernel_read_irq_sysctls(polaris_iodbd_t)
```

```
kernel_rw_irq_sysctls(polaris_iodbd_t)
```

```
# allow read variety of system information from sysfs, as well as write
```

```
# into configuration of some pcie devices
```

```
# type=AVC msg=audit(1479597040.739:218): avc: denied { write } for pid=30997 comm="ucode_ctl_rx"
```

```
name="config" dev="sysfs" ino=22363 scontext=system_u:system_r:polaris_qfp_t:s0
```

```
tcontext=system_u:object_r:sysfs_t:s0 tclass=file
```

```
dev_rw_sysfs(polaris_qfp_t)
```

```
# allow to send message to /dev/log
```

```
logging_send_syslog_msg(polaris_qfp_t)
```

```
# allow access to uio devices like /dev/uio0
```

```
dev_rw_userio_dev(polaris_qfp_t)
```

```
# Platforms with QAT v1.7 need map permission also
```

```

# qae device (/dev/icp_adf_ctl)
type polaris_icp_device_t;
dev_node(polaris_icp_device_t)

allow polaris_qfp_t userio_device_t:chr_file map;

# allow to read /proc/meminfo
kernel_read_system_state(polaris_qfp_t)

# qfp FIA (Feature Invocation Array) resides in /dev/shm/cpp_ucose_dram
# Those are set of instructions assembled by cpp control plane and passed
# to qfp to execute.
polaris_cpp_tmpfs_exec(polaris_qfp_t)

# qfp /var/run pid file
type polaris_qfp_var_run_t;
files_pid_file(polaris_qfp_var_run_t)
manage_files_pattern(polaris_qfp_t, polaris_qfp_var_run_t, polaris_qfp_var_run_t)
manage_dirs_pattern(polaris_qfp_t, polaris_qfp_var_run_t, polaris_qfp_var_run_t)
files_pid_filetrans(polaris_qfp_t, polaris_qfp_var_run_t, { file dir })
# mmap /var/run/dpdk/rte/config
allow polaris_qfp_t polaris_qfp_var_run_t:file map;

# qfp memif directory and file
type polaris_qfp_memif_t;
files_tmp_file(polaris_qfp_memif_t);
# qfp memif interface for binos clients in /tmp/memif
files_tmp_filetrans(polaris_qfp_t, polaris_qfp_memif_t, dir, "memif")
# creates /tmp/binos-IOX/memif
files_tmp_filetrans(polaris_qfp_t, polaris_qfp_memif_t, dir, "binos-IOX")
polaris_qfp_memif_manage(polaris_qfp_t)
# qfp memif interface for container in /bootflash/SHARED-IOX/memif
polaris_disk_type(polaris_qfp_memif_t)
gen_require(
    type polaris_disk_bootflash_t;
)
filetrans_pattern(polaris_qfp_t, polaris_disk_bootflash_t, polaris_qfp_memif_t, dir, "memif")

# work with /bootflash/SHARED-IOX/memif/memif-dp-svr
polaris_utdl_container_dgram_send(polaris_qfp_t)

# work (create/open/read/write) with hugetlbf files
fs_manage_hugetlbf_dirs(polaris_qfp_t)
fs_rw_hugetlbf_files(polaris_qfp_t)
gen_require(
    type hugetlbf_t;
)
allow polaris_qfp_t hugetlbf_t:file create;

```

```

# dpdk may unlinks unneeded pages in unmap_unneeded_hugepages function
allow polaris_qfp_t hugetlbfs_t:file unlink;

allow polaris_qfp_t self:capability { sys_rawio sys_nice sys_admin };
allow polaris_qfp_t self:process setsched;

# is_nic_netmap_capable function, which is used by vnic_cfg_port, needs socket to
# work with interface parameters
allow polaris_qfp_t self:udp_socket create_socket_perms;

ifdef(`crankshaft_family',`
polaris_icc_broken_relocations(polaris_qfp_t)
')

# access to /dev/dash_XXX devices on cranshaft platforms
optional_policy(`
    polaris_dash_dev_use(polaris_qfp_t)
')

# netmap device (/dev/netmap)
type polaris_netmap_device_t;
dev_node(polaris_netmap_device_t)

polaris_netmap_dev_use(polaris_qfp_t)

# access to /dev/icp_XXX device on crankshaft platforms
optional_policy(`
    polaris_icp_dev_use(polaris_qfp_t)
')

# netmap device (/dev/svc_eng_puntNN)
type polaris_sep_device_t;
dev_node(polaris_sep_device_t)

polaris_svc_eng_punt_dev_use(polaris_qfp_t)

# transition and access to /var/log/cdal-tsn-info.log
ifdef(`tsn_platform',`
    polaris_qfp_log_manage("cdal-tsn-info.log")
')

# transition and access to /var/log/cdal-tsn-info.log
ifdef(`blackheart_platform',`
    polaris_qfp_log_manage("cdal-tsn-info.log")
')

# aventus needs access to /sys/devices/platform/cpn-110-master/cpn-110-master
# for boot configuration

```

```

# transition and access to /var/log/cdal-tsn-info.log
ifdef(^aventus_platform',`
gen_require(`
    type syslogd_t;
    `)
polaris_qfp_log_manage("cdal-tsn-info.log")
polaris_ggpio_dev_read_write(polaris_qfp_t)
polaris_ggpio_dev_read_write(syslogd_t)
`)

# transition and access to /var/log/cdal-tsn-info.log
ifdef(^cabo_platform',`
    polaris_qfp_log_manage("cdal-tsn-info.log")
`)

# transition and access to /var/log/cdal-tsn-info.log
ifdef(^supernova_platform',`
    polaris_qfp_log_manage("cdal-tsn-info.log")
`)

# LOOK AT ME: qfp process links libcrypto.so.1.0.0 which has DT_TEXTREL
# that should be addressed by CSCvj99896, once that is fixed remove below
# under CSCvj99905.
gen_require(`
    type lib_t;
    `)

allow polaris_qfp_t lib_t:file execmod;

# LOOK AT ME: qfp process on TSN LE has executable stack with GNU_STACK marked RWE
# that should be addressed by CSCvk66808, once that is fixed remove below
# under CSCvk66832.
ifdef(^tsn_platform',`
allow polaris_qfp_t self:process execmem;
`)

# lsmpi replacement punt/inject over domain sockets
polaris_pi_uds_manage(polaris_qfp_t)
polaris_iosd_dgram_send(polaris_qfp_t)

# dpdk code reads CPU model specific register (MSR)
dev_read_cpuid(polaris_qfp_t)

# dpdk code in rte_mp_channel_init function creates and works
# with /var/run/dpdk/rte/mp_socket socket
manage_sock_files_pattern(polaris_qfp_t, polaris_qfp_var_run_t, polaris_qfp_var_run_t)

# dpdk code in dev_uev_socket_fd_create creates and work with

```

```

# netlink_kobject_uevent_socket socket
# Note: radium with QAT v1.7 requires getattr and setopt
allow polaris_qfp_t self:netlink_kobject_uevent_socket { getattr setopt bind create };

# hal_random32_init calls hw_random32_init and it opens /dev/random
dev_read_rand(polaris_qfp_t)

gen_require(
    type sysfs_t;
)
mmap_files_pattern(polaris_qfp_t, sysfs_t, sysfs_t)

# LOOK AT ME: remove after CSCvs34007 fixed
# qfp runs hidedir hide /bootflash/SHARED-IOX/memif
corecmd_exec_bin(polaris_qfp_t)
corecmd_exec_shell(polaris_qfp_t)
auth_use_nsswitch(polaris_qfp_t)

# CSR & C8KV use infiniband and tun/tap devices for Azure
type polaris_infiniband_device_t;
dev_node(polaris_infiniband_device_t)

polaris_infiniband_dev_use(polaris_qfp_t)

kernel_request_load_module(polaris_qfp_t)
allow polaris_qfp_t self:netlink_rdma_socket { bind create setopt };
allow polaris_qfp_t self:capability { ipc_lock net_admin net_raw };
allow polaris_qfp_t self:netlink_route_socket rw_netlink_socket_perms;
allow polaris_qfp_t self:tun_socket { create relabelfrom relabelto };
corenet_rw_tun_tap_dev(polaris_qfp_t)

# CSR Azure IO model requies read access
gen_require(
    type proc_net_t;
)
allow polaris_qfp_t proc_net_t:file { read };

# manange MLX NIC socket files in /var/tmp/net_ml5*
type polaris_qfp_var_tmp_t;
files_tmp_file(polaris_qfp_var_tmp_t);
files_tmp_filetrans(polaris_qfp_t, polaris_qfp_var_tmp_t, { sock_file })
manage_sock_files_pattern(polaris_qfp_t, polaris_qfp_var_tmp_t, polaris_qfp_var_tmp_t)

# rm from coreutils-8.30 wants to know filesystem type
fs_getattr_xattr_fs(polaris_qfp_t)

# allow create of dir /bootflash/SHARED-IOX on first install of VM

```

```

create_dirs_pattern(polaris_qfp_t, polaris_disk_bootflash_t, polaris_disk_bootflash_t)

polaris_cpld_read(polaris_qfp_t, polaris_sysfs_cpld_t, polaris_sysfs_cpld_t)

# tsn needs access to /sys/devices/platform/cpn-110-master/cpn-110-master
# for boot configuration
ifdef(`tsn_platform',`
    polaris_ggpio_dev_read_write(polaris_qfp_t)
`)

# blackheart needs access to /sys/devices/platform/cpn-110-master/cpn-110-master
# for boot configuration
ifdef(`blackheart_platform',`
    polaris_ggpio_dev_read_write(polaris_qfp_t)
`)

# sparrow needs access to /sys/devices/platform/cpn-110-master/cpn-110-master
# for boot configuration
# Also needs access to cdal-tsn-info.log
ifdef(`sparrow_platform',`
    polaris_qfp_log_manage("cdal-tsn-info.log")
    polaris_ggpio_dev_read_write(polaris_qfp_t)
`)

# ucode also needs access to ttyUSB4
ifdef(`cabo_platform',`
    term_use_usb_ttys(polaris_qfp_t)
`)

# qfp starts /usr/binos/bin/net_hotremove-vxe.sh
init_read_script_files(polaris_qfp_t)

# access to /dev/dash_xxx devices on cranshaft platforms
optional_policy(`
    polaris_htx_dgram_send(polaris_qfp_t)
`)

# net_hotremove-vxe.sh that works with /tmp/iodb
polaris_iodb_tmp_manage(polaris_qfp_t)
# net_hotremove-vxe.sh sends signal to iodbd.sh
gen_require(`
    type polaris_iodbd_t;
`)
allow polaris_qfp_t polaris_iodbd_t:process signal;
# net_hotremove-vxe.sh reads /proc/sys/vm/nr_hugepages
kernel_read_vm_sysctls(polaris_qfp_t)

```

```

# long running helper script iodbd.sh
polaris_process_domain_template(iodbd)

# iodbd.sh started by /etc/init.d/binos that runs under initrc_t
gen_require(
    type initrc_t;
)
polaris_iodbd_domtrans(initrc_t)

polaris_boot_tmp_read(polaris_iodbd_t)
polaris_chasfs_manage(polaris_iodbd_t)
polaris_cpld_read(polaris_iodbd_t)
polaris_rmonbifo_tmp_read(polaris_iodbd_t)

auth_use_nsswitch(polaris_iodbd_t)
corecmd_exec_bin(polaris_iodbd_t)

# hot add interfaces virtio/sriov
dev_manage_sysfs_dirs(polaris_iodbd_t)
polaris_sysfs_manage(polaris_iodbd_t)

# write into sysfs file like /sys/devices/pci0000:00/0000:00:03.2/config
dev_rw_sysfs(polaris_iodbd_t)

# read/write /run/dpdk/rte/config
manage_files_pattern(polaris_iodbd_t, polaris_qfp_var_run_t, polaris_qfp_var_run_t)

# lspci reads /etc/modprobe.d
modutils_read_module_config(polaris_iodbd_t)
# lspci reads /lib/modules/5.4.40/modules.softdep
files_read_kernel_modules(polaris_iodbd_t)
files_map_kernel_modules(polaris_iodbd_t)

# runs dmidecode
dmidecode_domtrans(polaris_iodbd_t)
# dmidecode when run in this context needs access initrc stdin/stdout
gen_require(
    type dmidecode_t;
)
init_rw_stream_sockets(dmidecode_t)

# calls ethtool -i intsvc0
sysnet_domtrans_ifconfig(polaris_iodbd_t)

# reads /etc/rc.d/init.d/binos_functions-pd-iodb
init_read_script_files(polaris_iodbd_t)

# read /proc/sys/vm/nr_hugepages

```

```

kernel_read_vm_sysctls(polaris_iodbd_t)

# cat /sys/class/net/intsvc0/address
dev_read_sysfs(polaris_iodbd_t)

# read /proc/cmdline
kernel_read_system_state(polaris_iodbd_t)

polaris_iodb_tmp_manage(polaris_iodbd_t)

type polaris_iodb_tmp_t;
files_tmp_file(polaris_iodb_tmp_t)

# /tmp/iodb is created by /etc/init.d/binos that runs under initrc_t
gen_require(
    type initrc_t;
)
files_tmp_filetrans(initrc_t, polaris_iodb_tmp_t, dir, "iodb")
polaris_iodb_tmp_manage(initrc_t)

# udev_t can drop entries into /tmpi/iodb to process
gen_require(
    type udev_t;
)
polaris_iodb_tmp_manage(udev_t)

# Radium and Thallium need to check rommon version when initializing static
# interface table (access /proc/rmonbifo).
optional_policy(
    polaris_proc_rmonbifo_read(polaris_qfp_t)
)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisqfp.te
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#

## <summary>Polaris cpp_ha Policy Rules.</summary>

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscppha.if

```

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```
#  
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#
```

```
policy_module(polarisngwctblmgr, 1.0);
```

```
gen_require(  
    type polaris_ngwc_tbl_mgr_t;  
)
```

```
polaris_btrace_data_manage(polaris_ngwc_tbl_mgr_t)  
polaris_crft_data_manage(polaris_ngwc_tbl_mgr_t)  
polaris_chasfs_manage(polaris_ngwc_tbl_mgr_t)  
polaris_tdlresolve_read(polaris_ngwc_tbl_mgr_t)  
polaris_tdlldb_list_dirs(polaris_ngwc_tbl_mgr_t)  
polaris_cpld_read(polaris_ngwc_tbl_mgr_t)  
polaris_lua_read(polaris_ngwc_tbl_mgr_t)  
polaris_flashlib_read(polaris_ngwc_tbl_mgr_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_ngwc_tbl_mgr_t)
```

```
allow polaris_ngwc_tbl_mgr_t self:capability dac_override;
```

```
polaris_dyncfg_tmp_read(polaris_ngwc_tbl_mgr_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwctblmgr.te
```

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```
#  
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#
```

```
# polarisfmanrp file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfmanrp.fc
```

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```
dnl
```

dnl April 2018, Victor Kamensky

dnl

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dnl

```
define(^polaris_ripc_service_server_aux,'`dnl
```

```
polaris_ripc_$2_bind($3)
```

```
polaris_ripc($3)
```

```
')
```

```
define(^polaris_ripc_service_server_full,'`dnl
```

```
polaris_ripc_service_server_aux(ripc_label($1), ripc_stem($1), process_label($2))
```

```
')
```

```
define(^polaris_ripc_service_server,'`dnl
```

```
ifelse(ripc_type_map($1), `', `polaris_ripc_service_server_full($1, $2, $3, $4, $5)')
```

```
ripc_type_map_set(ripc_label($1), process_label($2))
```

```
')
```

```
define(^polaris_ripc_service_client_aux,'`dnl
```

```
polaris_ripc($3)
```

```
polaris_ripc_$2_connect($3)
```

```
')
```

```
define(^polaris_ripc_service_client,'`dnl
```

```
polaris_ripc_service_client_aux(ripc_label($1), ripc_stem($1), process_label($2))dnl
```

```
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_ripc\_te.m4

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#

# August 2017, Victor Kamensky

#

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#

```
/usr/binos/conf/audit_log.sh -- gen_context(system_u:object_r:polaris_audit_log_exec_t,s0)
```

```
/usr/binos/conf/audit_snapshot.sh -- gen_context(system_u:object_r:polaris_audit_log_exec_t,s0)
```

```
/tmp/package_biv_sums -- gen_context(system_u:object_r:polaris_kgv_data_t,s0)
```

```
/usr/bin/code_sign_verify -- gen_context(system_u:object_r:polaris_code_verify_exec_t,s0)
```

```
/usr/sbin/boot_verify_package -- gen_context(system_u:object_r:polaris_code_verify_exec_t,s0)
```

```
/usr/sbin/kgv_update -- gen_context(system_u:object_r:polaris_code_verify_exec_t,s0)
```

```
/dev/shm/sem\updatepcr8d_msg_sem gen_context(system_u:object_r:polaris_code_verify_tmpfs_t,s0)
```

```

# /dev/aikido
/dev/aikido -c gen_context(system_u:object_r:polaris_aikido_device_t,s0)

/usr/binos/conf/mcp_upgrade_hwprg.sh      gen_context(system_u:object_r:polaris_hw_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_hwprg_fpga.sh  gen_context(system_u:object_r:polaris_hw_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_hwprg_cpld.sh  gen_context(system_u:object_r:polaris_hw_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_hwprg_cmds.sh  gen_context(system_u:object_r:polaris_hw_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_hwprg_utils.sh gen_context(system_u:object_r:polaris_hw_upgrade_exec_t,s0)
/usr/binos/bin/tam_fw_upgrade              gen_context(system_u:object_r:polaris_hw_upgrade_exec_t,s0)

/usr/binos/conf/mcp_upgrade_rommon.sh      gen_context(system_u:object_r:polaris_rom_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_rommon_cmds.sh gen_context(system_u:object_r:polaris_rom_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_rommon_helper.sh gen_context(system_u:object_r:polaris_rom_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_rommon_x86.sh  gen_context(system_u:object_r:polaris_rom_upgrade_exec_t,s0)

/dev/scansta                               -c gen_context(system_u:object_r:polaris_scansta_device_t,s0)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristws.fc
```

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```

#
# June 2020, Cuiyan Ma
#
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#

policy_module(polarisissucompcheck, 1.0);
polaris_process_domain_template(issu_comp_check)

corecmd_exec_bin(polaris_issu_comp_check_t)
corecmd_exec_shell(polaris_issu_comp_check_t)

polaris_chasfs_manage(polaris_issu_comp_check_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_issu_comp_check_t)

# For reading tracekey from /tmp/tmp/pub/tracekey_cache/usr/bin/rotee
polaris_btrace_tmppub_read(polaris_issu_comp_check_t)

# For reading /sys/devices/platform/cpld/platform_type
polaris_cpld_read(polaris_issu_comp_check_t)

# For reading /tmp/sw/boot/pkginfo
polaris_boot_tmp_read(polaris_issu_comp_check_t)

```

```

# For ls on /tmp/ufs/crashinfo
optional_policy(
polaris_ncd_tmp_read(polaris_issu_comp_check_t)
)

# work with /tmp files
type polaris_issu_comp_check_tmp_t;
files_tmp_file(polaris_issu_comp_check_tmp_t)
manage_dirs_pattern(polaris_issu_comp_check_t, tmp_t, polaris_issu_comp_check_tmp_t)
manage_files_pattern(polaris_issu_comp_check_t, polaris_issu_comp_check_tmp_t,
polaris_issu_comp_check_tmp_t)
files_tmp_filetrans(polaris_issu_comp_check_t, polaris_issu_comp_check_tmp_t, { file dir })

# For using push_using_rsync
polaris_chvrf_domtrans(polaris_issu_comp_check_t)

gen_require(
    type rsync_t;
)
rsync_entry_domtrans(polaris_issu_comp_check_t, rsync_t)
polaris_manage_rsync_tmplog_dir(polaris_issu_comp_check_t)

# rsync inherits issu_comp_check.sh's stdout/stderr fifo files
allow rsync_t polaris_issu_comp_check_t:fifo_file write;

allow polaris_issu_comp_check_t self:capability sys_resource;

# reads /tmp/remote_sw_verinfo.txt
gen_require(
    type rsync_tmp_t;
)
read_files_pattern(polaris_issu_comp_check_t, rsync_tmp_t, rsync_tmp_t)

# use of errmsg.sh
polaris_script_errmsg_use(polaris_issu_comp_check_t)

# hwutil modifies /sys/bus/i2c/drivers/pca9548/1-0076/reg_control
# TODO: label sysfs so that reg control gets its own label
dev_rw_sysfs(polaris_issu_comp_check_t)

# allow locking of /tmp/sysctrl_i2c.lck
# TODO: this file probably deserves its own label when created by cm_rp
polaris_cm_rp_tmp_manage(polaris_issu_comp_check_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisissucompcheck.te
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```

```
#
# April 2017, Victor Kamensky
#
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#

## <summary>Polaris dmi_opdatamgrd Policy Rules.</summary>
```

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\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmiopdatamgrd.if

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```
#
# May 2017, Victor Kamensky
#
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#
```

```
policy_module(polarisptcd, 1.0);
```

```
gen_require(^
    type polaris_pttcd_t;
')
```

```
polaris_btrace_data_manage(polaris_pttcd_t)
polaris_crft_data_manage(polaris_pttcd_t)
polaris_chasfs_manage(polaris_pttcd_t)
polaris_tdlresolve_read(polaris_pttcd_t)
polaris_tdlldb_list_dirs(polaris_pttcd_t)
polaris_lua_read(polaris_pttcd_t)
polaris_flashlib_read(polaris_pttcd_t)
```

```
auth_use_nsswitch(polaris_pttcd_t)
polaris_cpld_read(polaris_pttcd_t)
```

```
allow polaris_pttcd_t self:netlink_route_socket r_netlink_socket_perms;
```

```
polaris_disk_bootflash_search(polaris_pttcd_t)
polaris_bootflash_manage(polaris_pttcd_t)
polaris_persistent_getattr(polaris_pttcd_t)
```

```
type polaris_pttcd_tmp_t;
files_tmp_file(polaris_pttcd_tmp_t)
polaris_systemd_tmpfiles_tmp_filetrans(polaris_pttcd_tmp_t, dir, "interceptor")
gen_require(^
    type polaris_btrace_tmppub_t;
```

```
)  
manage_dirs_pattern(polaris_pttcd_t, { polaris_pttcd_tmp_t polaris_btrace_tmppub_t }, polaris_pttcd_tmp_t)  
manage_files_pattern(polaris_pttcd_t, { polaris_pttcd_tmp_t polaris_btrace_tmppub_t }, polaris_pttcd_tmp_t)  
manage_lnk_files_pattern(polaris_pttcd_t, { polaris_pttcd_tmp_t polaris_btrace_tmppub_t }, polaris_pttcd_tmp_t)
```

```
allow polaris_pttcd_t self:tcp_socket create_stream_socket_perms;  
allow polaris_pttcd_t self:udp_socket create_socket_perms;
```

```
corenet_tcp_bind_generic_node(polaris_pttcd_t)  
corenet_tcp_bind_polaris_pttcd_port(polaris_pttcd_t)  
corenet_tcp_connect_polaris_pttcd_port(polaris_pttcd_t)  
corenet_udp_sendrecv_polaris_pttcd_port(polaris_pttcd_t)
```

```
sysnet_read_config(polaris_pttcd_t)
```

```
allow polaris_pttcd_t self:capability sys_resource;
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispttcd.te
```

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```
#  
# August 2017, Shawn Lu  
#  
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#
```

```
policy_module(polarisrrmmgr, 1.0);
```

```
gen_require(  
    type polaris_rrm_mgr_t;  
)
```

```
polaris_btrace_data_manage(polaris_rrm_mgr_t)  
polaris_chasfs_manage(polaris_rrm_mgr_t)  
polaris_tdlresolve_read(polaris_rrm_mgr_t)  
polaris_tdlldb_list_dirs(polaris_rrm_mgr_t)  
polaris_cpld_read(polaris_rrm_mgr_t)  
polaris_lua_read(polaris_rrm_mgr_t)  
polaris_flashlib_read(polaris_rrm_mgr_t)
```

```
polaris_rpc_sman_ui_serv_connect(polaris_rrm_mgr_t)
```

```
polaris_db_tdlldb_dir_use(polaris_rrm_mgr_t)
```

```
# allow to use setrlimit  
allow polaris_rrm_mgr_t self:process setrlimit;
```

```

allow polaris_rrm_mgr_t self:capability sys_resource;
allow polaris_rrm_mgr_t self:capability dac_override;

# stuff related to vrf support of the socket
polaris_lfts_dev_use(polaris_rrm_mgr_t)
polaris_socketat_nsfs_read(polaris_rrm_mgr_t)

# allow to open udp socket on port 12134
corenet_udp_bind_polaris_rrm_mgr_port(polaris_rrm_mgr_t)
corenet_udp_bind_generic_node(polaris_rrm_mgr_t)
allow polaris_rrm_mgr_t self:udp_socket { create_socket_perms recv_msg send_msg };

corenet_udp_bind_polaris_rrm_clnt_port(polaris_rrm_mgr_t)

polaris_odm_clnt2svr_mqipc_create(polaris_rrm_mgr_t)

# access "/bootflash/.dbpersist"
polaris_tdlb_persist_setup(polaris_rrm_mgr_t)

# access /tmp/rp/tdldb/persistent-config/ dir and files in this dir
polaris_tmp_tdlb_persist_setup(polaris_rrm_mgr_t)

logging_send_syslog_msg(polaris_rrm_mgr_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrrmmgr.te
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#
# April 2017, Victor Kamensky
#
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#

policy_module(polariscyan, 1.0);

# dyncfg_setup.sh runs under cmand label

polaris_process_domain_template(dyncfg)

polaris_btrace_data_manage(polaris_dyncfg_t)
polaris_cpld_read(polaris_dyncfg_t)
polaris_lua_read(polaris_dyncfg_t)
polaris_cpld_dev_use(polaris_dyncfg_t)
polaris_rmonbifo_tmp_read(polaris_dyncfg_t)
polaris_chasfs_read(polaris_dyncfg_t)

```

```

# this script works with /tmp/dyncfg files
type polaris_dyncfg_tmp_t;
files_tmp_file(polaris_dyncfg_tmp_t)

files_tmp_filetrans(polaris_dyncfg_t, polaris_dyncfg_tmp_t, dir, "cyan")
files_tmp_filetrans(polaris_dyncfg_t, polaris_dyncfg_tmp_t, file)

manage_files_pattern(polaris_dyncfg_t, polaris_dyncfg_tmp_t, polaris_dyncfg_tmp_t)
manage_dirs_pattern(polaris_dyncfg_t, polaris_dyncfg_tmp_t, polaris_dyncfg_tmp_t)
manage_lnk_files_pattern(polaris_dyncfg_t, polaris_dyncfg_tmp_t, polaris_dyncfg_tmp_t)

corecmd_exec_bin(polaris_dyncfg_t)
corecmd_exec_shell(polaris_dyncfg_t)

# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_dyncfg_t)

# allow to read /proc/meminfo
kernel_read_system_state(polaris_dyncfg_t)

# dyncfg_setup calls luajit and luajit needs execute JIT generated code
allow polaris_dyncfg_t self:process execmem;

# allow objstore access
polaris_disk_objstore_read(polaris_dyncfg_t)

type polaris_dyncfg_log_t;
files_tmp_file(polaris_dyncfg_log_t)

gen_require(`
    attribute polaris_domain;
`)

filetrans_pattern(polaris_domain, polaris_dyncfg_tmp_t, polaris_dyncfg_log_t, file, "cyan.log")
filetrans_pattern(polaris_domain, polaris_dyncfg_tmp_t, polaris_dyncfg_log_t, file, "cyan_runtime.log")
files_tmp_filetrans(polaris_domain, polaris_dyncfg_log_t, file, "cyan.lock")
manage_files_pattern(polaris_domain, polaris_dyncfg_tmp_t, polaris_dyncfg_log_t)

polaris_dyncfg_tmp_read(polaris_domain)

# on utah need to get model info
optional_policy(`
    polaris_dash_dev_use(polaris_dyncfg_t)
`)

#access to /dev/dash_fpga device on fugazi platform
ifdef(^fugazi_platform`,`
    polaris_dash_dev_mcp_use(polaris_dyncfg_t)

```

```

')

# allow search and read under /tmp/boot directory
polaris_boot_tmp_read(polaris_dynconf_t)

logging_send_syslog_msg(polaris_dynconf_t)

# dynconf needs access to idprom. Idprom is accessed differently depending on
# platform

# on utah idprom is in quack chip: hw_esg_read_midplane_idprom
# on platforms with idprom in quack chip need access to
# quack device as part of hw_esg_read_midplane_idprom call.
ifdef(`crankshaft_family',`
polaris_quack_dev_use(polaris_dynconf_t)
')
ifdef(`starfleet_platform',`
polaris_quack_dev_use(polaris_dynconf_t)
')

# on 1ng idprom is i2c device in sysfs like:
# /sys/devices/pci0000:00/0000:00:1f.3/i2c-0/i2c-1/1-0056/eeprom
# on ultra it is still emulated by i2c driver like:
# /sys/devices/i2c-0/i2c-1/1-0056/eeprom
dev_rw_sysfs(polaris_dynconf_t)

# on nyquist and 1ng idprom value retrieved by flashlib and needs dac_override
allow polaris_dynconf_t self:capability dac_override;
polaris_flashlib_read(polaris_dynconf_t)

# LOOK AT ME on quake even rommon var read operation needs write access
# i.e flashutil -c getvar -N MODEL_NUM does open with O_RDWR
ifdef(`quake_platform',`
polaris_flashlib_write(polaris_dynconf_t)
')

# In chassis_attrs.lua method THIS.WIRELESS checks whether wireless package is installed
# by opening (why open, not stat) wncmgrd binary.
optional_policy(`
    gen_require(`
        type polaris_wncmgrd_exec_t;
    ')
    read_files_pattern(polaris_dynconf_t, bin_t, polaris_wncmgrd_exec_t)
')

# lua/cyan/vwlc_chassis_attrs.lua needs to read /bootflash/rommon_vars file on vwlc
ifdef(`wlc_family',`

```

```

polaris_bootflash_read(polaris_dyncfg_t)
')

# lua/cyan/vwlc_chassis_attrs.lua needs to read /boot/vcpu_template file on vwlc
ifdef(^wlc_family',`
polaris_disk_varied_read(polaris_dyncfg_t)
')

# on macallan passport SUP card idprom is in act2 chip.
# hw_passport_read_midplane_idprom invoked from cyan_init
# reads /dev/act2 device.
ifdef(^ngwc_family',`
polaris_act2_dev_use(polaris_dyncfg_t)
')

ifdef(^passport_platform',`
# open /dev/ttyS0 console in hw_passport_read_midplane_idprom, invoked by
# cyaninit
term_use_unallocated_ttys(polaris_dyncfg_t)
')

# during wlc subpackage install cyan_init.sh called from
# C9800-Wireless_startup_script.sh script and output redirected
# into some install_tmp file
ifdef(^ngwc_family',`
polaris_install_tmp_log_write(polaris_dyncfg_t)
')

# /dev/aikido access
polaris_aikido_dev_use(polaris_dyncfg_t)

gen_require(
    type rsync_t;
)

rsync_entry_domtrans(polaris_dyncfg_t, rsync_t)
corenet_tcp_connect_rsync_port(polaris_dyncfg_t)

ifdef(^sumatra_platform',`
# LOOK AT ME: After direct usage of /dev/mem is removed (CSCvw80796)
# /dev/mem
polaris_dev_mem_use(polaris_dyncfg_t)
')

# For Cabo, allow for stronger permissions to access env_var
ifdef(^cabo_platform',`
polaris_proc_rmonbifo_read(polaris_dyncfg_t)
')

```

```
# For Cabo, also allow access to i2c-0
ifdef(`cabo_platform',`
polaris_i2c_use(polaris_dyncfg_t)
')
```

```
# /dev/i2c-0 access
ifdef(`petra_platform',`
polaris_i2c_use(polaris_dyncfg_t)
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscyan.te

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```
#
# August 2017, Victor Kamensky
#
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#
```

```
policy_module(polarisflashcheck, 1.0);
```

```
gen_require(`
    type polaris_flashcheck_t;
')
```

```
# allow read of /etc/passwd
auth_use_nsswitch(polaris_flashcheck_t)
```

```
corecmd_exec_bin(polaris_flashcheck_t)
```

```
# allow to read /proc/meminfo
kernel_read_system_state(polaris_flashcheck_t)
```

```
# uses pidof
domain_read_all_domains_state(polaris_flashcheck_t)
dev_read_sysfs(polaris_flashcheck_t)
```

```
# df on "/" needs fs_t.filesystem getattr
fs_getattr_xattr_fs(polaris_flashcheck_t)
```

```
polaris_btrace_data_manage(polaris_flashcheck_t)
polaris_chasfs_manage(polaris_flashcheck_t)
polaris_cpld_read(polaris_flashcheck_t)
```

```
polaris_read_debug_conf(polaris_flashcheck_t)
```

```

polaris_boot_tmp_read(polaris_flashcheck_t)

logging_send_syslog_msg(polaris_flashcheck_t)

# directly output to /dev/ttyS0
term_use_unallocated_ttys(polaris_flashcheck_t)

polaris_bootflash_read(polaris_flashcheck_t)

allow polaris_flashcheck_t self:capability { sys_resource dac_override };

# pidof needs below
allow polaris_flashcheck_t self:capability sys_ptrace;

# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_flashcheck_t)

# access of crashinfo dir for flash_check.sh, it does source of pglobals.sh
# which needs acces to /crashinfo
polaris_disk_crashinfo_getattr(polaris_flashcheck_t)

# this is for NFS access mounted in a dir of ncd context
optional_policy(`
    polaris_ncd_tmp_read(polaris_flashcheck_t)
`)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisflashcheck.te
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#
# June 2017, Victor Kamensky
#
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#

## <summary>Polaris caf Policy Rules.</summary>

#####
## <summary>
##   Read /bootflash/iox/ files or harddisk IOX files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>

```

```

#
interface(`polaris_iox_files_read',`
    gen_require(`
        type polaris_iox_files_t;
        type polaris_disk_bootflash_t;
        type polaris_disk_harddisk_t;
        type polaris_iox_shared_files_t;
        type polaris_iox_alt_hdd_files_t;
    ')

    read_files_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_iox_files_t)
    list_dirs_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_iox_files_t)
    allow $1 polaris_iox_files_t:file map;

)

#####
## <summary>
##   Manage /bootflash/iox/ files or harddisk IOX files
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_iox_files_manage',`
    gen_require(`
        type polaris_iox_files_t;
        type polaris_disk_bootflash_t;
        type polaris_disk_harddisk_t;
        type polaris_iox_shared_files_t;
        type polaris_iox_alt_hdd_files_t;
    ')

    manage_files_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_iox_files_t)
    manage_dirs_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_iox_files_t)
    manage_lnk_files_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_iox_files_t)
    allow $1 polaris_iox_files_t:file map;

)

```

```
#####
## <summary>
## List /bootflash/iox/ dir or hardisk IOX dir
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_iox_dir_list`,`
    gen_require(`
        type polaris_iox_files_t;
        type polaris_disk_bootflash_t;
        type polaris_disk_harddisk_t;
        type httpd_var_run_t;
        type polaris_caf_var_run_t;
        type polaris_iox_shared_files_t;
        type polaris_iox_alt_hdd_files_t;
    `)

    list_dirs_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
    polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_iox_files_t)
    list_dirs_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
    polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, httpd_var_run_t)
    list_dirs_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
    polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_caf_var_run_t)

)

#####
## <summary>
## Search /bootflash/iox/ dir or harddisk IOX
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_iox_dir_search`,`
    gen_require(`
        type polaris_iox_files_t;
        type polaris_iox_shared_files_t;
    `)

    search_dirs_pattern($1, polaris_iox_files_t, polaris_iox_files_t)

)

```

```
#####
## <summary>
##   Read files like /guestshell/guestshell_set_netns.sh
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_guestshell_files_read`,`
    gen_require(`
        type polaris_guestshell_t;
        type polaris_iox_shared_files_t;
    `)

    read_files_pattern($1, { polaris_guestshell_t polaris_iox_shared_files_t }, polaris_guestshell_t)
    read_lnk_files_pattern($1, { polaris_guestshell_t polaris_iox_shared_files_t }, polaris_guestshell_t)
)

```

```
#####
## <summary>
##   Execute files with polaris_guestshell_exec_t type
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolecap/>
#
interface(`polaris_guestshell_exec_files_exec`,`
    gen_require(`
        type polaris_guestshell_exec_t;
    `)

    exec_files_pattern($1, polaris_guestshell_exec_t, polaris_guestshell_exec_t)
)

```

```
#####
## <summary>
##   Manage /var/run/netns/guestshell files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>

```

```

## </param>
## <rolebase/>
#
interface(`polaris_guestshell_var_run_files_manage`,`
    gen_require(`
        type polaris_guestshell_var_run_t;
        type var_run_t;
    `)

    manage_files_pattern($1, { polaris_guestshell_var_run_t var_run_t }, polaris_guestshell_var_run_t)
    manage_dirs_pattern($1, { polaris_guestshell_var_run_t var_run_t }, polaris_guestshell_var_run_t)
)

```

```
#####
```

```

## <summary>
##   Read CAF tmp files
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_caf_tmp_files_read`,`
    gen_require(`
        type polaris_caf_tmp_files_t;
    `)

    read_files_pattern($1, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
    read_lnk_files_pattern($1, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
    list_dirs_pattern($1, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
)

```

```
#####
```

```

## <summary>
##   Manage CAF tmp files
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_caf_tmp_files_manage`,`
    gen_require(`
        type polaris_caf_tmp_files_t;
    `)

    manage_files_pattern($1, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
    manage_dirs_pattern($1, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
)

```

```
)

#####
## <summary>
##   Getattr CAF tmp files
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_caf_tmp_files_getattr`,`
    gen_require(`
        type polaris_caf_tmp_files_t;
    `)
    getattr_files_pattern($1, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
`)

```

```
#####
## <summary>
##   Read CAF files. Typically at /opt/cisco/caf/
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_caf_files_read`,`
    gen_require(`
        type polaris_caf_files_t;
    `)

    read_files_pattern($1, polaris_caf_files_t, polaris_caf_files_t)
    read_lnk_files_pattern($1, polaris_caf_files_t, polaris_caf_files_t)
    list_dirs_pattern($1, polaris_caf_files_t, polaris_caf_files_t)
`)

```

```
#####
## <summary>
##   Manage .../guestshell/rootfs_mnt/cisco/cisco_cli/
##   This files are used to communicate between guestshell container
##   iosd, and shell_exec.sh
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.

```

```

## </summary>
## </param>
## <rolebase/>
#
interface(`polaris_caf_var_run_files_manage`,`
optional_policy(`
  gen_require(`
    type polaris_caf_var_run_t;
  `)

  manage_files_pattern($1, polaris_caf_var_run_t, polaris_caf_var_run_t)
  manage_dirs_pattern($1, polaris_caf_var_run_t, polaris_caf_var_run_t)
`)
)

```

```
#####
```

```

## <summary>
##   Read /etc/guestshell_rsa_key file
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_guestshell_key_read`,`
  gen_require(`
    type etc_t;
    type polaris_guestshell_ssh_key_t;
  `)

  read_files_pattern($1, etc_t, polaris_guestshell_ssh_key_t)
)

```

```
#####
```

```

## <summary>
##   Manage .../local/local1/core_dir/
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_caf_local_core_files_manage`,`
optional_policy(`

```

```

gen_require(
    type polaris_caf_core_files_t;
)

manage_files_pattern($1, polaris_caf_core_files_t, polaris_caf_core_files_t)
manage_dirs_pattern($1, polaris_caf_core_files_t, polaris_caf_core_files_t)
manage_lnk_files_pattern($1, polaris_caf_core_files_t, polaris_caf_core_files_t)
)
)

#####
## <summary>
##   Manage /mnt/sd3/iox_alt_hdd.dsk and
##   /mnt/sd3/iox_alt_hdd_mount_dir
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface( polaris_iox_alt_hdd_manage,`
optional_policy(
    gen_require(
        type polaris_disk_bootflash_t;
        type polaris_disk_harddisk_t;
        type polaris_iox_alt_hdd_files_t;
    )

    manage_files_pattern($1, polaris_iox_alt_hdd_files_t, polaris_iox_alt_hdd_files_t)
    manage_dirs_pattern($1, polaris_iox_alt_hdd_files_t, polaris_iox_alt_hdd_files_t)
)
)

#####
## <summary>
##   Getattr alternate harddisk files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface( polaris_iox_alt_hdd_getattr,`
    gen_require(
        type polaris_iox_alt_hdd_files_t;

```

```

    ')

    allow $1 polaris_iox_alt_hdd_files_t:filesystem getattr;
')

#####
## <summary>
##   Manage tty device link files. Typically at /dev/
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_caf_tty_lnk_manage`,`
    gen_require(`
        type polaris_caf_tty_file_t;
    `)

    create_lnk_files_pattern($1, polaris_caf_tty_file_t, polaris_caf_tty_file_t)
    read_lnk_files_pattern($1, polaris_caf_tty_file_t, polaris_caf_tty_file_t)
    delete_lnk_files_pattern($1, polaris_caf_tty_file_t, polaris_caf_tty_file_t)
)

#####
## <summary>
##   Manage tty device chr files.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_caf_chr_file_read`,`
    gen_require(`
        type devpts_t;
    `)

    setattr_chr_files_pattern($1, devpts_t, devpts_t)
    read_chr_files_pattern($1, devpts_t, devpts_t)
)

#####
## <summary>
## Execute caf in the polaris_caf domain.
## </summary>

```

```

## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_caf_domtrans`,`
gen_require(`
type polaris_caf_t, polaris_caf_exec_t;
`)

domtrans_pattern($1, polaris_caf_exec_t, polaris_caf_t)
`)

#####
## <summary>
## Provide process signal perms.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_caf_proc_signal_perms`,`
gen_require(`
type polaris_caf_t;
`)

allow $1 polaris_caf_t:process sigkill;
`)

#####
## <summary>
## Write/read /tmp/ioxss_up file
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_ioxss_rp_tmp_manage`,`
gen_require(`
type polaris_ioxss_rp_tmp_t;
`)

manage_files_pattern($1, { polaris_ioxss_rp_tmp_t }, polaris_ioxss_rp_tmp_t)

```

```
)

#####
## <summary>
##   Getattr of iosd_portal_app_lipc socket file
## </summary>
## <param name="domain">
##   <summary>
##   Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_iosd_portal_app_lipc_getattr`,
  gen_require(`
    type polaris_iosd_portal_app_lipc_t;
  `)
  getattr_sock_files_pattern($1, polaris_iosd_portal_app_lipc_t, polaris_iosd_portal_app_lipc_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscsaf.if

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```
#
# March 2017, Victor Kamensky
#
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#

```

```
/usr/cpp/bin/cpp_cp_svr -- gen_context(system_u:object_r:polaris_cpp_cp_exec_t,s0)
/usr/cpp/bin/cpp_cp_svr_ledp -- gen_context(system_u:object_r:polaris_cpp_cp_exec_t,s0)
/usr/cpp/bin/cpp_cp_svr_us_ledp -- gen_context(system_u:object_r:polaris_cpp_cp_exec_t,s0)
/usr/cpp/bin/cpp_cp_svr_vwlc -- gen_context(system_u:object_r:polaris_cpp_cp_exec_t,s0)
/usr/cpp/bin/cpp_cp_svr_vwlc_ledp -- gen_context(system_u:object_r:polaris_cpp_cp_exec_t,s0)
/usr/binos/conf/geo_ipv4_db -- gen_context(system_u:object_r:polaris_geodb_files_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppcp.fc

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```
#
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#
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#

```

```
# polarisnifmgr file contexts place holder
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisnifmgr.fc
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
# November 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2017-2021 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
policy_module(polarisgmib, 1.0);
```

```
gen_require(`  
    type polaris_gnmib_t;  
`)  
)
```

```
polaris_btrace_data_manage(polaris_gnmib_t)  
polaris_crft_data_manage(polaris_gnmib_t)  
polaris_chasfs_manage(polaris_gnmib_t)  
polaris_tdlresolve_read(polaris_gnmib_t)  
polaris_tdlldb_list_dirs(polaris_gnmib_t)  
polaris_cpld_read(polaris_gnmib_t)  
polaris_lua_read(polaris_gnmib_t)  
polaris_flashlib_read(polaris_gnmib_t)
```

```
polaris_db_tdlldb_dir_use(polaris_gnmib_t)
```

```
optional_policy(`  
# deals with /dev/shm/confd setup (schema and pid)  
polaris_confd_shm_setup(polaris_gnmib_t)  
# and allow read shared schema  
polaris_confd_shared_schema_read(polaris_gnmib_t)  
# from evconfd_dynamic_load  
polaris_confd_shared_schema_watch(polaris_gnmib_t)  
# read /proc/confd_pid/exe file  
polaris_confd_read(polaris_gnmib_t)  
`)  
)
```

```
allow polaris_gnmib_t self:capability dac_override;
```

```
logging_send_syslog_msg(polaris_gnmib_t)
```

```
# create ndbutil directory under /var/lock  
polaris_confd_ndbutil_create(polaris_gnmib_t)
```

```

polaris_ndbutil_lock_template(polaris_gnmib_t, gnmib, ".l.schema_use.gnmib")

# grpc library through sysconf accesses /sys/devices/system/cpu
# to get number of CPUs
dev_read_sysfs(polaris_gnmib_t)

# gnmib uses multiple (configurable) tcp ports for secure and insecure mode
corenet_tcp_bind_generic_port(polaris_gnmib_t)
allow polaris_gnmib_t self:tcp_socket { shutdown };
corenet_tcp_connect_all_ports(polaris_gnmib_t)

# iosp_token_read_from_file reads /tmp/rp/.iosp_gnmib
polaris_gnmib_token_read(polaris_gnmib_t)

# gnmib creates /var/tmp/gnmib.pid
type polaris_gnmib_var_t;
files_tmp_file(polaris_gnmib_var_t);
files_tmp_filetrans(polaris_gnmib_t, polaris_gnmib_var_t, file, "gnmib.pid");
manage_files_pattern(polaris_gnmib_t, polaris_gnmib_var_t, polaris_gnmib_var_t)
manage_dirs_pattern(polaris_gnmib_t, polaris_gnmib_var_t, polaris_gnmib_var_t)
manage_lnk_files_pattern(polaris_gnmib_t, polaris_gnmib_var_t, polaris_gnmib_var_t)

# read access to /dev/random
dev_read_rand(polaris_gnmib_t)

kernel_read_net_sysctls(polaris_gnmib_t)

type polaris_gnmib_gnoi_images_t;
files_type(polaris_gnmib_gnoi_images_t);
polaris_bootflash_filetrans(polaris_gnmib_t, polaris_gnmib_gnoi_images_t, file,);
manage_files_pattern(polaris_gnmib_t, polaris_disk_bootflash_t, polaris_gnmib_gnoi_images_t)

# need to execute install engine scripts
polaris_install_engine_domtrans(polaris_gnmib_t)

# need access to shell to execute install scripts
corecmd_exec_shell(polaris_gnmib_t)
corecmd_exec_bin(polaris_gnmib_t)

# install script needs rmonbifo
polaris_rmonbifo_tmp_read(polaris_gnmib_t)

# not sure why this is needed
auth_map_passwd(polaris_gnmib_t)

#DB persistence
polaris_tdlbpbersist_setup(polaris_gnmib_t)

```

```

polaris_tmp_tlddb_persist_setup(polaris_gnmib_t)

allow polaris_gnmib_t self:capability sys_resource;

# needed to fstat and check space when transferring image for os.proto install rpc
fs_getattr_xattr_fs(polaris_gnmib_t)

# needed by gnmib ui because uipeer heartbeat timer accesses TDL epoch files
polaris_issu_tmp_files_read(polaris_gnmib_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisgnmib.te
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#
# October 2019, Patrick O'Halloran
#
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#

/usr/binos/conf/mcp_crft_request.sh -- gen_context(system_u:object_r:polaris_crft_request_exec_t,s0)

#NGWC - nyquist, edison, bigbang
/mnt/sd3/user/.CRFT(/.*)?      gen_context(system_u:object_r:polaris_crft_data_t,s0)
/mnt/sd3/user/.CRFT/[0-9]*(.*)?  gen_context(system_u:object_r:polaris_crft_data_t,s0)
/mnt/sd3/user/.CRFT/archive(/.*)?  gen_context(system_u:object_r:polaris_crft_data_t,s0)

#NGWC - macallan, starfleet
/flash1/user/.CRFT(/.*)?      gen_context(system_u:object_r:polaris_crft_data_t,s0)
/flash1/user/.CRFT/[0-9]*(.*)?  gen_context(system_u:object_r:polaris_crft_data_t,s0)
/flash1/user/.CRFT/archive(/.*)?  gen_context(system_u:object_r:polaris_crft_data_t,s0)

#MCP, QWLC
/vol/harddisk/.CRFT(/.*)?      gen_context(system_u:object_r:polaris_crft_data_t,s0)
/vol/harddisk/.CRFT/[0-9]*(.*)?  gen_context(system_u:object_r:polaris_crft_data_t,s0)
/vol/harddisk/.CRFT/archive(/.*)?  gen_context(system_u:object_r:polaris_crft_data_t,s0)

#VXE, WLC, CRANKSHAFT, MCP
/bootflash/.CRFT(/.*)?      gen_context(system_u:object_r:polaris_crft_data_t,s0)
/bootflash/.CRFT/[0-9]*(.*)?  gen_context(system_u:object_r:polaris_crft_data_t,s0)
/bootflash/.CRFT/archive(/.*)?  gen_context(system_u:object_r:polaris_crft_data_t,s0)

#CRANKSHAFT - blackheart, sparrow
/flash1/.CRFT(/.*)?      gen_context(system_u:object_r:polaris_crft_data_t,s0)
/flash1/.CRFT/[0-9]*(.*)?  gen_context(system_u:object_r:polaris_crft_data_t,s0)
/flash1/.CRFT/archive(/.*)?  gen_context(system_u:object_r:polaris_crft_data_t,s0)

```

```
#PETRA - petra
# USER is a reserved selinux keyword - escape it like this
/flash10/USE[R]/.CRFT(/.*)?      gen_context(system_u:object_r:polaris_crft_data_t,s0)
/flash10/USE[R]/.CRFT/[0-9]*(/.*)?  gen_context(system_u:object_r:polaris_crft_data_t,s0)
/flash10/USE[R]/.CRFT/archive(/.*)?  gen_context(system_u:object_r:polaris_crft_data_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscrft.fc
```

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```
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#
```

```
# polariscmm file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscmm.fc
```

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```
#
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#
```

```
## <summary>Polaris install Policy Rules.</summary>
```

```
#####
```

```
## <summary>
## Read polaris_sw_data_t, effectively path to read polaris
## base image packages
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_sw_data_read',`
gen_require(`
type polaris_sw_data_t;
type tmp_t;
`
)
```

```
read_files_pattern($1, { tmp_t polaris_sw_data_t }, polaris_sw_data_t)
read_lnk_files_pattern($1, { tmp_t polaris_sw_data_t }, polaris_sw_data_t)
list_dirs_pattern($1, { tmp_t polaris_sw_data_t }, polaris_sw_data_t)
')
```

```
#####
```

```
## <summary>
## Map polaris_sw_data_t, effectively path to map polaris
## base image packages
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_sw_data_map`,`
gen_require(`
type polaris_sw_data_t;
)
allow $1 polaris_sw_data_t:file map;
')
```

```
#####
```

```
## <summary>
## Manage polaris_sw_data_t, effectively path to set up polaris
## base image packages house holding
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_sw_data_manage`,`
gen_require(`
type polaris_sw_data_t;
type tmp_t;
)
manage_files_pattern($1, { tmp_t polaris_sw_data_t }, polaris_sw_data_t)
manage_lnk_files_pattern($1, { tmp_t polaris_sw_data_t }, polaris_sw_data_t)
manage_dirs_pattern($1, { tmp_t polaris_sw_data_t }, polaris_sw_data_t)
allow $1 polaris_sw_data_t:dir mounton;
')
```

```
#####
```

```
## <summary>
```

```

## Read polaris_patch_data_t, effectively path to read polaris
## smu patch or optional packages
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_patch_data_read`,`
gen_require(`
type polaris_patch_data_t;
type tmp_t;
`)
read_files_pattern($1, { tmp_t polaris_patch_data_t }, polaris_patch_data_t)
read_lnk_files_pattern($1, { tmp_t polaris_patch_data_t }, polaris_patch_data_t)
list_dirs_pattern($1, { tmp_t polaris_patch_data_t }, polaris_patch_data_t)
`)

#####
## <summary>
## Manage polaris_patch_data_t, effectively path to set up polaris
## smu patch or optional packages house holding
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_patch_data_manage`,`
gen_require(`
type polaris_patch_data_t;
type tmp_t;
`)
manage_files_pattern($1, { tmp_t polaris_patch_data_t }, polaris_patch_data_t)
manage_lnk_files_pattern($1, { tmp_t polaris_patch_data_t }, polaris_patch_data_t)
manage_dirs_pattern($1, { tmp_t polaris_patch_data_t }, polaris_patch_data_t)
`)

#####
## <summary>
## Watch patch_data directories
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>

```

```

## </param>
## <rolebase/>
#
interface(`polaris_patch_data_watch`,`
gen_require(`
type polaris_patch_data_t;
`)
allow $1 polaris_patch_data_t:dir watch;
`)

#####
## <summary>
## Write into tmp files created by install_show.sh
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_install_show_tmp_write`,`
gen_require(`
type polaris_install_show_tmp_t;
type tmp_t;
`)
write_files_pattern($1, { tmp_t polaris_install_show_tmp_t }, polaris_install_show_tmp_t)
`)

#####
## <summary>
## Read tmp files created by install_show.sh
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_install_show_tmp_read`,`
gen_require(`
type polaris_install_show_tmp_t;
type tmp_t;
`)
read_files_pattern($1, { tmp_t polaris_install_show_tmp_t }, polaris_install_show_tmp_t)
`)

#####

```

```

## <summary>
##   Manage tmp installer files and directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_install_show_tmp_manage',`
gen_require(`
type polaris_install_show_tmp_t;
`)
manage_dirs_pattern($1, polaris_install_show_tmp_t, polaris_install_show_tmp_t)
manage_files_pattern($1, polaris_install_show_tmp_t, polaris_install_show_tmp_t)
manage_lnk_files_pattern($1, polaris_install_show_tmp_t, polaris_install_show_tmp_t)
`)

#####
## <summary>
##   Manage /bootflash/.issu_loc_lock files
## TODO: provfunc.sh and hman have reference to /bootflash/$ISSU_LOCAL_LOCK_FILE.
##   For now, I am keeping manage_dirs_pattern for polaris_disk_bootflash_t.
##   Need to re-visit so that callers to this macro do not have write-permission
##   to all of bootflash..
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_issu_files_manage',`
gen_require(`
type polaris_issu_files_t;
type polaris_disk_bootflash_t;
`)

filetrans_pattern($1, polaris_disk_bootflash_t, polaris_issu_files_t, file, ".issu_loc_lock")
manage_files_pattern($1, polaris_issu_files_t, polaris_issu_files_t)
manage_dirs_pattern($1, polaris_disk_bootflash_t, polaris_issu_files_t)
`)

#####
## <summary>
## Manage ISSU tmp files, allowing to record and
## check upgrade progress

```

```

## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_issu_tmp_files_manage`,`
gen_require(`
type polaris_issu_tmp_files_t;
type tmp_t;
`)
manage_files_pattern($1, { tmp_t polaris_issu_tmp_files_t }, polaris_issu_tmp_files_t)
manage_lnk_files_pattern($1, { tmp_t polaris_issu_tmp_files_t }, polaris_issu_tmp_files_t)
manage_dirs_pattern($1, { tmp_t polaris_issu_tmp_files_t }, polaris_issu_tmp_files_t)
`)

```

```
#####
```

```

## <summary>
## Write/read any regular file/directory from /bootflash/.install
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_disk_install_manage`,`
gen_require(`
type polaris_disk_install_t;
`)
manage_dirs_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
manage_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
manage_lnk_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
allow $1 polaris_disk_install_t:dir watch;
`)

```

```
#####
```

```

## <summary>
## Read any regular file/directory from /bootflash/.install
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_disk_install_read`,`

```

```

gen_require(`
    type polaris_disk_install_t;
`)
search_dirs_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
read_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
read_lnk_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
allow $1 polaris_disk_install_t:dir {watch read};
)

```

```
#####
```

```

## <summary>
##   Get attributes of any regular file/directory from /bootflash/.install
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_disk_install_fs_getattr`,`
    gen_require(`
        type polaris_disk_install_t;
    `)
    allow $1 polaris_disk_install_t:filesystem getattr;
)

```

```
#####
```

```

## <summary>
##   Manage /tmp/installer files and directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_install_tmp_manage`,`
    gen_require(`
        type polaris_install_tmp_t;
    `)
    manage_dirs_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
    manage_files_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
    manage_lnk_files_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
    manage_fifo_files_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
)

```

```
#####
```

```
## <summary>
```

```

## Read /tmp/installer files and directories
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_install_tmp_read`,`
gen_require(`
type polaris_install_tmp_t;
`)
list_dirs_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
read_files_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
read_lnk_files_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
allow $1 polaris_install_tmp_t:dir watch;
allow $1 polaris_install_tmp_t:file map;
`)

#####
## <summary>
## Execute install related scripts in its own domain.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_install_engine_domtrans`,`
gen_require(`
type polaris_install_engine_t, polaris_install_engine_exec_t;
`)

domtrans_pattern($1, polaris_install_engine_exec_t, polaris_install_engine_t)
`)

#####
## <summary>
## Write into tmp log files created by install engine
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_install_tmp_log_write`,`

```

```

gen_require(
    type polaris_install_tmp_log_t;
)
write_files_pattern($1, polaris_install_tmp_log_t, polaris_install_tmp_log_t)
)

#####
## <summary>
##   Execute install selinux related scripts in its own domain.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_install_selinux_domtrans`,`
    gen_require(
        type polaris_install_selinux_t, polaris_install_selinux_exec_t;
    )

    domtrans_pattern($1, polaris_install_selinux_exec_t, polaris_install_selinux_t)
)

#####
## <summary>
##   Execute wireless install related scripts in its own domain.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_install_wireless_domtrans`,`
    gen_require(
        type polaris_install_wireless_t, polaris_install_wireless_exec_t;
    )

    domtrans_pattern($1, polaris_install_wireless_exec_t, polaris_install_wireless_t)
)

#####
## <summary>
##   Execute install show scripts in its own domain.
## </summary>
## <param name="domain">
##   <summary>

```

```

## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_install_show_domtrans`,`
    gen_require(`
        type polaris_install_show_t, polaris_install_show_exec_t;
    `)

    domtrans_pattern($1, polaris_install_show_exec_t, polaris_install_show_t)
`)

#####
## <summary>
## Allow the specified domain to manage KGV data files
## I.e under /tmp/pkg_cs_debug created by function verify_pkg
## common scripts file.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_pkg_cs_debug_manage`,`
    gen_require(`
        type polaris_pkg_cs_debug_t;
    `)

    files_tmp_filetrans($1, polaris_pkg_cs_debug_t, dir, "pkg_cs_debug")
    fs_tmpfs_filetrans($1, polaris_pkg_cs_debug_t, dir, "pkg_cs_debug")
    manage_dirs_pattern($1, polaris_pkg_cs_debug_t, polaris_pkg_cs_debug_t)
    manage_files_pattern($1, polaris_pkg_cs_debug_t, polaris_pkg_cs_debug_t)
`)

#####
## <summary>
## Manage /file which is generated on "flock -u file /tmp/sysctrl_i2c.lck"
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_i2c_lock_file_manage`,`
    gen_require(`
        type polaris_i2c_lock_file_t;
    `)

```

```

        manage_dirs_pattern($1, polaris_i2c_lock_file_t, polaris_i2c_lock_file_t)
        manage_files_pattern($1, polaris_i2c_lock_file_t, polaris_i2c_lock_file_t)
    ')

#####
## <summary>
##   write /tmp/installer files and directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_install_tmp_write`,`
    gen_require(`
        type polaris_install_tmp_t;
    `)
    write_files_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
    allow $1 polaris_install_tmp_t:dir watch;
)

#####
## <summary>
##   Read/Write /.images files and directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_install_images_manage`,`
    gen_require(`
        type polaris_install_images_t;
    `)

    manage_dirs_pattern($1, polaris_install_images_t, polaris_install_images_t)
    manage_files_pattern($1, polaris_install_images_t, polaris_install_images_t)
)

#####
## <summary>
## Read ISSU tmp files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.

```

```

## </summary>
## </param>
#
interface(`polaris_issu_tmp_files_read`,`
gen_require(`
type polaris_issu_tmp_files_t;
type tmp_t;
`)
list_dirs_pattern($1, { tmp_t polaris_issu_tmp_files_t }, polaris_issu_tmp_files_t)
read_files_pattern($1, { tmp_t polaris_issu_tmp_files_t }, polaris_issu_tmp_files_t)
read_lnk_files_pattern($1, { tmp_t polaris_issu_tmp_files_t }, polaris_issu_tmp_files_t)
allow $1 polaris_issu_tmp_files_t:file map;
`)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisinstall.if
```

No license file was found, but licenses were detected in source scan.

```

#
# August 2017, Shawn Lu
#
# Copyright (c) 2017-2019 by Cisco Systems, Inc.
# All rights reserved
#

```

```
policy_module(polarisodm, 1.0);
```

```

gen_require(`
type polaris_odm_t;
`)

```

```

polaris_btrace_data_manage(polaris_odm_t)
polaris_crft_data_manage(polaris_odm_t)
polaris_chasfs_manage(polaris_odm_t)
polaris_tdlresolve_read(polaris_odm_t)
polaris_tdlldb_list_dirs(polaris_odm_t)
polaris_cpld_read(polaris_odm_t)
polaris_lua_read(polaris_odm_t)
polaris_flashlib_read(polaris_odm_t)

```

```
polaris_ripc_sman_ui_serv_connect(polaris_odm_t)
```

```
polaris_db_tdlldb_dir_use(polaris_odm_t)
```

```

# allow setrlimit
allow polaris_odm_t self:capability sys_resource;
allow polaris_odm_t self:process setrlimit;
allow polaris_odm_t self:capability dac_override;

```

```
# odm_svr2clnt_data uses subdirectory for channels needs explicit rule
# to allow it. ODM elastic value is 2 now, add more if need in the
# future.
gen_require(
    type polaris_odm_server2client_data_mqipc_t;
)
polaris_mqipc_create_name_dir(polaris_odm_t, polaris_odm_server2client_data_mqipc_t, odm_svr2clnt_data-b1)
polaris_mqipc_create_name_dir(polaris_odm_t, polaris_odm_server2client_data_mqipc_t, odm_svr2clnt_data-b0)
polaris_mqipc_create_name_dir(polaris_odm_t, polaris_odm_server2client_data_mqipc_t, odm_svr2clnt_data)

logging_send_syslog_msg(polaris_odm_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisodm.te

No license file was found, but licenses were detected in source scan.

```
#
# March 2017, Victor Kamensky
#
# Copyright (c) 2016-2019 by Cisco Systems, Inc.
# All rights reserved
#
```

```
## <summary>Polaris polarisreflector Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisreflector.if

No license file was found, but licenses were detected in source scan.

```
#
# June 2017, Victor Kamensky
#
# Copyright (c) 2017-2021 by Cisco Systems, Inc.
# All rights reserved
#
```

```
policy_module(polariscontainer, 1.0);
```

```
# polaris_default_container_t type for not labeled container
polaris_container_domain_template(default)
```

```
# polaris_utd_container_t type for snort container
polaris_container_domain_template(utd)
polaris_utd_container(polaris_utd_container_t)
```

```
# polaris_utdl_container_t type for snort container, that has
# legacy configuration, need more permissions
```

```

polaris_container_domain_template(utdl)
polaris_utd_container(polaris_utdl_container_t)

# manage /tmp/xml/{Utd*} dirs
polaris_vman_log_files_manage(polaris_utdl_container_t)
optional_policy(
    polaris_cedge_xml_tmp_manage(polaris_utdl_container_t)
)

allow polaris_utdl_container_t ramfs_t:file map;

polaris_iox_container_watch(polaris_utdl_container_t)

# work with memif
optional_policy(
    polaris_qfp_dgram_send(polaris_utdl_container_t)
)

# creates /tmp/HTX-IOX/sw-htx-service
optional_policy(
    polaris_htx_iox_tmp_manage(polaris_utdl_container_t)
)
optional_policy(
    polaris_htx_use_client_socket(polaris_utdl_container_t)
)

# allow container to work with /tmp/binos-IOX
optional_policy(
    polaris_qfp_memif_manage(polaris_utdl_container_t)
)

# snort works with /dev/shm/SPO_DAQ_MMAPP_OBJ_
fs_exec_tmpfs_files(polaris_utdl_container_t)

# allow container to work with /tmp/xml/* files
optional_policy(
    polaris_vman_tmp_manage(polaris_utdl_container_t)
)

gen_require(
    type container_file_t;
)
polaris_disk_type(container_file_t)

# legacy utd (snort) container in /etc/init.d/rc.local does unconditional
# mount of ramfs on /tmp/snortlogs
fs_mount_ramfs(polaris_utdl_container_t)
# legacy utd (snort) container in /etc/init.d/rc.local does unconditional

```

```

# mount of tmpfs on /dev/shm
fs_mount_tmpfs(polaris_utdl_container_t)
fs_manage_tmpfs_dirs(polaris_utdl_container_t)
fs_manage_tmpfs_files(polaris_utdl_container_t)
fs_manage_tmpfs_symlinks(polaris_utdl_container_t)

# Allow ramfs access to utd container
fs_manage_ramfs_dirs(polaris_utdl_container_t)
fs_manage_ramfs_files(polaris_utdl_container_t)

# Allow link file access from cron to crond
kernel_read_state(polaris_utdl_container_t)

# Allow Snort
allow polaris_utdl_container_t self:packet_socket map;

# polaris_iox_container_t type for generic IOx containers
polaris_container_domain_template(iox)

fs_mount_tmpfs(polaris_iox_container_t)
fs_manage_tmpfs_dirs(polaris_iox_container_t)
fs_manage_tmpfs_files(polaris_iox_container_t)
fs_manage_tmpfs_symlinks(polaris_iox_container_t)
fs_manage_tmpfs_sockets(polaris_iox_container_t)
# fs_manage_tmpfs_fifo_files is missing
gen_require(
    type tmpfs_t;
)
manage_fifo_files_pattern(polaris_iox_container_t, tmpfs_t, tmpfs_t)
fs_mounon_tmpfs(polaris_iox_container_t)
# container systemd file mmapfs tmpfs_t, i.e /usr/lib/systemd/systemd-journald
allow polaris_iox_container_t tmpfs_t:file map;

# container reads ip netns identity <pid>
fs_read_nsfs_files(polaris_iox_container_t)

# container systemd does remount of some file systems
gen_require(
    type svirt_sandbox_file_t;
)
allow polaris_iox_container_t svirt_sandbox_file_t:filesystem { remount };

polaris_caf_var_run_files_manage(polaris_iox_container_t)
# permit access to /local core files between host and container
polaris_caf_local_core_files_manage(polaris_iox_container_t)

allow polaris_iox_container_t self:cap_usersn { chown dac_override dac_read_search fsetid setgid setpcap setuid
sys_admin sys_boot };

```

```

gen_require(
    type devpts_t;
    type polaris_iox_container_t;
    type container_runtime_t;
    class fifo_file { getattr ioctl read write };
    class chr_file { getattr ioctl open read setattr write };
)

#===== polaris_iox_container_t =====
allow polaris_iox_container_t container_runtime_t:fifo_file { getattr setattr ioctl open read write };
allow polaris_iox_container_t devpts_t:chr_file { getattr ioctl open read setattr write };

# Normally lipc denials are addressed by code that is generated from TDL.
# I.e if process need to access lipc service it just need to be listed as 'client' of proper TDL service.
# If in this case iox_container process does not have its own TDL proc_def entry,
# therefore we use autogenerated polaris_lipc_iosd_portal_app_write macro/interface.
# Marking this policy optional, so that if platform TDL does not have proper service defined
# then polaris_lipc_iosd_portal_app_write won't be generated, but container policy still would compile.
optional_policy(
    gen_require(
        type polaris_iosd_t;
    )
    polaris_lipc_iosd_portal_app_write(polaris_iox_container_t, polaris_iosd_t)
)

docker_exec_lib(polaris_iox_container_t)
fs_exec_hugetlbfs_files(polaris_iox_container_t)
kernel_read_ring_buffer(polaris_iox_container_t)
dev_read_sysfs(polaris_iox_container_t)
polaris_iox_container_watch(polaris_iox_container_t)

# polaris_sdavc_container_t type for SDAVC container, that has
# legacy configuration, need more permissions

polaris_container_domain_template(sdavc)
polaris_utd_container(polaris_sdavc_container_t)

# manage /tmp/xml/{SDAVC*} dirs
polaris_vman_log_files_manage(polaris_sdavc_container_t)

# legacy SDAVC container in /etc/init.d/rc.local does unconditional
# mount of tmpfs on /dev/shm
fs_mount_tmpfs(polaris_sdavc_container_t)

# container systemd mounton tmpfs_t & tmpfs management
fs_mounton_tmpfs(polaris_sdavc_container_t)
fs_manage_tmpfs_dirs(polaris_sdavc_container_t)

```

```

fs_manage_tmpfs_files(polaris_sdavc_container_t)
fs_manage_tmpfs_symlinks(polaris_sdavc_container_t)
fs_manage_tmpfs_sockets(polaris_sdavc_container_t)
manage_fifo_files_pattern(polaris_sdavc_container_t, tmpfs_t, tmpfs_t)
# container systemd file mmaps tmpfs_t, i.e /usr/lib/systemd/systemd-journald
allow polaris_sdavc_container_t tmpfs_t:file map;
# Add watch on tmpfs_t/container_t dir/files
polaris_iox_container_watch(polaris_sdavc_container_t)

# map/mount/write hugetlbf files
gen_require(
    type hugetlbf_t;
)
allow polaris_sdavc_container_t hugetlbf_t:filesystem mount;
allow polaris_sdavc_container_t hugetlbf_t:file map;
fs_manage_hugetlbf_dirs(polaris_sdavc_container_t)

# Allow syslog_mod operation on kernel_t
kernel_clear_ring_buffer(polaris_sdavc_container_t)

# Allow tcpdump
allow polaris_sdavc_container_t self:packet_socket map;
allow polaris_utdl_container_t self:packet_socket map;

# add in the docker files labels to polaris_disk_type
gen_require(
    type container_var_lib_t;
    type container_share_t;
    type container_log_t;
)
polaris_disk_type(container_var_lib_t)
polaris_disk_type(container_share_t)
polaris_disk_type(container_log_t)

# polaris_waas_container_t type for WAAS KVM
polaris_kvm_domain_template(waas)

#Allow rw block files access to /dev/lvm_raid
storage_dontaudit_write_fixed_disk(polaris_waas_container_t)
storage_dontaudit_read_fixed_disk(polaris_waas_container_t)
#Manage hugetlbf files/dirs
fs_manage_hugetlbf_dirs(polaris_waas_container_t)
manage_files_pattern(polaris_waas_container_t, hugetlbf_t, hugetlbf_t)
fs_exec_hugetlbf_files(polaris_waas_container_t)

#allow access of /dev/kvm device

```

```

dev_rw_kvm(polaris_waas_container_t)

#allow domain to search/write to virlogd_t
polaris_vman_virtlog_allow(polaris_waas_container_t)

# Allow for guest-share
gen_require(
    type polaris_iox_shared_files_t;
)
manage_files_pattern(polaris_iox_container_t, polaris_iox_shared_files_t, polaris_iox_shared_files_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscontainer.te

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```

#
# March 2017, Victor Kamensky
#
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#

## <summary>Polaris polarispvp Policy Rules.</summary>

```

```
#####
```

```

## <summary>
##   Execute a domain transition to run pvp.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed to transition.
##   </summary>
## </param>
#
interface(`polaris_pvp_domtrans`,
    gen_require(
        type polaris_pvp_t, polaris_pvp_exec_t;
    )

    domtrans_pattern($1, polaris_pvp_exec_t, polaris_pvp_t)
)

```

```
#####
```

```

## <summary>
##   Manage pvp temporary files and directories in /tmp.
## </summary>
## <param name="domain">
##   <summary>

```

```

## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_pvp_manage_tmp_files`,`
    gen_require(`
        type polaris_pvp_tmp_t;
    `)

    manage_files_pattern($1, polaris_pvp_tmp_t, polaris_pvp_tmp_t)
    manage_dirs_pattern($1, polaris_pvp_tmp_t, polaris_pvp_tmp_t)
    manage_fifo_files_pattern($1, polaris_pvp_tmp_t, polaris_pvp_tmp_t)
`)

#####
## <summary>
## Manage pvp process_state files and directories in
## /tmp/[rp|fp|cc]/pvp/process_state.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_pvp_manage_process_state_files`,`
    gen_require(`
        type polaris_process_state_t;
    `)

    manage_files_pattern($1, polaris_process_state_t, polaris_process_state_t)
`)

#####
## <summary>
## Getattr dirs pvp temporary files and directories in /tmp.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_pvp_getattrs_tmp_dirs`,`
    gen_require(`
        type tmp_t;
        type polaris_pvp_tmp_t;
    `)

```

```

    getattr_dirs_pattern($1, tmp_t, polaris_pvp_tmp_t)
)

#####
## <summary>
##   Read from pvp stdin. Should be granted to scripts spawned
## from pvp with domain transition. pvp stdin (0) points to fifo
## file like /tmp/rp/pvp/work/inot_fifo
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_pvp_stdin_read`,`
    gen_require(`
        type polaris_pvp_tmp_t;
    `)

    read_fifo_files_pattern($1, polaris_pvp_tmp_t, polaris_pvp_tmp_t)
)

#####
## <summary>
##   Read pvp temporary files and directories in /tmp.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_pvp_read_tmp_files`,`
    gen_require(`
        type tmp_t;
        type polaris_pvp_tmp_t;
    `)

    rw_files_pattern($1, { tmp_t polaris_pvp_tmp_t }, polaris_pvp_tmp_t)
)

#####
## <summary>
##   Read pvp SAI files under
## /tmp/[rp|fp|cc/*]/pvp/sai_process.
## </summary>

```

```

## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_pvp_read_sai_files`,`
  gen_require(`
    type polaris_pvp_sai_t;
  `)
  read_files_pattern($1, polaris_pvp_sai_t, polaris_pvp_sai_t)
  list_dirs_pattern($1, polaris_pvp_sai_t, polaris_pvp_sai_t)
  allow $1 polaris_pvp_sai_t:dir watch;
`)

#####
## <summary>
##   Delete pvp SAI dirs and files under
##   /tmp/[rp|fp|cc/*]/pvp/sai_process.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_pvp_delete_sai_files`,`
  gen_require(`
    type polaris_pvp_sai_t;
  `)
  allow $1 polaris_pvp_sai_t:dir { remove_name rmdir write };
  allow $1 polaris_pvp_sai_t:file unlink;
`)

#####
## <summary>
##   Watch pvp process_state directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_process_state_watch`,`
  gen_require(`
    type polaris_process_state_t;
  `)

```

```
)
    allow $1 polaris_process_state_t:dir watch;
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispvp.if

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```
#
# March 2017, Victor Kamensky
#
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#
```

```
policy_module(polarisrmonbifo, 1.0);
```

```
#####
# Polaris Rmonbifo Driver policy
#####
```

```
# note polaris_proc_rmonbifo_t is defined in kernel/kernel.te, since genfscon
# statements could be only in base policy
```

```
type polaris_rmonbifo_tmp_t;
files_type(polaris_rmonbifo_tmp_t)
```

```
polaris_systemd_tmpfiles_tmp_filetrans(polaris_rmonbifo_tmp_t, dir, "rmonbifo")
```

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\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrmonbifo.te

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```
#
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#
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#
```

```
/bootflash/sdavc(/.*)? gen_context(system_u:object_r:polaris_sdavc_proxy_files_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarissdavicproxy.fc

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```
#
# August 2017, Shawn Lu
```

```
#
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#

# polarisodm file contexts place holder

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisodm.fc
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#
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#
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#

/usr/binos/conf/auto_upgrade_client.sh -- gen_context(system_u:object_r:polaris_autoupgrade_exec_t,s0)
/usr/binos/conf/auto_upgrade_helper.sh -- gen_context(system_u:object_r:polaris_autoupgrade_exec_t,s0)
/usr/binos/conf/auto_upgrade_trigger.sh -- gen_context(system_u:object_r:polaris_autoupgrade_exec_t,s0)
/usr/binos/conf/auto_upgrade_client_helper.sh -- gen_context(system_u:object_r:polaris_autoupgrade_exec_t,s0)

/tmp/etc/installer gen_context(system_u:object_r:polaris_autoupgrade_tmp_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisautoupgrade.fc
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#
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#
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#

# polariswstatsd file contexts place holder

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswstatsd.fc
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#
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#
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#
```

```

/usr/binos/conf/bexecute.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/bin/bexecute -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
# still exists for backward compatibility
/tmp/etc/bexecute -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/bexec.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/brelay.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/bin/brelay -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/ioucon.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/runin.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/runin_exec_proc.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/runon.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/in.telnetd.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)

/usr/binos/conf/brelay_console.sh -- gen_context(system_u:object_r:polaris_bconsole_exec_t,s0)

# mcp_chvrf.sh used by some systemd units to switch vrf (ip namespace)
# of xinetd that drives brelay service
/usr/binos/conf/mcp_chvrf.sh -- gen_context(system_u:object_r:polaris_chvrf_exec_t,s0)

# used by "request platform software system shell" CLI
/usr/binos/conf/mcp_record_shell.sh -- gen_context(system_u:object_r:polaris_platform_shell_exec_t,s0)
/usr/binos/conf/mcp_shell.sh -- gen_context(system_u:object_r:polaris_shell_exec_t,s0)

# used by "sh pla so process memory r0 name iosd maps" CLI
/usr/binos/conf/mcp_process_maps.sh -- gen_context(system_u:object_r:polaris_process_maps_exec_t,s0)

# used by "req platform software console attach switch standby R0" CLI
/usr/binos/conf/mcp_console_attach.sh -- gen_context(system_u:object_r:polaris_mcp_console_attach_exec_t,s0)
/usr/binos/bin/ioucon -- gen_context(system_u:object_r:polaris_ioucon_exec_t,s0)

# ngio_module_session.sh used by "hw-module session" CLI
/usr/binos/conf/ngio_module_session.sh -- gen_context(system_u:object_r:polaris_ngio_module_session_exec_t,s0)

#used by "upgrade rom-monitor capsule primary switch 1 R0" CLI
/usr/binos/conf/cat9k-primary-capsule-upgrade.sh --
gen_context(system_u:object_r:polaris_capsule_upgrade_exec_t,s0)

/usr/binos/conf/cat9k-capsule-upgrade.sh -- gen_context(system_u:object_r:polaris_capsule_upgrade_exec_t,s0)

/mnt/sd3/user/capsule-upgrade.log -- gen_context(system_u:object_r:polaris_capsule_upgrade_log_t,s0)
/usr/binos/conf/mcp_dmesg_service.sh -- gen_context(system_u:object_r:polaris_mcp_dmesg_exec_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbexecute.fc
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#

```

# August 2017, Shawn Lu

#

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#

## <summary>Polaris wncd Policy Rules.</summary>

#####

## <summary>

## Read files under /mnt/images/...these are related to AccessPoint images

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_wlc\_ap\_images\_read`,`

gen\_require(  
type polaris\_wlc\_ap\_images\_t;  
)

read\_files\_pattern(\$1, polaris\_wlc\_ap\_images\_t, polaris\_wlc\_ap\_images\_t)  
read\_lnk\_files\_pattern(\$1, polaris\_wlc\_ap\_images\_t, polaris\_wlc\_ap\_images\_t)  
list\_dirs\_pattern(\$1, polaris\_wlc\_ap\_images\_t, polaris\_wlc\_ap\_images\_t)  
allow \$1 polaris\_wlc\_ap\_images\_t:file map;  
)

## <summary>

## Manage files under /mnt/images/...these are related to AccessPoint images

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_wlc\_ap\_images\_manage`,`

gen\_require(  
type polaris\_wlc\_ap\_images\_t;  
type mnt\_t;  
)

manage\_files\_pattern(\$1, polaris\_wlc\_ap\_images\_t, polaris\_wlc\_ap\_images\_t)  
manage\_lnk\_files\_pattern(\$1, polaris\_wlc\_ap\_images\_t, polaris\_wlc\_ap\_images\_t)  
manage\_dirs\_pattern(\$1, polaris\_wlc\_ap\_images\_t, polaris\_wlc\_ap\_images\_t)

```
# transition when /mnt/images is created
filetrans_pattern($1, mnt_t, polaris_wlc_ap_images_t, dir, "images")
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswncd.if
```

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```
#
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#
```

```
## <summary>Polaris esg_tam_cfg Policy Rules.</summary>
```

```
#####
## <summary>
##   Getattr dirs pvp temporary directories in /tmp.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_tam_getattrs_tmp_dirs`,`
    gen_require(`
        type tmp_t;
        type polaris_tam_tmp_t;
    `)

    getattr_dirs_pattern($1, tmp_t, polaris_tam_tmp_t)
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisesgtamcfg.if
```

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```
#
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#
```

```
## <summary>Polaris MQIPC Policy Rules.</summary>
```

```

#####
# Polaris mqipc (infra/mqipc)
#####

#####
## <summary>
##   Make specified domain as one of mqipc types.
## </summary>
## <param name="domain">
##   <summary>
##     The domain serving as polaris_mqipc type
##   </summary>
## </param>
#
interface(`polaris_mqipc_type',`
    gen_require(`
        attribute polaris_mqipc;
    `)
    typeattribute $1 polaris_mqipc;
files_type($1)
`)

#####
## <summary>
##   Manage mqipc shared memory file in /dev/shm directory
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <param name="mqipc_label">
##   <summary>
##     Mqipc file label.
##   </summary>
## </param>
## <param name="object">
##   <summary>
##     Mqipc channel file name stem. It is used to derive set of file names
##     used by MQIPC.
##   </summary>
## </param>
#
interface(`polaris_mqipc_create_name',`
    gen_require(`
        type tmpfs_t;
        type tmp_t;

```

```

)
manage_files_pattern($1, tmpfs_t, $2)
allow $1 $2:file map;
type_transition $1 tmpfs_t : file $2 "mq.-$3";
manage_fifo_files_pattern($1, tmp_t, $2)
type_transition $1 tmp_t : fifo_file $2 "mq_ene_fifo.-$3";
type_transition $1 tmp_t : fifo_file $2 "mq_fnf_fifo.-$3";
fs_getattr_tmpfs($1)
)

#####
## <summary>
##   Manage mqipc shared memory file in /dev/shm/dir directory
## where dir is also derived from object parameter used as stem. It
## should be used only in cases where mqipc server operates with
## chanell under subdirectory. TDL autogeneration does not pick up
## this so interface call should be added explicitly.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <param name="mqipc_label">
##   <summary>
##     Database file label.
##   </summary>
## </param>
## <param name="object">
##   <summary>
##     Mqipc file name stem. It is used to derive set of file names
## used by MQIPC.
##   </summary>
## </param>
#
interface(`polaris_mqipc_create_name_dir',`
gen_require(`
type tmpfs_t;
        type tmp_t;
)
manage_files_pattern($1, { tmpfs_t $2 }, $2)
allow $1 $2:file map;
manage_dirs_pattern($1, tmpfs_t, $2)
type_transition $1 tmpfs_t : { file dir } $2 "mq.-$3";
manage_fifo_files_pattern($1, { tmp_t $2 }, $2)
type_transition $1 tmp_t : fifo_file $2 "mq_ene_fifo.-$3";
type_transition $1 tmp_t : fifo_file $2 "mq_fnf_fifo.-$3";
fs_getattr_tmpfs($1)

```

```

')

#####
## <summary>
##   Manage mqipc shared memory file in /dev/shm directory
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <param name="mqipc_label">
##   <summary>
##     Mqipc channel file label.
##   </summary>
## </param>
#
interface(`polaris_mqipc_use`,
gen_require(
type tmpfs_t;
)
read_files_pattern($1, { tmpfs_t $2 }, $2)
write_files_pattern($1, { tmpfs_t $2 }, $2)
read_fifo_files_pattern($1, { tmp_t $2 }, $2)
write_fifo_files_pattern($1, { tmp_t $2 }, $2)
fs_getattr_tmpfs($1)
allow $1 $2:file map;
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismqipc.if

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```

#
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#

## <summary>Polaris issu_stack Policy Rules.</summary>

```

```

#####
## <summary>
##   Manage tmp files created by issu_stack.
## </summary>
## <param name="domain">
##   <summary>

```

```

## Domain allowed access.
## </summary>
## </param>
## <rolecap/>
#
interface(`polaris_issu_stack_tmp_manage',`
    gen_require(`
        type polaris_issu_stack_tmp_t;
    ')

    manage_files_pattern($1, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)
    manage_lnk_files_pattern($1, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)
')

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisissustack.if
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```

```

#
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#
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#
## <summary>Polaris Tmp Boot Policy Rules.</summary>

```

```

#####
# /tmp/sw/boot policy
#####

```

```

#####
## <summary>
## Read /tmp/sw/boot files. Does not cover rmonbifo file under
## /tmp/sw/boot/rmonbifo. For those use polaris_rmonbifo_tmp_read interface
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_boot_tmp_read',`
    gen_require(`
        type polaris_boot_tmp_t;
    ')

    read_files_pattern($1, polaris_boot_tmp_t, polaris_boot_tmp_t)
')

```

```
#####
## <summary>
##   Write /tmp/sw/boot files.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_boot_tmp_write`,`
gen_require(`
  type polaris_boot_tmp_t;
`)
  write_files_pattern($1, polaris_boot_tmp_t, polaris_boot_tmp_t)
`)

```

```
#####
## <summary>
##   Map any polaris_boot_tmp_t file, needed during install.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_boot_tmp_map`,`
  gen_require(`
    type polaris_boot_tmp_t;
  `)
  allow $1 polaris_boot_tmp_t:file map;
`)

```

```
#####
## <summary>
##   Manage /tmp/sw/boot files.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_boot_tmp_manage`,`
  gen_require(`

```

```

type polaris_boot_tmp_t;
)
    manage_files_pattern($1, polaris_boot_tmp_t, polaris_boot_tmp_t)
)

```

```
#####
```

```

## <summary>
## Create an polaris_boot_tmp_t object
## in tmpfs_t, tmp_t directories.
##
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <param name="object">
## <summary>
## The object class of the object being created.
## </summary>
## </param>
## <param name="name" optional="true">
## <summary>
## The name of the object being created.
## </summary>
## </param>
#

```

```

interface(`polaris_boot_tmp_filetrans`,`
gen_require(`
    type polaris_boot_tmp_t;
)
    fs_tmpfs_filetrans($1, polaris_boot_tmp_t, $2, $3)
    files_tmp_filetrans($1, polaris_boot_tmp_t, $2, $3)
)

```

```
#####
```

```

## <summary>
## Manage partition disk device that contains rommon image.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_rommon_device_manage`,`
gen_require(`

```

```

        type device_t;
        type polaris_rommon_device_t;
    )
    manage_blk_files_pattern($1, device_t, polaris_rommon_device_t)
    manage_chr_files_pattern($1, device_t, polaris_rommon_device_t)
)

```

```
#####
```

```

## <summary>
##   Read partition disk device that contains rommon image.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_rommon_device_read`,`
    gen_require(`
        type device_t;
        type polaris_rommon_device_t;
    `)
    read_blk_files_pattern($1, device_t, polaris_rommon_device_t)
    read_chr_files_pattern($1, device_t, polaris_rommon_device_t)
)

```

```
#####
```

```

## <summary>
##   Manage /bootflash/.prst_sync/reload_info
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_boot_file_manage`,`
    gen_require(`
        type polaris_boot_file_t;
    `)
    manage_files_pattern($1, polaris_boot_file_t, polaris_boot_file_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisboot.if

No license file was found, but licenses were detected in source scan.

```
#
```

```

# February 2020, Victor Kamensky
#
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#

policy_module(polariscedge_tanman, 1.0);

# why /usr/binos/conf/cedge-tanman.sh is not described in TDL?
polaris_process_domain_template(cedge_tanman)

polaris_boot_tmp_read(polaris_cedge_tanman_t)
polaris_chasfs_read(polaris_cedge_tanman_t)
polaris_cpld_read(polaris_cedge_tanman_t)
polaris_read_debug_conf(polaris_cedge_tanman_t)
polaris_use_btrace_fifo(polaris_cedge_tanman_t)

corecmd_exec_bin(polaris_cedge_tanman_t)
corecmd_exec_shell(polaris_cedge_tanman_t)
auth_use_nsswitch(polaris_cedge_tanman_t)

# /tmp/tan handling
type polaris_cedge_tanman_tmp_t;
files_tmp_file(polaris_cedge_tanman_tmp_t)
gen_require(
    type tmp_t;
)
manage_dirs_pattern(polaris_cedge_tanman_t, tmp_t, polaris_cedge_tanman_tmp_t)
manage_fifo_files_pattern(polaris_cedge_tanman_t, polaris_cedge_tanman_tmp_t, polaris_cedge_tanman_tmp_t)
files_tmp_filetrans(polaris_cedge_tanman_t, polaris_cedge_tanman_tmp_t, dir, "tan")

# calls du -sk /tmp/xml/System
fs_getattr_tmpfs(polaris_cedge_tanman_t)

# work with /tmp/xml
polaris_cedge_xml_tmp_manage(polaris_cedge_tanman_t)

# work with /tmp/tmp
polaris_cedge_tmp_manage(polaris_cedge_tanman_t)

polaris_btrace_tmppub_read(polaris_cedge_tanman_t)

allow polaris_cedge_tanman_t self:capability sys_resource;

# calls nice
allow polaris_cedge_tanman_t self:process setsched;

# runs inotifywait -mrq --format %f: -e moved_to /bootflash/tracelogs

```

```
# and removes files in /bootflash/tracelogs
polaris_btrace_persistent_data_manage(polaris_cedge_tanman_t)
```

```
# runs ps -eaf
# ps needs access to proc_t
kernel_read_system_state(polaris_cedge_tanman_t)
# ps needs access to state of all domains
domain_read_all_domains_state(polaris_cedge_tanman_t)
# "ps" needs read access to /sys/devices/system/cpu/online
# "ps" needs read access to /proc/uptime
dev_read_sysfs(polaris_cedge_tanman_t)
```

```
# watch over /bootflash/tracelogs
polaris_btrace_data_watch(polaris_cedge_tanman_t)
```

```
# watches over /tmp for /tmp/booted appearance
gen_require(`
    type tmp_t;
`)
allow polaris_cedge_tanman_t tmp_t:dir watch;
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscedgetanman.te

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```
#
# Aug 2020, Sridhar
#
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#
```

```
## <summary>Polaris tlscd process Policy Rules.</summary>
```

```
## <summary>
##   Allow the specified domain to manage UDS socket
## files. I.e /tmp/tlscd/
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_tlscd_uds_manage',`
    gen_require(`
        type polaris_tlscd_uds_t;
    `)
)
```

```
manage_sock_files_pattern($1, polaris_tlsd_uds_t, polaris_tlsd_uds_t)
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristlsd.if
```

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dnl

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dnl

dnl Same as Nyquist

dnl

dnl Nyquist Platform Max Bay Limits

```
max_bay_map_set(`rp', `per_bay', 0)
```

```
max_bay_map_set(`cc', `per_bay', 0)
```

```
max_bay_map_set(`fp', `per_bay', 0)
```

dnl in elastic scope each process has its own value

```
max_elastic_map_set(`rp', `elastic', BPROC_ODM, 0)
```

```
max_elastic_map_set(`cc', `elastic', BPROC_ODM, 0)
```

```
max_elastic_map_set(`fp', `elasitc', BPROC_ODM, 0)
```

```
max_elastic_map_set(`rp', `elastic', BPROC_WNCD, 0)
```

```
max_elastic_map_set(`cc', `elastic', BPROC_WNCD, 0)
```

```
max_elastic_map_set(`fp', `elastic', BPROC_WNCD, 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/msmaps.m4
```

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#

# September 2017, Victor Kamensky

#

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#

```
## <summary>Polaris polarisunconfined Policy Rules.</summary>
```

```
#####
```

```
## <summary>
```

```
## Make the specified type usable
```

```
## to be conditionally unconfined.
```

```
## </summary>
```

```
## <param name="domain">
```

```

## <summary>
## Type to be used for conditionally unconfined.
## </summary>
## </param>
#
interface(`polaris_domain_storage_unconfined_type`,`
    gen_require(`
        attribute polaris_storage_unconfined_type;
    `)
    typeattribute $1 polaris_storage_unconfined_type;
`)

#####
## <summary>
## Mark domain unconfined, if polaris_unconfined build
## macro is defined. Or if polaris_unconfined_conditional
## macro is defined make domain unconfined only if
## polaris_unconfined_all SELinux boolean is set on.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_domain_maybe_unconfined`,`
    ifdef(`polaris_unconfined`,`
        unconfined_domain($1)
    `)

    ifdef(`polaris_unconfined_conditional`,`
        polaris_domain_storage_unconfined_type($1)

        tunable_policy(`polaris_unconfined_all`,`
            polaris_unconfined_domain($1)
        `)
    `)
)
#implicitly confined domain being made permissive
permissive $1;
)

#####
## <summary>
## Mark iosd domain unconfined, if polaris_iosd_unconfined
## build macro is defined. Or if polaris_iosd_unconfined_conditional
## macro is defined make domain unconfined only if

```

```

## polaris_unconfined_iosd SELinux boolean is set on.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_iosd_maybe_unconfined',`
    ifdef(`polaris_iosd_unconfined',`
        unconfined_domain($1)
    `)

    ifdef(`polaris_iosd_unconfined_conditional',`
        polaris_domain_storage_unconfined_type($1)

        tunable_policy(`polaris_unconfined_iosd',`
            polaris_unconfined_domain($1)
        `)
    `)
`)

#####
## <summary>
## Unconfined access to kernel module resources.
## Like kernel_unconfined but without typeattribute use.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_kernel_unconfined',`
    gen_require(`
        attribute proc_type;
        attribute sysctl_type;
        type kernel_t;
        type unlabeled_t;
        type proc_kcore_t;
        type proc_kmsg_t;
    `)

    allow $1 { proc_type - proc_kcore_t - proc_kmsg_t } :{ file } ~entrypoint;
    allow $1 { proc_type - proc_kcore_t - proc_kmsg_t } :{ dir lnk_file } *;

    allow $1 sysctl_type:{ file } ~entrypoint;

```

```

allow $1 sysctl_type:{ dir lnk_file } *;

allow $1 kernel_t:system *;

allow $1 unlabeled_t:{ dir lnk_file sock_file fifo_file chr_file blk_file } *;
allow $1 unlabeled_t:file ~entrypoint;
allow $1 unlabeled_t:filesystem *;
allow $1 unlabeled_t:association *;
allow $1 unlabeled_t:packet *;
allow $1 unlabeled_t:process ~{ ptrace transition dyntransition execmem execstack execheap };

# LOOK AT ME
# kernel_load_module($1)
')

#####
## <summary>
## Unconfined access to network objects.
## Like corenet_unconfined but without typeattribute use.
## </summary>
## <param name="domain">
## <summary>
## The domain allowed access.
## </summary>
## </param>
#
interface(`polaris_corenet_unconfined',`
gen_require(`
    attribute node_type;
    attribute netif_type;
    attribute packet_type;
    attribute port_type;
)

allow $1 node_type:node *;
allow $1 netif_type:netif *;
allow $1 packet_type:packet *;
allow $1 port_type:dccp_socket { send_msg rcv_msg name_connect };
allow $1 port_type:tcp_socket { send_msg rcv_msg name_connect };
allow $1 port_type:udp_socket { send_msg rcv_msg };

# Bind to any network address.
allow $1 port_type:{ dccp_socket tcp_socket udp_socket rawip_socket } name_bind;
allow $1 node_type:{ dccp_socket tcp_socket udp_socket rawip_socket } node_bind;

)

#####

```

```

## <summary>
## Unconfined access to devices.
## Like dev_unconfined but without typeattribute use.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_dev_unconfined`,`
gen_require(`
attribute device_node;
        type memory_device_t;
        type mtrr_device_t;
)

allow $1 self:capability sys_rawio;
allow $1 { device_node - memory_device_t } :{ blk_file lnk_file } *;
allow $1 { device_node - memory_device_t } :{ file chr_file } ~{ execmod entrypoint };
allow $1 mtrr_device_t:file ~{ execmod entrypoint };
dev_getattr_all($1

)

```

```

#####
## <summary>
## Unconfined access to domains.
## Like domain_unconfined but without typeattribute use.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_domain_unconfined`,`
gen_require(`
attribute domain;
)

# Use/sendto/connectto sockets created by any domain.
allow $1 domain:{ socket_class_set socket key_socket } *;

allow $1 domain:system all_system_perms;
# Use descriptors and pipes created by any domain.
allow $1 domain:fd use;

```

```

allow $1 domain:fifo_file rw_file_perms;

allow $1 $1:dbus send_msg;

# Act upon any other process.
allow $1 domain:process ~{ ptrace transition dyntransition execmem execstack execheap setcurrent };
allow $1 domain:process ptrace;

# Create/access any System V IPC objects.
allow $1 domain:{ sem msgq shm } *;
allow $1 domain:msg { send receive };

# For /proc/pid
allow $1 domain:dir list_dir_perms;
allow $1 domain:file rw_file_perms;
allow $1 domain:lnk_file { read_lnk_file_perms ioctl lock };

# act on all domains keys
allow $1 domain:key *;

# pass constraints
# typeattribute $1 can_change_object_identity;
# typeattribute $1 set_curr_context;
# typeattribute $1 process_uncond_exempt;

# mcs_process_set_categories($1)

# userdom_filetrans_home_content($1)
')

#####
## <summary>
## Unconfined access to files.
## Like files_unconfined but without typeattribute use.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_files_unconfined`,`
gen_require(`
attribute file_type;
type shadow_t;
)

```

```

# Create/access any file in a labeled filesystem;
allow $1 { file_type - shadow_t }:{ file chr_file } ~{ execmod entrypoint relabelto };
allow $1 file_type:{ dir lnk_file sock_file fifo_file blk_file } *;
allow $1 file_type:service *;

# Mount/unmount any filesystem with the context= option.
allow $1 file_type:filesystem all_filesystem_perms;
)

```

```
#####
```

```

## <summary>
## Unconfined access to filesystems
## Like fs_unconfined but without typeattribute use.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_fs_unconfined`,`
gen_require(`
    attribute filesystem_type;
)

```

```
allow $1 filesystem_type:filesystem all_filesystem_perms;
```

```

# Create/access other files. fs_type is to pick up various
# pseudo filesystem types that are applied to both the filesystem
# and its files.
allow $1 filesystem_type:{ file } ~entrypoint;
allow $1 filesystem_type:{ dir lnk_file sock_file fifo_file chr_file blk_file } *;
)

```

```
#####
```

```

## <summary>
## Unconfined access to the SELinux kernel security server.
## Like selinux_unconfined but without typeattribute use.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_selinux_unconfined`,`
gen_require(`

```

```

        attribute boolean_type;
        type security_t;
        type secure_mode_policyload_t;
    )

    # use SELinuxfs
    allow $1 security_t:dir list_dir_perms;
    allow $1 security_t:file rw_file_perms;
    allow $1 boolean_type:file read_file_perms;
    allow $1 { boolean_type -secure_mode_policyload_t }:file write_file_perms;

    # Access the security API.
    allow $1 security_t:security ~{ load_policy setenforce setbool setseccommand };

    ifdef(`distro_rhel4',`
        # needed for systems without audit support
        auditallow $1 security_t:security setbool;
    ')

    # selinux_set_all_booleans($1)
    # selinux_load_policy($1)
    # selinux_set_parameters($1)
    # selinux_set_enforce_mode($1)
    ')

#####
## <summary>
## Make the specified domain unconfined.
## </summary>
## <param name="domain">
## <summary>
## Domain to make unconfined.
## </summary>
## </param>
#
interface(`polaris_unconfined_domain',`
    gen_require(`
        class dbus all_dbus_perms;
        class nscd all_nscd_perms;
        class passwd all_passwd_perms;
    ')

    # Use any Linux capability.

    allow $1 self:capability ~{ sys_module };
    allow $1 self:capability2 ~{ mac_admin mac_override };

```

```
allow $1 self:fifo_file { manage_fifo_file_perms relabelfrom relabelto };
```

```
# Transition to myself, to make get_ordered_context_list happy.
```

```
allow $1 self:process { dyntransition transition };
```

```
# Write access is for setting attributes under /proc/self/attr.
```

```
allow $1 self:file rw_file_perms;
```

```
allow $1 self:dir rw_dir_perms;
```

```
# Userland object managers
```

```
allow $1 self:nscd all_nscd_perms;
```

```
allow $1 self:dbus all_dbus_perms;
```

```
allow $1 self:passwd all_passwd_perms;
```

```
allow $1 self:association all_association_perms;
```

```
allow $1 self:socket_class_set create_socket_perms;
```

```
polaris_kernel_unconfined($1)
```

```
polaris_corenet_unconfined($1)
```

```
polaris_dev_unconfined($1)
```

```
polaris_domain_unconfined($1)
```

```
polaris_files_unconfined($1)
```

```
polaris_fs_unconfined($1)
```

```
polaris_selinux_unconfined($1)
```

```
systemd_config_all_services($1)
```

```
# in unconfined_domain_noaudit its under not deny_execmem
```

```
allow $1 self:process execmem;
```

```
# domain_mmap_low($1)
```

```
#
```

```
# ubac_process_exempt($1)
```

```
#
```

```
# optional_policy(`
```

```
# auth_unconfined($1)
```

```
# `)
```

```
#
```

```
# optional_policy(`
```

```
# # Communicate via dbusd.
```

```
# dbus_system_bus_unconfined($1)
```

```
# dbus_unconfined($1)
```

```
# `)
```

```
#
```

```
# optional_policy(`
```

```
# ipsec_setcontext_default_spd($1)
```

```
# ipsec_match_default_spd($1)
```

```
# `)
```

```
#
```

```

# optional_policy(`
# nscd_unconfined($1)
# ')
#
# optional_policy(`
# seutil_create_bin_policy($1)
# seutil_relabelto_bin_policy($1)
# ')
#
# optional_policy(`
# storage_unconfined($1)
# ')
#
# optional_policy(`
# xserver_unconfined($1)
# ')
')

#####
## <summary>
##   Make the specified domain able to work with cpp /tmp/cpp_ifdev_rep and
## /tmp/cpp_ifdev_req pipe files.
## </summary>
## <param name="type">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_unconfined_service_fifo_file_manage',`
    gen_require(`
        type unconfined_service_t;
    ')

    manage_fifo_files_pattern($1, unconfined_service_t, unconfined_service_t)
')

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisunconfined.if

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```

#
# March 2019, Shikhar Dogra
#
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#

```

```

policy_module(polarisfmancc, 1.0);

gen_require(
    type polaris_fman_cc_t;
)

polaris_btrace_data_manage(polaris_fman_cc_t)
polaris_crft_data_manage(polaris_fman_cc_t)
polaris_chasfs_manage(polaris_fman_cc_t)
polaris_tdlresolve_read(polaris_fman_cc_t)
polaris_tdlldb_list_dirs(polaris_fman_cc_t)
polaris_cpld_read(polaris_fman_cc_t)
polaris_lua_read(polaris_fman_cc_t)
polaris_flashlib_read(polaris_fman_cc_t)
polaris_cpld_dev_use(polaris_fman_cc_t)

# allow to send message to /dev/log
logging_send_syslog_msg(polaris_fman_cc_t)

# ISR Nightwatch module accesses libraries compiled with icc
polaris_icc_broken_relocations(polaris_fman_cc_t)

# cpp bleeds into switching platforms through fman_fp and fed
# apparently even on nyquist fed creates /tmp/cpp_anon_db
polaris_cpp_process(polaris_fman_cc_t)
polaris_cpp_tmp_files_use(polaris_fman_cc_t)

type polaris_iosd_fmanrp_mqipc_t;
polaris_mqipc_type(polaris_iosd_fmanrp_mqipc_t)

polaris_mqipc_create_name(polaris_fman_cc_t, polaris_iosd_fmanrp_mqipc_t, iosd-thr-fmanrp-R0:0)
polaris_mqipc_create_name(polaris_fman_cc_t, polaris_iosd_fmanrp_mqipc_t, iosd-thr-fmanrp-R0:0-cc0)
polaris_mqipc_create_name(polaris_fman_cc_t, polaris_iosd_fmanrp_mqipc_t, iosd-thr-fmanrp-R0:0-cc1)
polaris_mqipc_create_name(polaris_fman_cc_t, polaris_iosd_fmanrp_mqipc_t, iosd-thr-fmanrp-R0:0-cc2)
polaris_mqipc_create_name(polaris_fman_cc_t, polaris_iosd_fmanrp_mqipc_t, iosd-thr-fmanrp-R0:0-cc3)
polaris_mqipc_create_name(polaris_fman_cc_t, polaris_iosd_fmanrp_mqipc_t, iosd-thr-fmanrp-R0:0-cc4)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfmancc.te
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#
# March 2017, Victor Kamensky
#
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#

```

## <summary>Polaris polarispsvp Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispsvp.if  
No license file was found, but licenses were detected in source scan.

dnl

dnl May 2020, Swati Kumari

dnl

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dnl

dnl rpx86 Platform Max Bay Limits

max\_bay\_map\_set(`rp', `per\_bay', 0)

max\_bay\_map\_set(`cc', `per\_bay', 5)

max\_bay\_map\_set(`fp', `per\_bay', 2)

min\_bay\_ripc\_map\_set(`rp', `per\_bay', 0)

min\_bay\_ripc\_map\_set(`cc', `per\_bay', 1)

min\_bay\_ripc\_map\_set(`fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(`rp', `per\_bay', 2)

max\_bay\_ripc\_map\_set(`cc', `per\_bay', 6)

max\_bay\_ripc\_map\_set(`fp', `per\_bay', 2)

min\_bay\_ripc\_map\_set(`rp', `global', 0)

min\_bay\_ripc\_map\_set(`cc', `global', 1)

min\_bay\_ripc\_map\_set(`fp', `global', 0)

max\_bay\_ripc\_map\_set(`rp', `global', 2)

max\_bay\_ripc\_map\_set(`cc', `global', 6)

max\_bay\_ripc\_map\_set(`fp', `global', 2)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/rpx86maps.m4  
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#

# September 2017, Victor Kamensky

#

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#

/tmp/tmppub(/.\*)? gen\_context(system\_u:object\_r:polaris\_btrace\_tmppub\_t,s0)

# btrace utility to rotate logs

/usr/binos/bin/btman\_rotate\_immediate -- gen\_context(system\_u:object\_r:polaris\_btman\_exec\_t,s0)

```
# btrace utility to dump meta data
/usr/binos/bin/dump_btrace_meta -- gen_context(system_u:object_r:polaris_btman_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbtman.fc
```

No license file was found, but licenses were detected in source scan.

```
#
# March 2017, Victor Kamensky
#
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#
```

```
policy_module(polarisnvram, 1.0);
```

```
#####
# NVRAM
#####
```

```
ifdef(^ngwc_family',`
# suppose that in edison case nvram is not in partition
type polaris_nvram_file_t;
files_type(polaris_nvram_file_t)
# allow nvram file reside on persistent storage
polaris_pfile_type(polaris_nvram_file_t)
`)
```

```
ifdef(^blackheart_platform',`
gen_require(`
    type polaris_nvram_file_t;
    type polaris_iods_t;
`)
files_type(polaris_nvram_file_t)
# allow nvram file reside on persistent storage
polaris_pfile_type(polaris_nvram_file_t)
allow polaris_iods_t polaris_nvram_file_t:filesystem getattr;
`)
```

```
ifdef(^sparrow_platform',`
gen_require(`
    type polaris_nvram_file_t;
    type polaris_iods_t;
`)
files_type(polaris_nvram_file_t)
# allow nvram file reside on persistent storage
polaris_pfile_type(polaris_nvram_file_t)
`)
```

```

allow polaris_iosd_t polaris_nvram_file_t:filesystem getattr;
)

ifdef(`aventus_platform',`
gen_require(`
    type polaris_nvram_file_t;
    type polaris_iosd_t;
)
files_type(polaris_nvram_file_t)
# allow nvram file reside on persistent storage
polaris_pfile_type(polaris_nvram_file_t)
allow polaris_iosd_t polaris_nvram_file_t:filesystem getattr;
)

ifdef(`cabo_platform',`
gen_require(`
    type polaris_nvram_file_t;
    type polaris_iosd_t;
)
files_type(polaris_nvram_file_t)
# allow nvram file reside on persistent storage
polaris_pfile_type(polaris_nvram_file_t)
allow polaris_iosd_t polaris_nvram_file_t:filesystem getattr;
)

ifdef(`petra_platform',`
type polaris_nvram_file_t;
files_type(polaris_nvram_file_t)
# suppose that in edison case nvram is not in partition
gen_require(`
    type polaris_iosd_t;
)
# allow nvram file reside on persistent storage
polaris_pfile_type(polaris_nvram_file_t)
allow polaris_iosd_t polaris_nvram_file_t:filesystem getattr;
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisnvram.te

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```

#
# February 2020, Victor Kamensky
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#

```

```
## <summary>Polaris cyp Policy Rules.</summary>
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscyp.if
```

```
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```

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2016-2021 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
policy_module(polarischasfs, 1.0);
```

```
#####
```

```
# Chasfs policy
```

```
#####
```

```
gen_require(^
```

```
    attribute domain;
```

```
')
```

```
type polaris_chasfs_t;
```

```
files_type(polaris_chasfs_t)
```

```
files_tmp_filetrans(domain, polaris_chasfs_t, dir, "chassis")
```

```
files_tmp_filetrans(domain, polaris_chasfs_t, lnk_file, "chasfs")
```

```
# LOOK AT ME: on ultra /tmp/cc/chasfs is created as directory, but
```

```
# on other platforms it is symbolic to /tmp/chassis/local/cc/chasfs
```

```
# as it happens for rp and fp. Would it be better to fix ultra
```

```
# script(s)?
```

```
files_tmp_filetrans(domain, polaris_chasfs_t, dir, "chasfs")
```

```
# cpld-symlink.service, creates /tmp/chassis while /tmp is
```

```
# still tmpfs_t, ie before systemd-tmpfiles runs and had a
```

```
# chance to set tmp_t label on /tmp
```

```
gen_require(^
```

```
    type initrc_t;
```

```
')
```

```
fs_tmpfs_filetrans(initrc_t, polaris_chasfs_t, dir, "chassis")
```

```
init_script_tmp_filetrans(domain, polaris_chasfs_t, dir, "chasfs")
```

```
#####
```

```
# chasync
```

```
#####
```

```
polaris_process_domain_template(chasync)
```

```

corecmd_exec_bin(polaris_chasync_t)

# allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_chasync_t)

polaris_btrace_data_manage(polaris_chasync_t)
polaris_chasfs_manage(polaris_chasync_t)
polaris_cpld_read(polaris_chasync_t)
polaris_boot_tmp_read(polaris_chasync_t)
polaris_read_debug_conf(polaris_chasync_t)
polaris_rmonbifo_tmp_read(polaris_chasync_t)
polaris_proc_rmonbifo_read(polaris_chasync_t)

polaris_disk_bootflash_read_Ink(polaris_chasync_t)
polaris_disk_harddisk_read_Ink(polaris_chasync_t)

# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_chasync_t)

allow polaris_chasync_t self:capability sys_resource;
allow polaris_chasync_t self:process setpgid;

# access of crashinfo dir for the domain
polaris_disk_crashinfo_getattr(polaris_chasync_t)

# allow access of /tmp/rp/chasync for the polaris chasync_t domain to
# create/write/read dirs/files with domain specific context
type polaris_chasync_tmp_t;
files_type(polaris_chasync_tmp_t)
files_tmp_file(polaris_chasync_tmp_t)
files_tmp_filetrans(polaris_chasync_t, polaris_chasync_tmp_t, dir, "chasync")
manage_files_pattern(polaris_chasync_t, polaris_chasync_tmp_t, polaris_chasync_tmp_t)
manage_dirs_pattern(polaris_chasync_t, polaris_chasync_tmp_t, polaris_chasync_tmp_t)
manage_fifo_files_pattern(polaris_chasync_t, polaris_chasync_tmp_t, polaris_chasync_tmp_t)

# allow creation/access of temporary files created by chasync.sh like
# /tmp/sh-thd-1499428203 etc
files_tmp_filetrans(polaris_chasync_t, polaris_chasync_tmp_t, file)
manage_files_pattern(polaris_chasync_t, polaris_chasync_tmp_t, polaris_chasync_tmp_t)

fs_getattr_tmpfs(polaris_chasync_t)

# access of flash util for the domain
polaris_flashlib_read(polaris_chasync_t)

# read /proc/cmdline
kernel_read_system_state(polaris_chasync_t)

```

```

gen_require(
    type rsync_t;
    type init_t;
    type rsync_tmp_t;
)
rsync_entry_domtrans(polaris_chasync_t, rsync_t)
allow rsync_t polaris_chasync_t:process sigchld;
# file descriptor leak when rsync is called
allow rsync_t init_t:unix_stream_socket ioctl;

# upon exec rsync inherits chasync's stdout/stderr fifo files
allow rsync_t polaris_chasync_t:fifo_file { getattr write };
# in chasync_prepost_rsync.sh, CHASYNC_PID_DIR (rsync pid files) is deleted by rsync
fs_getattr_tmpfs(rsync_t)

# allow file:map for rsync_tmp_t
allow rsync_t rsync_tmp_t:file map;
dev_getattr_generic_blk_files(rsync_t)
dev_getattr_loop_control(rsync_t)
# need access to /usr/bin/mount
mount_entry_type(rsync_t)
# need access to dev/sda1
storage_getattr_fixed_disk_dev(rsync_t)
ifdef(`ngwc_family',`

#Read and write RPC sysctls
kernel_rw_rpc_sysctls(rsync_t)
mount_domtrans(rsync_t)
fstools_domtrans(rsync_t)
#Create/read/write on fixed device disk nodes
storage_manage_fixed_disk(rsync_t)
#stat -f -L -c %T /mnt/usb0
polaris_getattr_removable(rsync_t)
storage_filetrans_all_named_dev(rsync_t)
)
#===== polaris_dyncfg =====
polaris_dyncfg_tmp_read(rsync_t)

#===== polaris_chasync_t =====
polaris_btrace_persistent_data_search(polaris_chasync_t)
#chasync.sh code executes mv command
allow polaris_chasync_t self:process { setfscreate };
#chasync.sh code executes ping command to check if ping works before trying rsync for the first time
netutils_domtrans_ping(polaris_chasync_t)

#chasync.sh code in wlc saves logs during cleanup to /var/log/chasync
type polaris_chasync_log_t;

```

```

logging_log_file(polaris_chasync_log_t)
manage_files_pattern(polaris_chasync_t, polaris_chasync_log_t, polaris_chasync_log_t)
manage_dirs_pattern(polaris_chasync_t, polaris_chasync_log_t, polaris_chasync_log_t)
logging_log_filetrans(polaris_chasync_t, polaris_chasync_log_t, dir, "chasync")

#####
# chasfs_boottime script
#####

polaris_process_domain_template(chasfs_boottime)

unconfined_domain(polaris_chasfs_boottime_t)

# chasfs_boottime.sh starts cman_fp or cmand with -C option; allow its
# transition to fman_fp_t type
optional_policy(`
polaris_cm_rp_domtrans(polaris_chasfs_boottime_t)
`)
optional_policy(`
polaris_cm_fp_domtrans(polaris_chasfs_boottime_t)
`)
optional_policy(`
polaris_cm_cc_domtrans(polaris_chasfs_boottime_t)
`)

ifdef(`ngwc_family',`

# Allow iox_polaris.conf read
polaris_caf_files_read(polaris_chasync_t)

# Allow losetup in helper script
fstools_domtrans(polaris_chasync_t)

# Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_chasync_t)

#Allow console logging
term_open_unallocated_ttys(polaris_chasync_t)

# Allow logger which is used for syslog message
allow polaris_chasync_t self:unix_dgram_socket { connect create };
logging_send_syslog_msg(polaris_chasync_t)

# logger needs to run pidof
dev_read_sysfs(polaris_chasync_t)
domain_read_all_domains_state(polaris_chasync_t)

```

```

)

type polaris_chasync_files_t;
files_type(polaris_chasync_files_t)
polaris_pfile_type(polaris_chasync_files_t)

optional_policy(
gen_require(
    type polaris_disk_harddisk_t;
    type polaris_disk_bootflash_t;
)
filetrans_pattern(polaris_chasync_t, {polaris_disk_bootflash_t polaris_disk_harddisk_t}, polaris_chasync_files_t,
dir, "sys_report")
filetrans_pattern(polaris_chasync_t, {polaris_disk_bootflash_t polaris_disk_harddisk_t}, polaris_chasync_files_t,
dir, "fp_cc_crash")
filetrans_pattern(polaris_chasync_t, polaris_disk_bootflash_t, polaris_chasync_files_t, file,
"user_input_custom.xml")

# chasync can manage files inside of its own polaris_disk_chasync_t directories
manage_dirs_pattern(polaris_chasync_t, polaris_chasync_files_t, polaris_chasync_files_t)
manage_files_pattern(polaris_chasync_t, polaris_chasync_files_t, polaris_chasync_files_t)
allow polaris_chasync_t polaris_chasync_files_t:dir watch;
polaris_install_disk_read(polaris_chasync_t)
)

optional_policy(
# chansync invoked sys_report does ls /tmp/ufs/crashinfo
polaris_ncd_tmp_read(polaris_chasync_t)
)

# chasync moves inv files from /tftp/inv to chasfs directory
allow polaris_chasync_t self:capability { chown fowner fsetid };
gen_require(
type brctl_t;
)
# pd_iox.sh invokes brctl which needs access to chasfs
polaris_chasfs_read(brctl_t)

#allow chasync to unmount flash partition
mount_domtrans(polaris_chasync_t)

sysnet_domtrans_ifconfig(polaris_chasync_t)

# chasync.sh needs read access to /bootflash/.installer/install_issu_state
polaris_disk_install_read(polaris_chasync_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarischasfs.te

```

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```
#
# March 2017, Victor Kamensky
#
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#

policy_module(polariscpp, 1.0);

#####
# Polaris cpp (ultra)
#####

type polaris_cpp_device_t;
dev_node(polaris_cpp_device_t)

# deals with /dev/shm files semaphors, etc
type polaris_cpp_tmpfs_t;
files_tmpfs_file(polaris_cpp_tmpfs_t)
attribute polaris_cpp_domain;
fs_tmpfs_filetrans(polaris_cpp_domain, polaris_cpp_tmpfs_t, file)
manage_files_pattern(polaris_cpp_domain, tmpfs_t, polaris_cpp_tmpfs_t)
allow polaris_cpp_domain polaris_cpp_tmpfs_t:file map;
polaris_cpp_tmpfs_manage(polaris_cpp_domain)
polaris_cerr_shm_manage(polaris_cpp_domain)

# on TSN ucode_dram lives in hugetlbfs
fs_hugetlbfs_filetrans(polaris_cpp_domain, polaris_cpp_tmpfs_t, file)
gen_require(^
    type hugetlbfs_t;
)
manage_files_pattern(polaris_cpp_domain, hugetlbfs_t, polaris_cpp_tmpfs_t)

# deals with cpp /tmp files
type polaris_cpp_tmp_t;
files_tmp_file(polaris_cpp_tmp_t)
files_tmp_filetrans(polaris_cpp_domain, polaris_cpp_tmp_t, file, "cpp_anon_db")
files_tmp_filetrans(polaris_cpp_domain, polaris_cpp_tmp_t, file, "qm_rt_dbg")
files_tmp_filetrans(polaris_cpp_domain, polaris_cpp_tmp_t, fifo_file, "cpp_ifdev_rep")
files_tmp_filetrans(polaris_cpp_domain, polaris_cpp_tmp_t, fifo_file, "cpp_ifdev_req")
manage_files_pattern(polaris_cpp_domain, tmp_t, polaris_cpp_tmp_t)
manage_fifo_files_pattern(polaris_cpp_domain, tmp_t, polaris_cpp_tmp_t)
allow polaris_cpp_domain polaris_cpp_tmp_t:file map;

fs_getattr_tmpfs(polaris_cpp_domain)
```

```
# overlord/neptune access /sys/bus/pci/devices/0000:01:00.0/resource0
# when initializing the CPP DMAP library
optional_policy(
polaris_cpp_cavium_dma_map(polaris_cpp_domain)
')
```

```
type polaris_i95_device_t;
dev_node(polaris_i95_device_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscpp.te

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```
#
# March 2017, Victor Kamensky
#
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#
```

```
# some platforms have /usr/binos/bin/fman_fp as hardlink to
# /usr/binos/bin/fman_fp_image
/usr/binos/bin/fman_fp -- gen_context(system_u:object_r:polaris_fman_fp_exec_t,s0)
/usr/binos/bin/fman_fp_ledp -- gen_context(system_u:object_r:polaris_fman_fp_exec_t,s0)
/usr/binos/bin/fman_fp_vwlc_ledp -- gen_context(system_u:object_r:polaris_fman_fp_exec_t,s0)
/usr/binos/bin/fman_fp_us_ledp -- gen_context(system_u:object_r:polaris_fman_fp_exec_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfmanfp.fc

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```
#
# July 2017, Victor Kamensky
#
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#
```

```
## <summary>Polaris ngiolite Policy Rules.</summary>
```

```
#####
```

```
## <summary>
```

```
## Execute mcp_smartctl_cmds.sh in the polaris_smartctl domain.
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed to transition.
```

```
## </summary>
## </param>
#
interface(`polaris_smartctl_domtrans`,`
    gen_require(`
        type polaris_smartctl_t, polaris_smartctl_exec_t;
    `)

    corecmd_search_bin($1)
    domtrans_pattern($1, polaris_smartctl_exec_t, polaris_smartctl_t)
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngiolite.if

No license file was found, but licenses were detected in source scan.

```
#
# February 2018, Manohar Hungund
#
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#
```

```
/dev/act2      -c gen_context(system_u:object_r:polaris_act2_device_t,s0)
/tmp/hw_entropy -- gen_context(system_u:object_r:polaris_hw_entropy_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisact2.fc

No license file was found, but licenses were detected in source scan.

```
#
# July 2017, Victor Kamensky
#
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#
```

```
policy_module(polariscmcc, 1.0);
```

```
gen_require(`
    type polaris_cm_cc_t;
`)
```

```
polaris_btrace_data_manage(polaris_cm_cc_t)
polaris_crft_data_manage(polaris_cm_cc_t)
polaris_chasfs_manage(polaris_cm_cc_t)
polaris_tdlresolve_read(polaris_cm_cc_t)
polaris_tdlldb_list_dirs(polaris_cm_cc_t)
```

```

polaris_cpld_read(polaris_cm_cc_t)
polaris_lua_read(polaris_cm_cc_t)
polaris_flashlib_read(polaris_cm_cc_t)

polaris_cpld_dev_use(polaris_cm_cc_t)
polaris_proc_rmonbifo_read(polaris_cm_cc_t)

polaris_ripc_sman_ui_serv_connect(polaris_cm_cc_t)

optional_policy(`
    # access to /dev/iocp0
    polaris_spa_dev_use(polaris_cm_cc_t)
`)
optional_policy(`
    # access to /dev/htdb[0-9]*
    polaris_htdp_dev_use(polaris_cm_cc_t)
`)
# read /proc/cmdline
kernel_read_system_state(polaris_cm_cc_t)
# work with /dev/i2c devices
polaris_i2c_use(polaris_cm_cc_t)

polaris_obfl_data_read(polaris_cm_cc_t)
# cmcc module as part of init calls cmem_obfl_write_voltage_log(),
# which writes to obfl device.
polaris_obfl_data_manage(polaris_cm_cc_t)
# on vxe platform /obfl is symlink to /varied
#ifdef(^vxe_family',`
polaris_disk_varied_list(polaris_cm_cc_t)
`)

# on 1ng works with /dev/cpld-virtual-cc
polaris_cpp_dev_use(polaris_cm_cc_t)

polaris_i2c_use(polaris_cm_cc_t)
dev_rw_sysfs(polaris_cm_cc_t)

#ifdef(^crankshaft_family',`
# read,getattr, map access to /firmware/ files for Switzer-CC
polaris_firmware_read(polaris_cm_cc_t)
polaris_firmware_getattr(polaris_cm_cc_t)
polaris_firmware_map(polaris_cm_cc_t)
`)

# allow objstore access
polaris_disk_objstore_read(polaris_cm_cc_t)

# get interface address cmlib_if_config_addr at cman/lib/cmlib_msgs/src/cmlib_eobc.c

```

```

allow polaris_cm_cc_t self:udp_socket { create ioctl };

# on utah need to get model info
optional_policy(`
    polaris_dash_dev_use(polaris_cm_cc_t)
`)

#access to /dev/dash_fpga device on fugazi platform
ifdef(`fugazi_platform',`
    polaris_dash_dev_mcp_use(polaris_cm_cc_t)
`)

#access to /dev/nutella_fpga device on nutella platform
optional_policy(`
    polaris_nutella_fpga_dev_use(polaris_cm_cc_t)
`)

# handle /tmp/pci files on utah
type polaris_pci_tmp_t;
files_tmp_file(polaris_pci_tmp_t)
# /tmp/pci/bus, /tmp/pci/vendor, /tmp/pic/device created by systemd unit
gen_require(`
    type initrc_t;
    type unconfined_service_t;
    type tmp_t;
`)
files_tmp_filetrans({ unconfined_service_t initrc_t }, polaris_pci_tmp_t, dir, "pci")
manage_dirs_pattern(initrc_t, tmp_t, polaris_pci_tmp_t)
manage_files_pattern(initrc_t, polaris_pci_tmp_t, polaris_pci_tmp_t)
manage_files_pattern(polaris_cm_cc_t, polaris_pci_tmp_t, polaris_pci_tmp_t)

logging_send_syslog_msg(polaris_cm_cc_t)

# cmcc module creates the PCI rescan shm mutex.
# /dev/shm/rescan_shm file.
type polaris_cm_cc_tmpfs_t;
files_tmpfs_file(polaris_cm_cc_tmpfs_t)
fs_tmpfs_filetrans(polaris_cm_cc_t, polaris_cm_cc_tmpfs_t, file)
manage_files_pattern(polaris_cm_cc_t, tmpfs_t, polaris_cm_cc_tmpfs_t)
mmap_files_pattern(polaris_cm_cc_t, tmpfs_t, polaris_cm_cc_tmpfs_t)
dev_read_sysfs(polaris_cm_cc_t)
dev_getattr_sysfs_fs(polaris_cm_cc_t)
fs_getattr_tmpfs(polaris_cm_cc_t)

# /tmp/udev-cc should it not be polaris_udev_tmp_t
type polaris_cm_cc_tmp_t;
files_tmp_file(polaris_cm_cc_tmp_t)
files_tmp_filetrans(polaris_cm_cc_t, polaris_cm_cc_tmp_t, dir, "udev-cc")

```

```

manage_files_pattern(polaris_cm_cc_t, polaris_cm_cc_tmp_t, polaris_cm_cc_tmp_t)
gen_require(
    type tmp_t;
)
manage_dirs_pattern(polaris_cm_cc_t, { tmp_t polaris_cm_cc_tmp_t }, polaris_cm_cc_tmp_t)

# on tsn need access to /dev/moka_fpga
optional_policy(
polaris_mokafpga_dev_use(polaris_cm_cc_t)
)

optional_policy(
# betelgeuse need access to /dev/sirius_fpga
polaris_sirius_fpga_dev_use(polaris_cm_cc_t)
)

# on macallan need access to /dev/quack
optional_policy(
polaris_quack_dev_use(polaris_cm_cc_t)
)

polaris_cpld_write(polaris_cm_cc_t)

optional_policy(
# on starfleet access gettysburg_fpga
polaris_gettysburg_fpga_dev_use(polaris_cm_cc_t)
)

# /dev/epactrlN on qwlc
optional_policy(
polaris_epa_dev_use(polaris_cm_cc_t)
)

# /dev/luna_fpga on qwlc
optional_policy(
polaris_luna_mbfpga_dev_use(polaris_cm_cc_t)
)

# /dev/astro on qwlc
optional_policy(
polaris_astro_dev_use(polaris_cm_cc_t)
)

# /dev/huron_fpga on Sumatra
optional_policy(
polaris_huron_dev_use(polaris_cm_cc_t)
)

```

```

type polaris_nim_xxd_tmp_t;
files_tmp_file(polaris_nim_xxd_tmp_t)
files_tmp_filetrans(polaris_cm_cc_t, polaris_nim_xxd_tmp_t, file, "nim_xxd_present")
manage_files_pattern(polaris_cm_cc_t, polaris_nim_xxd_tmp_t, polaris_nim_xxd_tmp_t)
ifdef(`starfleet_platform',`
    # In cman_cc
    # cmcc_starfleet_act2_authentication_udi in cman/cc/src/cmcc_starfleet.c
    #   cmcc_starfleet_cpupboard_act2_authentication_udi cman/cc/src/cmcc_starfleet.c
    #     tam_lib_device_open infra/act2/tam_act2/tam_lib/src/tam_lib_device.c:
    polaris_act2_dev_use(polaris_cm_cc_t)
)

ifdef(`crankshaft_family',`
    # modprobe sm_nim_adpt.ko for Switzer-CC
    modutils_domtrans_insmod(polaris_cm_cc_t)
    # /dev/sm_nim_adpt device files for Switzer-CC
    polaris_sm_nim_adpt_dev_use(polaris_cm_cc_t)
)

# Mapping permission for /dev/shm/<name>
ifdef(`crankshaft_family',`
    gen_require(`
        type systemd_tmpfiles_t;
    ')
    mmap_files_pattern(systemd_tmpfiles_t, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
)

# on ngwc cmcc needs to access /dev/chdrvmmmap for asic memory mapping
optional_policy(`
    polaris_chdrvmmmap_dev_use(polaris_cm_cc_t)
)

ifdef(`vxe_family',`
    # bind to BMC_AGENT_CLIENT_PORT port from cman_tlv_init
    corenet_tcp_bind_polaris_bmc_agent_client_port(polaris_cm_cc_t)
)

# allow /usr/binos/bin/cmcc to access /tmp/hd_sz
gen_require(`
    type udev_tmp_t;
)
read_files_pattern(polaris_cm_cc_t, udev_tmp_t, udev_tmp_t)

# allow /usr/sbin/smartctl to be operated on fsadm_exec_t
fstools_exec(polaris_cm_cc_t)

# using existing interface "polaris_cm_rp_tmp_manage" for polaris_cm_cc_t

```

```
# to acces /tmp/cmlib_eeprom_sim_smartctl.out
polaris_cm_rp_tmp_manage(polaris_cm_cc_t)
files_tmp_filetrans(polaris_cm_cc_t, polaris_cm_rp_tmp_t, file, "cmlib_eeprom_sim_smartctl.out")
```

```
# allow access to /dev/nvme*
dev_nvme_chr_files_manage(polaris_cm_cc_t)
dev_nvme_blk_files_manage(polaris_cm_cc_t)
```

```
# access to /dev/ttyS0
term_use_unallocated_ttys(polaris_cm_cc_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismcc.te
No license file was found, but licenses were detected in source scan.
```

```
#
# June 2017, Victor Kamensky
#
# Copyright (c) 2017-2019 by Cisco Systems, Inc.
# All rights reserved
#
```

```
## <summary>Polaris tservice Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristervice.if
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
# Copyright (c) 2016-2019 by Cisco Systems, Inc.
# All rights reserved
#
```

```
## <summary>Polaris polarissortfiles Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissortfiles.if
No license file was found, but licenses were detected in source scan.
```

```
#
# March 2017, Victor Kamensky
#
# Copyright (c) 2016-2021 by Cisco Systems, Inc.
# All rights reserved
#
```

```
## <summary>Polaris Storage Policy Rules.</summary>
```

```
#####  
# Persistent storage policy  
#####
```

```
#####  
## <summary>  
## Make the specified type usable as default type for files  
## in a Polaris persistent (bootflash, harddisk, etc) filesystem.  
## </summary>  
## <param name="type">  
## <summary>  
## Type to be used for files.  
## </summary>  
## </param>  
#  
interface(`polaris_disk_type`,  
  files_type($1)  
  gen_require(  
    attribute polaris_disk;  
  )  
  typeattribute $1 polaris_disk;  
)
```

```
#####  
## <summary>  
## Make the specified type usable for files  
## in a Polaris persistent (bootflash, harddisk, etc)  
## filesystem.  
## </summary>  
## <param name="type">  
## <summary>  
## Type to be used for files.  
## </summary>  
## </param>  
#  
interface(`polaris_pfile_type`,  
  files_type($1)  
  gen_require(  
    attribute polaris_disk;  
  )  
  typeattribute $1 polaris_disk;  
)
```

```
#####  
## <summary>  
## Read any regular file/directory from persistent storage.
```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_persistent_read`,`
  gen_require(`
    attribute polaris_disk;
  `)
  read_files_pattern($1, polaris_disk, polaris_disk)
  read_lnk_files_pattern($1, polaris_disk, polaris_disk)
  list_dirs_pattern($1, polaris_disk, polaris_disk)
`)

#####
## <summary>
## Getattr of any regular file/directory from persistent storage.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_persistent_getattr`,`
  gen_require(`
    attribute polaris_disk;
  `)
  list_dirs_pattern($1, polaris_disk, polaris_disk)
  getattr_files_pattern($1, polaris_disk, polaris_disk)
  getattr_lnk_files_pattern($1, polaris_disk, polaris_disk)
`)

#####
## <summary>
## Listdir of any regular directory from persistent storage.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_persistent_list_dirs`,`
  gen_require(`
    attribute polaris_disk;
  `)

```

```
)  
list_dirs_pattern($1, polaris_disk, polaris_disk)  
)
```

```
#####  
## <summary>  
## Write/read any regular file/directory from persistent storage.  
## </summary>  
## <param name="domain">  
## <summary>  
## Domain allowed access.  
## </summary>  
## </param>  
#
```

```
interface(`polaris_persistent_manage`,`  
    gen_require(`  
        attribute polaris_disk;  
    `)  
    manage_files_pattern($1, polaris_disk, polaris_disk)  
    manage_dirs_pattern($1, polaris_disk, polaris_disk)  
    manage_lnk_files_pattern($1, polaris_disk, polaris_disk)  
)
```

```
#####  
## <summary>  
## Map any regular file/directory from persistent storage.  
## </summary>  
## <param name="domain">  
## <summary>  
## Domain allowed access.  
## </summary>  
## </param>  
#
```

```
interface(`polaris_persistent_map`,`  
    gen_require(`  
        attribute polaris_disk;  
    `)  
    allow $1 polaris_disk:file map;  
)
```

```
#####  
# debug.conf  
#####
```

```
#####  
## <summary>  
## Read debug.conf from persistent storage.
```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_read_debug_conf`,`
    gen_require(`
        type polaris_debug_conf_t;
        type polaris_disk_bootflash_t;
        type polaris_disk_harddisk_t;
        type tmp_t;
    `)
    read_files_pattern($1, polaris_disk_bootflash_t, polaris_debug_conf_t)
    read_files_pattern($1, polaris_disk_harddisk_t, polaris_debug_conf_t)
    read_files_pattern($1, tmp_t, polaris_debug_conf_t)
    read_inh_files_pattern($1, tmp_t, polaris_debug_conf_t)
    polaris_disk_bootflash_read_inh($1)
)

#####
# packages.conf
#####

#####
## <summary>
## Read packages.conf from persistent storage.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_read_packages_conf`,`
    gen_require(`
        type polaris_packages_conf_t;
        type polaris_disk_bootflash_t;
        type polaris_disk_harddisk_t;
    `)
    read_files_pattern($1, polaris_disk_bootflash_t, polaris_packages_conf_t)
    read_files_pattern($1, polaris_disk_harddisk_t, polaris_packages_conf_t)
)

#####
## <summary>
## Manage packages.conf in persistent storage.

```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_manage_packages_conf`,`
    gen_require(`
        type polaris_packages_conf_t;
        type polaris_disk_bootflash_t;
        type polaris_disk_harddisk_t;
    `)
    manage_files_pattern($1, polaris_disk_bootflash_t, polaris_packages_conf_t)
    manage_files_pattern($1, polaris_disk_harddisk_t, polaris_packages_conf_t)
`)

```

```
#####
```

```

## <summary>
##   Write/read any regular file/directory from /varied
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_disk_varied_manage`,`
    gen_require(`
        type polaris_disk_varied_t;
    `)
    manage_files_pattern($1, polaris_disk_varied_t, polaris_disk_varied_t)
`)

```

```
#####
```

```

## <summary>
##   read any regular file/directory from /varied
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_disk_varied_read`,`
    gen_require(`
        type polaris_disk_varied_t;
    `)

```

```

    read_files_pattern($1, polaris_disk_varied_t, polaris_disk_varied_t)
    list_dirs_pattern($1, polaris_disk_varied_t, polaris_disk_varied_t)
)

#####
#####
## <summary>
##   Search /varied directory
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_disk_varied_search`,`
    gen_require(`
        type polaris_disk_varied_t;
    `)
    search_dirs_pattern($1, polaris_disk_varied_t, polaris_disk_varied_t)
)

#####
#####
## <summary>
##   List/read /varied directory
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_disk_varied_list`,`
    gen_require(`
        type polaris_disk_varied_t;
    `)
    list_dirs_pattern($1, polaris_disk_varied_t, polaris_disk_varied_t)
)

#####
## <summary>
## Write/read/remove polaris_core_file_t file/directory from
## persistent storage.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.

```

```

## </summary>
## </param>
#
interface(`polaris_core_file_manage',`
    gen_require(`
        type polaris_core_file_t;
    ')
    allow $1 polaris_core_file_t:dir rmdir;
    manage_files_pattern($1, polaris_core_file_t, polaris_core_file_t)

    allow $1 polaris_core_file_t:dir watch;
')

#####
## <summary>
## Search polaris_core_file_t dir
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_core_file_search',`
    gen_require(`
        type polaris_core_file_t;
    ')
    search_dirs_pattern($1, polaris_core_file_t, polaris_core_file_t)
')

#####
## <summary>
## Read/Open/Search polaris_core_file_t dir
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_core_file_read',`
    gen_require(`
        type polaris_core_file_t;
    ')
    allow $1 polaris_core_file_t:dir read;
    getattr_files_pattern($1, polaris_core_file_t, polaris_core_file_t)
')

```

```
#####
## <summary>
## Get attrib of bootflash fifo file.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_disk_bootflash_fifo_file_getattr`,`
  gen_require(`
    type polaris_disk_bootflash_t;
  `)
  getattr_fifo_files_pattern($1, polaris_disk_bootflash_t,
    polaris_disk_bootflash_t)
`)
```

```
#####
## <summary>
## Get attrib of bootflash sock file.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_disk_bootflash_sock_file_getattr`,`
  gen_require(`
    type polaris_disk_bootflash_t;
  `)
  getattr_sock_files_pattern($1, polaris_disk_bootflash_t,
    polaris_disk_bootflash_t)
`)
```

```
#####
## <summary>
## Read links of polaris_disk_bootflash_t
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_disk_bootflash_read_lnk`,`
  gen_require(`
```

```

        type polaris_disk_bootflash_t;
    ')
    read_lnk_files_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
)

```

```
#####
```

```

## <summary>
## Search polaris_disk_bootflash_t dir
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_disk_bootflash_search`,`
    gen_require(`
        type polaris_disk_bootflash_t;
    ')
    search_dirs_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
)

```

```
#####
```

```

## <summary>
## Write/read any regular file/directory under /csl_p_0/, /csl_p_1,
## /csl_s_0, and /csl_s_1
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_disk_csl_manage`,`
    gen_require(`
        type polaris_disk_csl_p_t;
        type polaris_disk_csl_s_t;
    ')
    manage_files_pattern($1, polaris_disk_csl_p_t, polaris_disk_csl_p_t)
    manage_files_pattern($1, polaris_disk_csl_s_t, polaris_disk_csl_s_t)
    read_lnk_files_pattern($1, polaris_disk_csl_p_t, polaris_disk_csl_p_t)
    read_lnk_files_pattern($1, polaris_disk_csl_s_t, polaris_disk_csl_s_t)
)

```

```
#####
```

```

## <summary>
## Write/read any regular file/directory under /csl_p_0/, /csl_p_1,

```

```

## /csl_s_0, and /csl_s_1
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_disk_csl_read`,`
    gen_require(`
        type polaris_disk_csl_p_t;
        type polaris_disk_csl_s_t;
    `)
    read_files_pattern($1, polaris_disk_csl_p_t, polaris_disk_csl_p_t)
    read_files_pattern($1, polaris_disk_csl_s_t, polaris_disk_csl_s_t)
    read_lnk_files_pattern($1, polaris_disk_csl_p_t, polaris_disk_csl_p_t)
    read_lnk_files_pattern($1, polaris_disk_csl_s_t, polaris_disk_csl_s_t)
)

#####
## <summary>
## Write/read any regular file/directory under /objstore,
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_disk_objstore_manage`,`
    gen_require(`
        type polaris_disk_objstore_t;
    `)
    manage_files_pattern($1, polaris_disk_objstore_t, polaris_disk_objstore_t)
    read_lnk_files_pattern($1, polaris_disk_objstore_t, polaris_disk_objstore_t)
)

interface(`polaris_disk_objstore_read`,`
    gen_require(`
        type polaris_disk_objstore_t;
    `)
    read_files_pattern($1, polaris_disk_objstore_t, polaris_disk_objstore_t)
    list_dirs_pattern($1, polaris_disk_objstore_t, polaris_disk_objstore_t)
)

#####
## <summary>
## Read links of polaris_disk_harddisk_t

```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_disk_harddisk_read_lnk`,`
    gen_require(`
        type polaris_disk_harddisk_t;
    `)
    read_lnk_files_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
`)

```

```
#####
```

```

## <summary>
##   Read harddisk files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_harddisk_read`,`
    gen_require(`
        type polaris_disk_harddisk_t;
    `)
    read_files_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
    list_dirs_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
`)

```

```
#####
```

```

## <summary>
##   Read bootflash files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_bootflash_read`,`
    gen_require(`
        type polaris_disk_bootflash_t;
    `)
    read_files_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
`)

```

```

    read_lnk_files_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
    list_dirs_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
)

#####
## <summary>
##   Manage bootflash files
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_bootflash_manage`,
  gen_require(`
    type polaris_disk_bootflash_t;
  `)
  manage_files_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
  manage_lnk_files_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
  manage_dirs_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
)

#####
## <summary>
## Create an object in the polaris_disk_bootflash_t directories,
## with a private type using a type transition.
## </summary>
## <param name="domain">
## <summary>
##   Domain allowed access.
## </summary>
## </param>
## <param name="private type">
## <summary>
##   The type of the object to be created.
## </summary>
## </param>
## <param name="object">
## <summary>
##   The object class of the object being created.
## </summary>
## </param>
## <param name="name" optional="true">
## <summary>
##   The name of the object being created.
## </summary>
## </param>

```

```

#
interface(`polaris_bootflash_filetrans`,`
gen_require(`
type polaris_disk_bootflash_t;
`)

filetrans_pattern($1, polaris_disk_bootflash_t, $2, $3, $4)
`)

#####
## <summary>
## Manage bootflash files
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_harddisk_manage`,`
gen_require(`
type polaris_disk_harddisk_t;
`)
manage_files_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
manage_lnk_files_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
manage_dirs_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
`)

#####
## <summary>
## Create an object in the polaris_disk_harddisk_t directories,
## with a private type using a type transition.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <param name="private type">
## <summary>
## The type of the object to be created.
## </summary>
## </param>
## <param name="object">
## <summary>
## The object class of the object being created.
## </summary>

```

```

## </param>
## <param name="name" optional="true">
## <summary>
## The name of the object being created.
## </summary>
## </param>
#
interface(`polaris_harddisk_filetrans`,`
gen_require(`
type polaris_disk_harddisk_t;
`)

filetrans_pattern($1, polaris_disk_harddisk_t, $2, $3, $4)
`)

#####
## <summary>
## Getattr of polaris_disk_crashinfo_t (typically /crashinfo
## symbolic link and real disk it points to)
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_disk_crashinfo_getattr`,`
gen_require(`
type polaris_disk_crashinfo_t;
`)
read_lnk_files_pattern($1, polaris_disk_crashinfo_t, polaris_disk_crashinfo_t)
getattr_lnk_files_pattern($1, polaris_disk_crashinfo_t, polaris_disk_crashinfo_t)
getattr_files_pattern($1, polaris_disk_crashinfo_t, polaris_disk_crashinfo_t)
getattr_dirs_pattern($1, polaris_disk_crashinfo_t, polaris_disk_crashinfo_t)
`)

#####
## <summary>
## Manage polaris_disk_crashinfo_t (typically /crashinfo
## symbolic link and real disk it points to)
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#

```

```

interface(`polaris_disk_crashinfo_manage',`
    gen_require(`
        type polaris_disk_crashinfo_t;
    `)
    manage_files_pattern($1, polaris_disk_crashinfo_t, polaris_disk_crashinfo_t)
    manage_lnk_files_pattern($1, polaris_disk_crashinfo_t, polaris_disk_crashinfo_t)
    manage_dirs_pattern($1, polaris_disk_crashinfo_t, polaris_disk_crashinfo_t)
)

```

```
#####
```

```

## <summary>
## Read links of polaris_disk_crashinfo_t
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_disk_crashinfo_read_lnk',`
    gen_require(`
        type polaris_disk_crashinfo_t;
    `)
    read_lnk_files_pattern($1, polaris_disk_crashinfo_t, polaris_disk_crashinfo_t)
)

```

```
#####
```

```

## <summary>
## Write/read polaris_disk_license_t files/directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#

```

```

interface(`polaris_disk_license_manage',`
    gen_require(`
        type polaris_disk_license_t;
    `)
    manage_files_pattern($1, polaris_disk_license_t, polaris_disk_license_t)
    manage_lnk_files_pattern($1, polaris_disk_license_t, polaris_disk_license_t)
    allow $1 polaris_disk_license_t:file map;
)

```

```
#####
```

```

## <summary>
## Fead polaris_disk_license_t files/directories

```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_disk_license_read`,`
  gen_require(`
    type polaris_disk_license_t;
  `)
  read_files_pattern($1, polaris_disk_license_t, polaris_disk_license_t)
  read_lnk_files_pattern($1, polaris_disk_license_t, polaris_disk_license_t)
`)

```

```
#####
```

```

## <summary>
##   Get the attributes of an removable
##   filesystem.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_getattr_removable`,`
  gen_require(`
    type removable_t;
  `)

```

```

  allow $1 removable_t:filesystem getattr;
  allow $1 removable_t:dir    getattr;
`)

```

```
#####
```

```

## <summary>
##   Create, read, write, and delete all removable files.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_removable_manage`,`
  gen_require(`
    type removable_t;

```

```

)

manage_files_pattern($1, removable_t, removable_t)
manage_dirs_pattern($1, removable_t, removable_t)
)

#####
## <summary>
##   read all removable files.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_removable_read`,`
  gen_require(`
    type removable_t;
  `)
  read_files_pattern($1, removable_t, removable_t)
  list_dirs_pattern($1, removable_t, removable_t)
  read_lnk_files_pattern($1, removable_t, removable_t)
)

#####
## <summary>
##   Get the attributes of silent roll partition
##   filesystem.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_getattr_filesystem_disk_ucose`,`
  gen_require(`
    type polaris_disk_ucose_t;
  `)

  allow $1 polaris_disk_ucose_t:filesystem getattr;
)

#####
## <summary>
##   Get the attributes of an bootflash
##   filesystem.

```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_getattr_bootflash`,`
gen_require(`
type polaris_disk_bootflash_t;
`)

allow $1 polaris_disk_bootflash_t:filesystem getattr;
`)

#####
## <summary>
##   Get the attributes of an harddisk
##   filesystem.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_getattr_harddisk`,`
gen_require(`
type polaris_disk_harddisk_t;
`)

allow $1 polaris_disk_harddisk_t:filesystem getattr;
`)

#####
## <summary>
##   Get the attributes of an harddisk
##   file.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_getattr_file_harddisk`,`
gen_require(`
type polaris_disk_harddisk_t;

```

```
)
getattr_files_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
')
```

```
#####
```

```
## <summary>
##   Watch persistent file or directories
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolebase/>
#
interface(`polaris_persistent_watch',`
gen_require(`
  attribute polaris_disk;
)
  allow $1 polaris_disk: { dir file } watch;
)
)
```

```
#####
```

```
## <summary>
##   Create an object in the polaris_disk_crashinfo_t directories,
##   with a private type using a type transition.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <param name="private type">
##   <summary>
##     The type of the object to be created.
##   </summary>
## </param>
## <param name="object">
##   <summary>
##     The object class of the object being created.
##   </summary>
## </param>
## <param name="name" optional="true">
##   <summary>
##     The name of the object being created.
##   </summary>
## </param>
#
```

```

interface(`polaris_crashinfo_filetrans`,`
  gen_require(`
    type polaris_disk_crashinfo_t;
  `)

  filetrans_pattern($1, polaris_disk_crashinfo_t, $2, $3, $4)
`)

#####
## <summary>
##   Get the attributes of an polaris_disk_config_t
##   file or directory.
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
#
interface(`polaris_getattr_disk_config`,`
  gen_require(`
    type polaris_disk_config_t;
  `)
  getattr_files_pattern($1, polaris_disk_config_t, polaris_disk_config_t)
  getattr_dirs_pattern($1, polaris_disk_config_t, polaris_disk_config_t)
`)

#####
## <summary>
## Create an object in the polaris_disk_config_t directories,
## with a private type using a type transition.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
## <param name="private type">
## <summary>
## The type of the object to be created.
## </summary>
## </param>
## <param name="object">
## <summary>
## The object class of the object being created.
## </summary>
## </param>
## <param name="name" optional="true">

```

```

## <summary>
## The name of the object being created.
## </summary>
## </param>
#
interface(`polaris_disk_config_filetrans`,`
gen_require(`
type polaris_disk_config_t;
`)

filetrans_pattern($1, polaris_disk_config_t, $2, $3, $4)
`)

#####
## <summary>
## Manage bootflash files mmap
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_bootflash_files_mmap`,`
gen_require(`
type polaris_disk_bootflash_t;
`)
mmap_files_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisstorage.if

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```

#
# March 2020, Victor Kamensky
#
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# All rights reserved
#

```

```
policy_module(polarisjvm, 1.0);
```

```
gen_require(`
type polaris_jvm_t;
`)

```

```
# access /etc/passwd
```

```

auth_use_nsswitch(polaris_jvm_t)

# java through posix_sysconf accesses /sys/devices/system/cpu
# to get number of CPUs
dev_read_sysfs(polaris_jvm_t)

# checks whether IPV6 is configured accessing /proc/pid/net/if_inet6
kernel_read_network_state(polaris_jvm_t)

# handling ~/.oracle_jre_usage
type polaris_jvm_home_t;
files_type(polaris_jvm_home_t)
gen_require(
    type user_home_dir_t;
)
filetrans_pattern(polaris_jvm_t, user_home_dir_t, polaris_jvm_home_t, dir, ".oracle_jre_usage")
manage_dirs_pattern(polaris_jvm_t, user_home_dir_t, polaris_jvm_home_t)
manage_files_pattern(polaris_jvm_t, polaris_jvm_home_t, polaris_jvm_home_t)

# handling /tmp/hsperfdata_root
type polaris_jvm_tmp_t;
files_type(polaris_jvm_tmp_t)
gen_require(
    type tmp_t;
)
files_tmp_filetrans(polaris_jvm_t, polaris_jvm_tmp_t, dir, "hsperfdata_root")
manage_dirs_pattern(polaris_jvm_t, tmp_t, polaris_jvm_tmp_t)
manage_files_pattern(polaris_jvm_t, polaris_jvm_tmp_t, polaris_jvm_tmp_t)
mmap_files_pattern(polaris_jvm_t, polaris_jvm_tmp_t, polaris_jvm_tmp_t)

# listen on 9093 websocket tcp port
corenet_tcp_bind_polaris_poljvm_websocket_port(polaris_jvm_t)
corenet_tcp_bind_generic_node(polaris_jvm_t)
allow polaris_jvm_t self:tcp_socket create_stream_socket_perms;

# java uses jit and needs executable anonymous mapping
allow polaris_jvm_t self:process execmem;

# Allow JDK access to read cpu and memory utilization data on start up
gen_require(
    type proc_t;
)

allow polaris_jvm_t proc_t:file { getattr open read };
fs_read_cgroup_files(polaris_jvm_t)
fs_search_cgroup_dirs(polaris_jvm_t)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisjvm.te
```

```
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```

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2016-2019 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
## <summary>Polaris plogd Policy Rules.</summary>
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisplogd.if
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
# March 2017, Victor Kamensky
```

```
#
```

```
# Copyright (c) 2016-2020 by Cisco Systems, Inc.
```

```
# All rights reserved
```

```
#
```

```
## <summary>Polaris hm Policy Rules.</summary>
```

```
#####
```

```
## <summary>
```

```
## Write into fifo file created by hman, typical case when
```

```
## hman starts script under popen.
```

```
## </summary>
```

```
## <param name="domain">
```

```
## <summary>
```

```
## Domain allowed access.
```

```
## </summary>
```

```
## </param>
```

```
## <rolecap/>
```

```
#
```

```
interface(`polaris_hman_use_fifo`,`
```

```
gen_require(`
```

```
type polaris_hm_t;
```

```
`)
```

```
write_fifo_files_pattern($1, polaris_hm_t, polaris_hm_t)
```

```
`)
```

```
#####
```

```
## <summary>
```

```
## Read tmp files created by hman. I.e /tmp/myhostname.
```

```

## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolecap/>
#
interface(`polaris_hm_tmp_read`,`
  gen_require(`
    type polaris_hm_tmp_t;
  `)

  read_files_pattern($1, polaris_hm_tmp_t, polaris_hm_tmp_t)
`)

#####
## <summary>
##   Execute pkg_summary.sh in its own domain
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolecap/>
#
interface(`polaris_pkg_summary_domtrans`,`
  gen_require(`
    type polaris_pkg_summary_t;
    type polaris_pkg_summary_exec_t;
  `)

  corecmd_search_bin($1)
  domtrans_pattern($1, polaris_pkg_summary_exec_t, polaris_pkg_summary_t)
`)

#####
## <summary>
##   Execute pkg_to_tree.sh in its own domain
## </summary>
## <param name="domain">
##   <summary>
##     Domain allowed access.
##   </summary>
## </param>
## <rolecap/>
#

```

```

interface(`polaris_pkg_to_tree_domtrans`,`
  gen_require(`
    type polaris_pkg_to_tree_t;
    type polaris_pkg_to_tree_exec_t;
  `)

  corecmd_search_bin($1)
  domtrans_pattern($1, polaris_pkg_to_tree_exec_t, polaris_pkg_to_tree_t)
`)

#####
## <summary>
## Execute hman in the polaris_cli_fs_cmds domain.
## </summary>
## <param name="domain">
## <summary>
## Domain allowed to transition.
## </summary>
## </param>
#
interface(`polaris_cli_fs_cmds_domtrans`,`
  gen_require(`
    type polaris_cli_fs_cmds_t, polaris_cli_fs_cmds_exec_t;
  `)

  corecmd_search_bin($1)
  domtrans_pattern($1, polaris_cli_fs_cmds_exec_t, polaris_cli_fs_cmds_t)
`)

#####
## <summary>
## Read file /tmp/pkg_summary.txt file
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_pkg_summary_tmp_read`,`
  gen_require(`
    type polaris_pkg_summary_tmp_t;
  `)

  read_files_pattern($1, polaris_pkg_summary_tmp_t, polaris_pkg_summary_tmp_t)
`)

#####
## <summary>

```

```

## read the contents of /tmp/show_provision_temp
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_show_provision_temp_read`,`
    gen_require(`
        type polaris_show_provision_tmp_t;
    `)
    read_files_pattern($1, polaris_show_provision_tmp_t, polaris_show_provision_tmp_t)
`)

#####
## <summary>
## manage the contents of /tmp/show_provision_temp
## </summary>
## <param name="domain">
## <summary>
## Domain allowed access.
## </summary>
## </param>
#
interface(`polaris_show_provision_temp_manage`,`
    gen_require(`
        type polaris_show_provision_tmp_t;
    `)
    manage_files_pattern($1, polaris_show_provision_tmp_t, polaris_show_provision_tmp_t)
    manage_lnk_files_pattern($1, polaris_show_provision_tmp_t, polaris_show_provision_tmp_t)
    manage_dirs_pattern($1, polaris_show_provision_tmp_t, polaris_show_provision_tmp_t)
    files_tmp_filetrans($1, polaris_show_provision_tmp_t, { file dir })
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarishm.if

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```

#
# October 2019, Patrick O'Halloran
#
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#

```

```

policy_module(polariscrft, 1.0);

```

```

#####
# CRFT policy
#####
gen_require(
    attribute domain;
    attribute polaris_extended_domain;
)

# persistent CRFT files stored under crft_data
type polaris_crft_data_t;
files_type(polaris_crft_data_t)

# allow crft data file reside on persistent storage
polaris_pfile_type(polaris_crft_data_t)

attribute polaris_crft_data_domain;

typeattribute polaris_crft_data_t polaris_crft_data_domain;

# Start of mcp_crft_request context elements
polaris_utility_domain_template(crft_request)

# smand calls the mcp_crft_request.sh in bexec context
polaris_bexecute_domtrans(polaris_crft_request_t)
polaris_bexecute_domain(polaris_crft_request_t, polaris_crft_request_exec_t)

# read the cpld information
polaris_cpld_read(polaris_crft_request_t)

# dev/pty access as part of bexec operations
telnet_use_ptys(polaris_crft_request_t)

# filesystem attributes for df /
fs_getattr_xattr_fs(polaris_crft_request_t)

# btrace used in script uses these
polaris_btrace_tmppub_manage(polaris_crft_request_t)
polaris_use_btrace_fifo(polaris_crft_request_t)

# read /proc/rmonbifo files such as env_var.sh
polaris_rmonbifo_tmp_read(polaris_crft_request_t)

# read /tmp/sw/boot/base_pkg
polaris_boot_tmp_manage(polaris_crft_request_t)

# ufs information captured by the chasfs utils
ifdef(`ngwc_family',`

```

```

optional_policy(
polaris_ncd_tmp_manage(polaris_crft_request_t)
)
)
# scripts read /proc/cmdline
kernel_read_system_state(polaris_crft_request_t)

# ping the vrf
netutils_domtrans_ping(polaris_crft_request_t)
sysnet_domtrans_ifconfig(polaris_crft_request_t)

# rsync operations for members and standby rps
gen_require(
    type rsync_exec_t;
    type rsync_port_t;
)
allow polaris_crft_request_t rsync_exec_t:file { execute execute_no_trans getattr map open read };
allow polaris_crft_request_t rsync_port_t:tcp_socket name_connect;

# access to /etc/hosts for rp/members information
gen_require(
    type net_conf_t;
)
files_etc_filetrans(polaris_crft_request_t, net_conf_t, file, "hosts")
auth_use_nsswitch(polaris_crft_request_t)

# execute the bash script
corecmd_exec_bin(polaris_crft_request_t)

# net namespace filesystem
fs_read_nsfs_files(polaris_crft_request_t)
polaris_chasfs_manage(polaris_crft_request_t)

# script also accesses the persistent files from crft
polaris_persistent_manage(polaris_crft_request_t)
polaris_crft_data_manage_all(polaris_crft_request_t)

# ping operations via ip netns
gen_require(
    type ifconfig_t;
)
netutils_domtrans_ping(ifconfig_t)

# Curl accesses from IoT boxes like petra/sparrow
gen_require(
    type polaris_curl_t;
    type polaris_iosd_t;
)

```

```
allow polaris_curl_t polaris_crft_request_t:process sigchld;
```

```
# handle mktemp creation and cleanup
files_manage_generic_tmp_dirs(polaris_crft_request_t)
allow polaris_crft_request_t self:capability sys_resource;
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscrft.te
```

```
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```

```
#
# March 2017, Victor Kamensky
#
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#
```

```
policy_module(polarispsvp, 1.0);
```

```
polaris_process_domain_template(psvp)
```

```
# transition to pman domain, once pman is invoked by psvp
```

```
polaris_pman_domtrans(polaris_psvp_t)
```

```
# transition to pvp domain, once pvp is invoked by psvp
```

```
polaris_pvp_domtrans(polaris_psvp_t)
```

```
corecmd_exec_bin(polaris_psvp_t)
```

```
corecmd_exec_shell(polaris_psvp_t)
```

```
# can execute process in polaris domain
```

```
polaris_exec(polaris_psvp_t)
```

```
# LOOK AT ME start-stop-daemon from busy box iterates all
```

```
# /proc/<pid> directories and reads /proc/<pid>/cmdline
```

```
# /proc/<pid>/exe. I.e it need quite a bit of priviledges
```

```
domain_read_all_domains_state(polaris_psvp_t)
```

```
# another issue of running busybox start-stop-daemon under
```

```
# psvp_t label
```

```
# type=AVC msg=audit(1480527500.482:46): avc: denied { sys_ptrace } for pid=14853 comm="start-stop-daem"
```

```
capability=19 scontext=system_u:system_r:polaris_psvp_t:s0 tcontext=system_u:system_r:polaris_psvp_t:s0
```

```
tclass=capability
```

```
allow polaris_psvp_t self:capability sys_ptrace;
```

```
# allow to read /proc/meminfo
```

```
kernel_read_system_state(polaris_psvp_t)
```

```
# allow read of /etc/passwd
```

```

auth_use_nsswitch(polaris_psvp_t)

# run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_psvp_t)

# work with /tmp files
type polaris_psvp_tmp_t;
files_tmp_file(polaris_psvp_tmp_t)
manage_dirs_pattern(polaris_psvp_t, tmp_t, polaris_psvp_tmp_t)
manage_files_pattern(polaris_psvp_t, polaris_psvp_tmp_t, polaris_psvp_tmp_t)
manage_fifo_files_pattern(polaris_psvp_t, polaris_psvp_tmp_t, polaris_psvp_tmp_t)
files_tmp_filetrans(polaris_psvp_t, polaris_psvp_tmp_t, { file dir })
filetrans_pattern(domain, tmp_t, polaris_psvp_tmp_t, dir, "psvp")

#ifdef(`ngwc_family',`
# also need to be able to ls /tmp/ufs/ on ngwc
optional_policy(`
polaris_ncd_tmp_read(polaris_psvp_t)
')
')

# note split entry another psvp capability listed above
allow polaris_psvp_t self:capability sys_resource;

polaris_pvp_getattrs_tmp_dirs(polaris_psvp_t)

dmidecode_domtrans(polaris_psvp_t)

polaris_btrace_data_manage(polaris_psvp_t)
polaris_chasfs_manage(polaris_psvp_t)
polaris_cpld_read(polaris_psvp_t)
polaris_cpld_write(polaris_psvp_t)
polaris_rmonbifo_tmp_read(polaris_psvp_t)
polaris_tdldb_list_dirs(polaris_psvp_t)
polaris_boot_tmp_read(polaris_psvp_t)
polaris_disk_crashinfo_getattr(polaris_psvp_t)
polaris_flashlib_read(polaris_psvp_t)
polaris_read_debug_conf(polaris_psvp_t)

allow polaris_psvp_t self:capability dac_override;

# watch /tmp/sai/psvp
allow polaris_psvp_t polaris_psvp_tmp_t:dir watch;

# creates /tmp/sai/pvp/rp/run_stg2
polaris_pvp_manage_tmp_files(polaris_psvp_t)

# Allow /tmp/ufs/bootflash & /tmp/ufs/harddisk read access

```

```

ifdef(`vwlc_platform',`
optional_policy(`
polaris_ncd_tmp_read(polaris_psvp_t)
`)
`)

# permissions during shutdown
polaris_pvp_manage_tmp_files(polaris_psvp_t);

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispsvp.te
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#
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#

policy_module(polaristamdrp, 1.0);

gen_require(`
    type polaris_tamd_rp_t;
`)

polaris_btrace_data_manage(polaris_tamd_rp_t)
polaris_crft_data_manage(polaris_tamd_rp_t)
polaris_chasfs_manage(polaris_tamd_rp_t)
polaris_tdlresolve_read(polaris_tamd_rp_t)
polaris_tdlldb_list_dirs(polaris_tamd_rp_t)
polaris_flashlib_read(polaris_tamd_rp_t)
logging_send_syslog_msg(polaris_tamd_rp_t)

# allow read of /etc/passwd
auth_use_nsswitch(polaris_tamd_rp_t)

polaris_cpld_read(polaris_tamd_rp_t)
polaris_cpld_write(polaris_tamd_rp_t)

polaris_quack_dev_use(polaris_tamd_rp_t)

# tmp file for udi authentication
type polaris_tamd_rp_tmp_t;
files_tmp_file(polaris_tamd_rp_tmp_t);
files_tmp_filetrans(polaris_tamd_rp_t, polaris_tamd_rp_tmp_t, file, "tam_uid_validation")
manage_files_pattern(polaris_tamd_rp_t, polaris_tamd_rp_tmp_t, polaris_tamd_rp_tmp_t)
polaris_cm_rp_tmp_manage(polaris_tamd_rp_t)

```

```

# hybrid tam needs access to /objstore/.swtam
gen_require(
    type polaris_disk_objstore_t;
    type root_t;
)
filetrans_pattern(polaris_tamd_rp_t, root_t, polaris_disk_objstore_t, dir, "objstore")
manage_dirs_pattern(polaris_tamd_rp_t, polaris_disk_objstore_t, polaris_disk_objstore_t)
polaris_disk_objstore_manage(polaris_tamd_rp_t)

# need access to dash fpga to read/write TAM
optional_policy(
    polaris_dash_dev_use(polaris_tamd_rp_t)
)

#access to /dev/dash_fpga device on fugazi platform
ifdef(^fugazi_platform',`
    polaris_dash_dev_mcp_use(polaris_tamd_rp_t)
)

allow polaris_tamd_rp_t self:capability net_admin;

# LOOK AT ME tamd_rp needs shell access to do something like this
# sh -c "echo 0x04 > /sys/devices/platform/cpld/reg_rp_reset_control"
# need to rework into simple open,write,close
corecmd_exec_shell(polaris_tamd_rp_t)

# LOOK AT ME access should be restricted after /flash/dummy_check is removed,
# which is tracked under CSCvh68866. Allow access to bootflash till then.
polaris_bootflash_read(polaris_tamd_rp_t)

optional_policy(
# Allow /dev/dmabmap access
polaris_dmabmap_dev_use(polaris_tamd_rp_t)
)

# LOOK AT ME: /dev/mem access restriction
polaris_dev_mem_use(polaris_tamd_rp_t)

optional_policy(
polaris_ngwc_shm_manage(polaris_tamd_rp_t)
)

optional_policy(
polaris_remap_mem_dev_use(polaris_tamd_rp_t)
)

polaris_cpld_dev_use(polaris_tamd_rp_t)

```

```
optional_policy(`
# allow access to /sys/devices/virtual/misc/ggpio/gpio_out_assert
polaris_ggpio_dev_read_write(polaris_tamd_rp_t)
`)
```

```
optional_policy(`
    polaris_quake_i2c_manage(polaris_tamd_rp_t)
`)
```

```
# /dev/aikido access
polaris_aikido_dev_use(polaris_tamd_rp_t)
```

```
# tamlib debug file access
polaris_tamlib_dbg_file_manage(polaris_tamd_rp_t)
```

```
# tam gpio sysfs access
optional_policy(`
dev_rw_sysfs(polaris_tamd_rp_t)
`)
```

```
ifdef(`petra_platform',`
#allow access to /dev/i2c-0 for hash value
polaris_i2c_use(polaris_tamd_rp_t)
`)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristamdrp.te
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```

```
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#
```

```
/usr/binos/conf/sort_files_by_inode.sh -- gen_context(system_u:object_r:polaris_sort_files_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissortfiles.fc
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```

```
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```

```

#

policy_module(polariscedgestart, 1.0);

gen_require(
    type polaris_cedge_start_t;
)

polaris_chasfs_manage(polaris_cedge_start_t)
polaris_boot_tmp_read(polaris_cedge_start_t)
polaris_bootflash_manage(polaris_cedge_start_t)
polaris_cpld_read(polaris_cedge_start_t)
polaris_flashlib_read(polaris_cedge_start_t)
polaris_rmonbifo_tmp_read(polaris_cedge_start_t)
polaris_btrace_tmppub_read(polaris_cedge_start_t)

# needed by install_util.sh
polaris_read_packages_conf(polaris_cedge_start_t)

corecmd_exec_bin(polaris_cedge_start_t)
corecmd_exec_shell(polaris_cedge_start_t)
auth_use_nsswitch(polaris_cedge_start_t)

polaris_dmi_ports_fetch_domtrans(polaris_cedge_start_t)

# runs ps -C cfgmgr -o pid=
# ps needs access to proc_t
kernel_read_system_state(polaris_cedge_start_t)
# ps needs access to state of all domains
domain_read_all_domains_state(polaris_cedge_start_t)
# "ps" needs read access to /sys/devices/system/cpu/online
# "ps" needs read access to /proc/uptime
dev_read_sysfs(polaris_cedge_start_t)

# runs vip-confd-startup.sh needs transition into polaris_conf_d_t domain
polaris_conf_d_domtrans(polaris_cedge_start_t)

# runs systemctl start logrotate.service
systemd_exec_systemctl(polaris_cedge_start_t)

# manage /etc/viptela
polaris_cedge_etc_manage(polaris_cedge_start_t)

# runs install_assist.sh
polaris_install_engine_domtrans(polaris_cedge_start_t)

# write /bootflash/installer/images/pkg_boot_17.3.01/version
polaris_disk_install_manage(polaris_cedge_start_t)

```

```

gen_require(
    type polaris_disk_install_t;
)
# du -s /bootflash/.installer/images/pkg_boot_17.3.01/confd0/cdb
allow polaris_cedge_start_t polaris_disk_install_t:filesystem getattr;

# chown -R binos /bootflash/sdwan
fs_getattr_xattr_fs(polaris_cedge_start_t)

allow polaris_cedge_start_t self:capability { chown fowner net_admin };

# PLEASE LOOK AT ME cedge_start.sh modifies set of directories that
# are supposed to be read only, like usr_t, etc_t, root_t
files_rw_usr_dirs(polaris_cedge_start_t)
gen_require(
    type usr_t;
)
manage_lnk_files_pattern(polaris_cedge_start_t, usr_t, usr_t)
libs_manage_lib_dirs(polaris_cedge_start_t)
gen_require(
    type lib_t;
)
manage_lnk_files_pattern(polaris_cedge_start_t, lib_t, lib_t)
files_manage_etc_symlinks(polaris_cedge_start_t)
files_manage_var_symlinks(polaris_cedge_start_t)
# creates /home directory in root
gen_require(
    type root_t;
)
manage_dirs_pattern(polaris_cedge_start_t, root_t, root_t)
manage_lnk_files_pattern(polaris_cedge_start_t, root_t, root_t)
# creates /var/log/sdwan
gen_require(
    type var_log_t;
)
manage_dirs_pattern(polaris_cedge_start_t, var_log_t, var_log_t)
manage_lnk_files_pattern(polaris_cedge_start_t, var_log_t, var_log_t)
corecmd_manage_bin_files(polaris_cedge_start_t)

# PLEASE LOOK AT ME copy unit files into /lib/systemd/system
# cp /tmp/sw/rp/0/0/rp_daemons/mount/lib/systemd/system/logrotate.service /lib/systemd/system
gen_require(
    type systemd_unit_file_t;
)
read_lnk_files_pattern(polaris_cedge_start_t, systemd_unit_file_t, systemd_unit_file_t)

# PLEASE LOOK AT ME need to have separate label for logrotate.service
# allow only to start if, do it once copy of logrotate.service is fixed

```

```

systemd_config_generic_services(polaris_cedge_start_t)
init_start(polaris_cedge_start_t)

# creates /var/log/confd
polaris_confd_var_log_manage(polaris_cedge_start_t)

# executes touch /etc/resolv.conf for case when it is missing
# check create_etc_resolv_conf make sure that it becomes net_conf_t
gen_require(
    type net_conf_t;
)
files_etc_filetrans(polaris_cedge_start_t, net_conf_t, file, "resolv.conf")
sysnet_create_config(polaris_cedge_start_t)
sysnet_write_config(polaris_cedge_start_t)

# creates /var/confd0 when box boots with startup config disabled
polaris_confd_var_filetrans(polaris_cedge_start_t, dir, "confd0")

polaris_confd_var_dir_manage(polaris_cedge_start_t)

#####
# During controller-mode enablement/bringup,
# viptela scripts are not loaded as part of the base packages.
# viptela-start.sh script takes care of creating these references.
# It creates softlink copies them as below to desired location depending on the packaging (mono vs subpackage).
# "cp $PKG_PATH/lib/systemd/system/logrotate.service /lib/systemd/system"
# Below policy statement allow copy access needed for viptela-logrotate.sh
# for updating /lib/systemd/system and /usr/binos/conf path
write_files_pattern(polaris_cedge_start_t, systemd_unit_file_t, systemd_unit_file_t)

# While creating softlink as below
# "ln -sf $PKG_PATH/usr/binos/conf/viptela-logrotate.sh /usr/binos/conf/viptela-logrotate.sh"
# As the ln command tries to create the new link, it removes the already existing link.
# ln deletes the file associated with the path name if this path name is the last link to the file.
# If ln can't get rid of the conflicting path name, it does not attempt to establish the new link.
# If ln successfully removes the conflicting path name, it then establishes the link.
# delete file permissions are hence needed for ln command to perform unlinking previous link
files_delete_etc_files(polaris_cedge_start_t)
#####

# During cEdge upgrade, viptela-start.sh needs permissions to maintain the
# state of roll back timer in /bootflash/.rollback_timer/*
polaris_rbtimer_bootflash_manage(polaris_cedge_start_t)

#Nutella-XE - Vedge image install
#/bin/bash /tmp/sw/rp/0/0/rp_security/mount/usr/binos/conf/viptela-start.sh
mount_domtrans(polaris_cedge_start_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscgedgestart.te

# 1.37 acl 2.2.53-1.el8

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```
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```

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```

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```
WEV @@ WEV[B "1
```

```
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```

```
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```

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That's all there is to it!

# 1.41 tar 1.32

## 1.41.1 Available under license :

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Version 3, 29 June 2007

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## 1.42 libvirt 5.5.0

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work

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## 1.43 libmnl 1.0.4-6.el8

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```
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```

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# 1.51 safestring 4.1.25

## 1.51.1 Available under license :

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```
/*
```

```
SafeString to Number conversion
```

```
Examples of SafeString to Number conversions and comparing these to the results from String methods
```

```
by Matthew Ford
```

```
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```

```
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```

```
www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html
```

```
*/
```

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```
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/*
```

```
SafeString Case changes
```

```
Examples of how to change the case of a SafeString
```

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Modified from String Examples by Tom Igoe
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```

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```
/* SafeStringWithArrayOfCstrings.ino
```

```
Example of using SafeString for working with char[][xx]
```

```
by Matthew Ford
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```

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or from [www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html](http://www.forward.com.au/pfod/ArduinoProgramming/SafeString/index.html)

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fac1370/examples/SafeStringWithArraysOfCstrings/SafeStringWithArraysOfCstrings.ino

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SafeStringReader\_Assign.ino

This example = to SafeStringReader

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SafeString replace()

Examples of SafeString replace for chars and strings

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/\*

Blink

Turns an led on for one second, then off for one second, repeatedly.

Most Arduinos have an on-board led you can control. On the UNO, MEGA and ZERO it is attached to digital pin 13, on MKR1000 on pin 6. led is set to the correct led pin independent of which board is used.  
If you want to know what pin the on-board led is connected to on your Arduino model, check the Technical Specs of your board at:  
<https://www.arduino.cc/en/Main/Products>

modified 8 May 2014  
by Scott Fitzgerald  
modified 2 Sep 2016  
by Arturo Guadalupi  
modified 8 Sep 2016  
by Colby Newman

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<http://www.arduino.cc/en/Tutorial/Blink>  
\*/

Found in path(s):

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SafeString startsWith(), startsWithIgnoreCase(), endsWithCharFrom() and endsWith()

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/\*  
sfStream.ino

SafeStringStream Unit test  
Example of using SafeStringStream

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SafeString substring()

Examples of SafeString substring

by Matthew Ford

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SafeString.h static memory SafeString library modified by

Matthew Ford

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modified from

WString.h - String library for Wiring & Arduino

...mostly rewritten by Paul Stoffregen...

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SafeSting length(), trim()

by Matthew Ford

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/\*

SafeString from char\* with specified size constructor

Examples of how to create SafeStrings from an existing pointer to a char[]

also see the SafeString\_ConstructorAndDebugging, SafeStringFromCharArray and SafeStringFromCharPtr examples

by Matthew Ford

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SafeString charAt() and setCharAt()

Examples of how to get and set characters of a SafeString

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Appending to SafeStrings using the += operator and concat()  
Examples of how to append different data types to SafeStrings  
Also has examples of using hasError() method

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/\*

SafeStringReader\_flushInput.ino

This example flushes any initial input and also starts flushing if "flush" is found in the text stream

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/\*

OBD\_Processor.ino for SafeString V4.0.0+

Example of using SafeString to process Car OnBoardData

by Matthew Ford

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Comparing SafeStrings

Examples of how to compare SafeStrings using the comparison operators

by Matthew Ford

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fac1370/examples/SafeString\_Tests/SafeStringComparisonOperators/SafeStringComparisonOperators.ino

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Tokenizing SafeStrings and converting to numbers

Examples of how to use the nextToken() and toLong() and toDouble() to parse a CSV line

by Matthew Ford

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/\* SafeStringInClasses\_1.ino

Example of using SafeString for Class char[]s

by Matthew Ford

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SafeString removeFrom(), removeBefore(), remove(), removeLast(), keepLast()

Examples of SafeString remove

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SSring indexOf() and lastIndexOf()

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SafeString readUntil, non-blocking until delimiter found  
Example of how to use the non-blocking readUntil() method to parse a CSV line

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Prefixing to SafeStrings using the -= operator and prefix()  
Examples of how to prefix different data types to SafeStrings

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extensively modified from

WString.cpp - SafeString library for Wiring & Arduino  
...mostly rewritten by Paul Stoffregen...  
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/\*

SafeString from char\* constructor

Examples of how to create SafeStrings from an existing pointer to a char[]

also see the SafeString\_ConstructorAndDebugging, SafeStringFromArray and  
SafeStringFromCharPtrWithSize examples

by Matthew Ford

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Tokenizing SafeStrings and converting to numbers

Examples of how to use the stoken and toLong() and toDouble() to parse a CSV line

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Fixed 9 Formatting of double/float/long/ing

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fac1370/examples/SafeString\_Tests/SafeString\_fixedWidthFormat/SafeString\_fixedWidthFormat.ino

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Test Errors for Assignment to SafeStrings using the = operator

by Matthew Ford

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fac1370/examples/SafeString\_Tests/SafeStringEquAssignErrTests/SafeStringEquAssignErrTests.ino

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/\*

SafeString constructors and assignments

Examples of how to create SafeStrings and how to assign SafeStrings from other data types

also see the SafeStringFromArray, SafeStringFromCharPtr and SafeStringFromCharPtrWithSize examples

by Matthew Ford

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fac1370/examples/SafeString\_Tests/SafeString\_ConstructorAndDebugging/SafeString\_ConstructorAndDebugging.i  
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SafeStringReader\_GPS.ino

This example reads GPS data from a SafeStringStream continuously using a SafeStringReader

by Matthew Ford

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Appending to SafeStrings using print()/println()

Examples of how to use the standard print()/println() to append and format different data types to SafeStrings

by Matthew Ford

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```

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```
/*
```

```
SafeString from char[] constructor
```

```
Examples of how to create SafeStrings from an existing char[]
```

```
also see the SafeString_ConstructorAndDebugging, SafeStringFromCharPtr and SafeStringFromCharPtrWithSize examples
```

```
by Matthew Ford
```

```
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```

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*/
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```

```
fac1370/examples/SafeString_Tests/SafeStringFromArray/SafeStringFromArray.ino
```

## 1.52 nghttp2 1.41.0

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set yrange [0:]

set terminal pngcairo font 'Sans, 8' lw 1 size 1400,1024

set xtics rotate by -45

set style histogram errorbars gap 2 lw 1

set style fill solid border -1

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## 1.53 polycoreutils 2.9-9.el8

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```

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## 1.54 binutils 2.35.1

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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
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+++++

Dean Elsner wrote the original gas for vax. [more details?]

Jay Fenlason maintained gas for a while, adding support for gdb-specific debug information and the 68k series machines, most of

the preprocessing pass, and extensive changes in messages.c, input-file.c, write.c.

K. Richard Pixley maintained gas for a while, adding various enhancements and many bug fixes, including merging support for several processors, breaking gas up to handle multiple object file format backends (including heavy rewrite, testing, an integration of the coff and b.out backends), adding configuration including heavy testing and verification of cross assemblers and file splits and renaming, converted gas to strictly ansi C including full prototypes, added support for m680[34]0 & cpu32, considerable work on i960 including a coff port (including considerable amounts of reverse engineering), a sparc opcode file rewrite, decstation, rs6000, and hp300hpux host ports, updated "know" assertions and made them work, much other reorganization, cleanup, and lint.

Ken Raeburn wrote the high-level BFD interface code to replace most of the code in format-specific I/O modules.

The original Vax-VMS support was contributed by David L. Kashtan. Eric Youngdale and Pat Rankin have done much work with it since.

The Intel 80386 machine description was written by Eliot Dresselhaus.

Minh Tran-Le at IntelliCorp contributed some AIX 386 support.

The Motorola 88k machine description was contributed by Devon Bowen of Buffalo University and Torbjorn Granlund of the Swedish Institute of Computer Science.

Keith Knowles at the Open Software Foundation wrote the original MIPS back end (tc-mips.c, tc-mips.h), and contributed Rose format support that hasn't been merged in yet. Ralph Campbell worked with the MIPS code to support a.out format.

Support for the Zilog Z8k and Hitachi H8/300, H8/500 and SH processors (tc-z8k, tc-h8300, tc-h8500, tc-sh), and IEEE 695 object file format (obj-ieee), was written by Steve Chamberlain of Cygnus Solutions. Steve also modified the COFF back end (obj-coffbfd) to use BFD for some low-level operations, for use with the Hitachi, 29k and Zilog targets.

John Gilmore built the AMD 29000 support, added .include support, and simplified the configuration of which versions accept which pseudo-ops. He updated the 68k machine description so that Motorola's opcodes always produced fixed-size instructions (e.g. jsr), while synthetic instructions remained shrinkable (jbsr). John fixed many bugs, including true tested cross-compilation support, and one bug in

relaxation that took a week and required the proverbial one-bit fix.

Ian Lance Taylor of Cygnus Solutions merged the Motorola and MIT syntaxes for the 68k, completed support for some COFF targets (68k, i386 SVR3, and SCO Unix), wrote the ECOFF support based on Michael Meissner's mips-tfile program, wrote the PowerPC and RS/6000 support, and made a few other minor patches. He handled the binutils releases for versions 2.7 through 2.9.

David Edelsohn contributed fixes for the PowerPC and AIX support.

Steve Chamberlain made gas able to generate listings.

Support for the HP9000/300 was contributed by Glenn Engel of HP.

Support for ELF format files has been worked on by Mark Eichin of Cygnus Solutions (original, incomplete implementation), Pete Hoogenboom at the University of Utah (HPPA mainly), Michael Meissner of the Open Software Foundation (i386 mainly), and Ken Raeburn of Cygnus Solutions (sparc, initial 64-bit support).

Several engineers at Cygnus Solutions have also provided many small bug fixes and configuration enhancements.

The initial Alpha support was contributed by Carnegie-Mellon University. Additional work was done by Ken Raeburn of Cygnus Solutions. Richard Henderson then rewrote much of the Alpha support.

Ian Dall updated the support code for the National Semiconductor 32000 series, and added support for Mach 3 and NetBSD running on the PC532.

Klaus Kaempf ported the assembler and the binutils to openVMS/Alpha.

Steve Haworth contributed the support for the Texas Instruction c30 (tms320c30).

H.J. Lu has contributed many patches and much testing.

Alan Modra reworked much of the i386 backend, improving the error checking, updating the code, and improving the 16 bit support, using patches from the work of Martynas Kunigelis and H.J. Lu.

Many others have contributed large or small bugfixes and enhancements. If you've contributed significant work and are not mentioned on this list, and want to be, let us know. Some of the history has been lost; we aren't intentionally leaving anyone out.

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When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

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If distribution of object code is made by offering access to copy

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5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

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\*/

Index: tdbsa/tdb.c

-----  
--- tdbsa.orig/tdb.c

+++ tdbsa/tdb.c

@@ -4,11 +4,11 @@ Rev: 23371

Last Changed Date: 2007-06-06 20:14:06 -0400 (Wed, 06 Jun 2007)

\*/

/\*

- Unix SMB/CIFS implementation.  
+ trivial database library - standalone version

- trivial database library - private includes

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Theodore Ts'o  
23-June-2007

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```
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This package was added to the e2fsprogs debian source package by Theodore Ts'o <tytso@mit.edu> on Sat Mar 15 15:33:37 EST 2003

It is part of the main e2fsprogs distribution, which can be found at:

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This is the Debian GNU/Linux prepackaged version of the ss command-line interface parsing library. It is currently distributed together with the EXT2 file system utilities, which are otherwise packaged as "e2fsprogs".

This package was put together by Yann Dirson <dirson@debian.org>, from sources obtained from a mirror of:  
tsx-11.mit.edu:/pub/linux/packages/ext2fs/

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```
#
# This is a Makefile stub which handles the creation of BSD shared
# libraries.
#
# In order to use this stub, the following makefile variables must be defined.
#
# BSDLIB_VERSION = 1.0
# BSDLIB_IMAGE = libce
# BSDLIB_MYDIR = et
# BSDLIB_INSTALL_DIR = $(SHLIBDIR)
#
```

```
all:: image
```

```
real-subdirs:: Makefile
```

```
@echo " MKDIR pic"
```

```
@mkdir -p pic
```

```
BSD_LIB = $(BSDLIB_IMAGE).so.$(BSDLIB_VERSION)
```

```
BSDLIB_PIC_FLAG = -fpic
```

```
image: $(BSD_LIB)
```

```
$(BSD_LIB): $(OBJS)
```

```
(cd pic; ld -Bshareable -o $(BSD_LIB) $(LDFLAGS_SHLIB) $(OBJS))
```

```
$(MV) pic/$(BSD_LIB) .
```

```
$(RM) -f ../$(BSD_LIB)
```

```
(cd ..; $(LN) $(LINK_BUILD_FLAGS) \
```

```
`echo $(my_dir) | sed -e 's;lib/;;'/'$(BSD_LIB) $(BSD_LIB))
```

```
install-shlibs install:: $(BSD_LIB)
```

```
@echo " INSTALL_PROGRAM $(BSDLIB_INSTALL_DIR)/$(BSD_LIB)"
```

```
@$(INSTALL_PROGRAM) $(BSD_LIB) \
```

```
$(DESTDIR)$ (BSDLIB_INSTALL_DIR)/$(BSD_LIB)
```

```
@-$(LDCONFIG)
```

```
install-strip: install
```

```
install-shlibs-strip: install-shlibs
```

```
uninstall-shlibs uninstall::
```

```
$(RM) -f $(DESTDIR)$ (BSDLIB_INSTALL_DIR)/$(BSD_LIB)
```

```
clean::
```

```
$(RM) -rf pic
```

```
$(RM) -f $(BSD_LIB)
```

```
$(RM) -f ../$(BSD_LIB)
```

This is the Debian GNU/Linux prepackaged version of the Common Error Description library. It is currently distributed together with the EXT2 file system utilities, which are otherwise packaged as "e2fsprogs".

This package was put together by Yann Dirson <dirson@debian.org>,

from sources obtained from a mirror of:

[tsx-11.mit.edu:/pub/linux/packages/ext2fs/](http://tsx-11.mit.edu:/pub/linux/packages/ext2fs/)

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Gadi Oxman, August 1995

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```

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```
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```

```
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Ty Coon, President of Vice
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```

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## 1.63.1 Available under license :

/\* zlib.h -- interface of the 'zlib' general purpose compression library  
version 1.2.11, January 15th, 2017

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## 1.64 d-bus 1.12.20

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

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6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit

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## 1.66 popt 1.16-14.el8

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```

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## 1.68 util-linux 2.36

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NR START END SECTORS SIZE NAME UUID

1 32 7679 7648 3.7M 8f8378c0-01  
2 7680 16383 8704 4.3M 8f8378c0-02  
5 7936 12799 4864 2.4M  
6 12544 16127 3584 1.8M

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```
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```
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## 1.71 traceroute 2.1.0-r0

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```
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```

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```
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```

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'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

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## 1.72 libpcap 1.9.1

### 1.72.1 Available under license :

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- \*/

## 1.73 less 4.1.3

### 1.73.1 Available under license :

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```
/**
 * Less - Leaner CSS v4.1.3
 * http://lesscss.org
 *
 * Copyright (c) 2009-2022, Alexis Sellier <self@cloudhead.net>
 * Licensed under the Apache-2.0 License.
 *
 * @license Apache-2.0
 */
/*! *****
Copyright (c) Microsoft Corporation. All rights reserved.
Licensed under the Apache License, Version 2.0 (the "License"); you may not use
this file except in compliance with the License. You may obtain a copy of the
License at http://www.apache.org/licenses/LICENSE-2.0
```

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```
***** */
/*! *****
```

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```
***** */
```

Found in path(s):

```
* /opt/cola/permits/1550489314_1675273249.1374285/0/less-4-1-3-2-tgz/package/dist/less.js
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"less.min.js","sources":["../src/less-browser/utils.js","../src/less-
browser/browser.js","../src/less/logger.js","../src/less/environment/environment.js","../src/less/data/colors.js","../src/l
ess/data/unit-
conversions.js","../src/less/data/index.js","../src/less/tree/node.js","../src/less/tree/color.js","../src/less/tree/paren.js",".
../src/less/tree/combinator.js","../src/less/tree/element.js","../src/less/constants.js","../node_modules/is-
what/dist/index.esm.js","../node_modules/copy-anything/dist/index.esm.js","../src/less/utils.js","../src/less/less-
error.js","../src/less/tree/selector.js","../src/less/tree/value.js","../src/less/tree/keyword.js","../src/less/tree/anonymous.
js","../src/less/tree/declaration.js","../src/less/tree/debug-
info.js","../src/less/tree/comment.js","../src/less/contexts.js","../src/less/functions/function-
registry.js","../src/less/functions/default.js","../src/less/tree/ruleset.js","../src/less/tree/atrule.js","../src/less/tree/detach
ed-
ruleset.js","../src/less/tree/unit.js","../src/less/tree/dimension.js","../src/less/tree/operation.js","../src/less/tree/expressi
on.js","../src/less/functions/function-
caller.js","../node_modules/tslib/tslib.es6.js","../src/less/tree/call.js","../src/less/tree/variable.js","../src/less/tree/prop
erty.js","../src/less/tree/attribute.js","../src/less/tree/quoted.js","../src/less/tree/url.js","../src/less/tree/media.js","../src/l
ess/tree/import.js","../src/less/tree/js-eval-
node.js","../src/less/tree/javascript.js","../src/less/tree/assignment.js","../src/less/tree/condition.js","../src/less/tree/uni
code-descriptor.js","../src/less/tree/negative.js","../src/less/tree/extend.js","../src/less/tree/variable-
call.js","../src/less/tree/namespace-value.js","../src/less/tree/mixin-definition.js","../src/less/tree/mixin-
call.js","../src/less/tree/index.js","../src/less/environment/abstract-file-manager.js","../src/less/environment/abstract-
plugin-loader.js","../src/less/visitors/visitor.js","../src/less/visitors/import-sequencer.js","../src/less/visitors/import-
visitor.js","../src/less/visitors/set-tree-visibility-visitor.js","../src/less/visitors/extend-
```

```

visitor.js", "../src/less/visitors/join-selector-visitor.js", "../src/less/visitors/to-css-
visitor.js", "../src/less/visitors/index.js", "../src/less/parser/parser-
input.js", "../src/less/parser/chunker.js", "../src/less/parser/parser.js", "../src/less/functions/boolean.js", "../src/less/functi
ons/color.js", "../src/less/functions/color-blending.js", "../src/less/functions/list.js", "../src/less/functions/math-
helper.js", "../src/less/functions/math.js", "../src/less/functions/number.js", "../src/less/functions/string.js", "../src/less/fu
nctions/types.js", "../src/less/functions/index.js", "../src/less/functions/data-
uri.js", "../src/less/functions/svg.js", "../src/less/transform-tree.js", "../src/less/plugin-
manager.js", "../node_modules/parse-node-version/index.js", "../src/less-browser/file-
manager.js", "../src/less/index.js", "../src/less/parse-tree.js", "../src/less/source-map-builder.js", "../src/less/source-map-
output.js", "../src/less/import-manager.js", "../src/less/render.js", "../src/less/parse.js", "../src/less-browser/plugin-
loader.js", "../src/less-browser/error-reporting.js", "../src/less-browser/bootstrap.js", "../src/less/default-
options.js", "../src/less-browser/add-default-options.js", "../src/less-browser/index.js", "../src/less-browser/log-
listener.js", "../src/less-browser/cache.js", "../src/less-browser/image-size.js"], "sourcesContent": [{"\nexport function
extractId(href) {\n  return href.replace(/^([a-z-]+:)?(?:[^\s/]+)/, "") // Remove protocol & domain\n
.replace(/[\?&]livereload=\w+/, "") // Remove LiveReload cachebuster\n  .replace(/^\s/, "") //
Remove root\n  .replace(/^[a-zA-Z]+$/, "") // Remove simple extension\n  .replace(/^(^\.|\w-)+/, '-
') // Replace illegal characters\n  .replace(/./g, ':'); // Replace dots with colons(for valid
id)\n}\n\nexport function addDataAttr(options, tag) {\n  if (!tag) {return;} // in case of tag is null or undefined\n
for (const opt in tag.dataset) {\n    if (tag.dataset.hasOwnProperty(opt)) {\n      if (opt === 'env' || opt ===
'dumpLineNumbers' || opt === 'rootpath' || opt === 'errorReporting') {\n        options[opt] = tag.dataset[opt];\n
      } else {\n        try {\n          options[opt] = JSON.parse(tag.dataset[opt]);\n        } catch (_) {}
      }\n    }\n  }\n  return "import * as utils from './utils';\n\nexport default {\n  createCSS:
function (document, styles, sheet) {\n    // Strip the query-string\n    const href = sheet.href || ";\n    // If
there is no title set, use the filename, minus the extension\n    const id = `less:${sheet.title ||
utils.extractId(href)}`;\n    // If this has already been inserted into the DOM, we may need to replace it\n
const oldStyleNode = document.getElementById(id);\n    let keepOldStyleNode = false;\n    // Create a new
stylesheet node for insertion or (if necessary) replacement\n    const styleNode =
document.createElement('style');\n    styleNode.setAttribute('type', 'text/css');\n    if (sheet.media) {\n
styleNode.setAttribute('media', sheet.media);\n    }\n    styleNode.id = id;\n    if (!styleNode.styleSheet) {\n
styleNode.appendChild(document.createTextNode(styles));\n    // If new contents match contents of
oldStyleNode, don't replace oldStyleNode\n    keepOldStyleNode = (oldStyleNode !== null &&
oldStyleNode.childNodes.length > 0 && styleNode.childNodes.length > 0 &&\n
oldStyleNode.firstChild.nodeValue === styleNode.firstChild.nodeValue);\n    }\n    const head =
document.getElementsByTagName('head')[0];\n    // If there is no oldStyleNode, just append; otherwise, only
append if we need\n    // to replace oldStyleNode with an updated stylesheet\n    if (oldStyleNode === null ||
keepOldStyleNode === false) {\n      const nextEl = sheet && sheet.nextSibling || null;\n      if (nextEl) {\n
nextEl.parentNode.insertBefore(styleNode, nextEl);\n      } else {\n
head.appendChild(styleNode);\n      }\n    }\n    if (oldStyleNode && keepOldStyleNode === false) {\n
oldStyleNode.parentNode.removeChild(oldStyleNode);\n    }\n    // For IE.\n    // This needs to happen
*after* the style element is added to the DOM, otherwise IE 7 and 8 may crash.\n    // See
http://social.msdn.microsoft.com/Forums/en-US/7e081b65-878a-4c22-8e68-c10d39c2ed32/internet-explorer-crashes-appending-style-element-to-head\n    if (styleNode.styleSheet) {\n      try {\n
styleNode.styleSheet.cssText = styles;\n      } catch (e) {\n        throw new Error('Couldn\\'t reassign
styleSheet.cssText.');

```

```

msg);\n },\n debug: function(msg) {\n   this._fireEvent('debug', msg);\n },\n addListener:
function(listener) {\n   this._listeners.push(listener);\n },\n removeListener: function(listener) {\n   for (let
i = 0; i < this._listeners.length; i++) {\n     if (this._listeners[i] === listener) {\n       this._listeners.splice(i,
1);\n       return;\n     }\n   }\n },\n _fireEvent: function(type, msg) {\n   for (let i = 0; i <
this._listeners.length; i++) {\n     const logFunction = this._listeners[i][type];\n     if (logFunction) {\n
logFunction(msg);\n     }\n   }\n },\n _listeners: []\n};\n", "/**\n * @todo Document why this
abstraction exists, and the relationship between\n *   environment, file managers, and plugin manager\n
*/\n\nimport logger from './logger';\n\nclass Environment {\n  constructor(externalEnvironment, fileManagers) {\n
this.fileManagers = fileManagers || [];\n   externalEnvironment = externalEnvironment || {};\n\n   const
optionalFunctions = ['encodeBase64', 'mimeLookup', 'charsetLookup', 'getSourceMapGenerator'];\n   const
requiredFunctions = [];\n   const functions = requiredFunctions.concat(optionalFunctions);\n\n   for (let i = 0; i
< functions.length; i++) {\n     const propName = functions[i];\n     const environmentFunc =
externalEnvironment[propName];\n     if (environmentFunc) {\n       this[propName] =
environmentFunc.bind(externalEnvironment);\n     } else if (i < requiredFunctions.length) {\n
this.warn(`missing required function in environment - ${propName}`);\n     }\n   }\n }\n\n  getFileManager(filename, currentDirectory, options, environment, isSync) {\n\n   if (!filename) {\n
logger.warn('getFileManager called with no filename.. Please report this issue. continuing.);\n   }\n   if
(currentDirectory == null) {\n     logger.warn('getFileManager called with null directory.. Please report this
issue. continuing.);\n   }\n\n   let fileManagers = this.fileManagers;\n   if (options.pluginManager) {\n
fileManagers = [].concat(fileManagers).concat(options.pluginManager.getFileManagers());\n   }\n   for (let i
= fileManagers.length - 1; i >= 0; i--) {\n     const fileManager = fileManagers[i];\n     if
(fileManager[isSync ? 'supportsSync' : 'supports'](filename, currentDirectory, options, environment)) {\n
return fileManager;\n     }\n   }\n   return null;\n }\n\n  addFileManager(fileManager) {\n
this.fileManagers.push(fileManager);\n }\n\n  clearFileManagers() {\n   this.fileManagers = [];\n
}\n}\n\nexport default Environment;\n", "export default {\n  'aliceblue': '#f0f8ff',\n  'antiquewhite': '#faebd7',\n
'aqua': '#00ffff',\n  'aquamarine': '#7fffd4',\n  'azure': '#f0ffff',\n  'beige': '#f5f5dc',\n  'bisque': '#ffe4c4',\n
'black': '#000000',\n  'blanchedalmond': '#ffebcd',\n  'blue': '#0000ff',\n  'blueviolet': '#8a2be2',\n
'brown': '#a52a2a',\n  'burlywood': '#deb887',\n  'cadetblue': '#5f9ea0',\n  'chartreuse': '#7fff00',\n
'chocolate': '#d2691e',\n  'coral': '#ff7f50',\n  'cornflowerblue': '#6495ed',\n  'cornsilk': '#fff8dc',\n
'crimson': '#dc143c',\n  'cyan': '#00ffff',\n  'darkblue': '#00008b',\n  'darkcyan': '#008b8b',\n
'darkgoldenrod': '#b8860b',\n  'darkgray': '#a9a9a9',\n  'darkgrey': '#a9a9a9',\n  'darkgreen': '#006400',\n
'darkkhaki': '#bdb76b',\n  'darkmagenta': '#8b008b',\n  'darkolivegreen': '#556b2f',\n  'darkorange': '#ff8c00',\n
'darkorchid': '#9932cc',\n  'darkred': '#8b0000',\n  'darksalmon': '#e9967a',\n  'darkseagreen': '#8fbc8f',\n
'darkslateblue': '#483d8b',\n  'darkslategray': '#2f4f4f',\n  'darkslategrey': '#2f4f4f',\n  'darkturquoise': '#00ced1',\n
'darkviolet': '#9400d3',\n  'deeppink': '#ff1493',\n  'deepskyblue': '#00bfff',\n  'dimgray': '#696969',\n
'dimgrey': '#696969',\n  'dodgerblue': '#1e90ff',\n  'firebrick': '#b22222',\n  'floralwhite': '#fffaf0',\n
'forestgreen': '#228b22',\n  'fuchsia': '#ff00ff',\n  'gainsboro': '#dcdcdc',\n  'ghostwhite': '#f8f8ff',\n
'gold': '#ffd700',\n  'goldenrod': '#daa520',\n  'gray': '#808080',\n  'grey': '#808080',\n  'green': '#008000',\n
'greenyellow': '#adff2f',\n  'honeydew': '#f0ffff',\n  'hotpink': '#ff69b4',\n  'indianred': '#cd5c5c',\n
'indigo': '#4b0082',\n  'ivory': '#fffff0',\n  'khaki': '#f0e68c',\n  'lavender': '#e6e6fa',\n  'lavenderblush': '#fff0f5',\n
'lawngreen': '#7cfc00',\n  'lemonchiffon': '#ffffac',\n  'lightblue': '#add8e6',\n  'lightcoral': '#f08080',\n
'lightcyan': '#e0ffff',\n  'lightgoldenrodyellow': '#fafad2',\n  'lightgray': '#d3d3d3',\n  'lightgrey': '#d3d3d3',\n
'lightgreen': '#90ee90',\n  'lightpink': '#ffb6c1',\n  'lightsalmon': '#ffa07a',\n  'lightseagreen': '#20b2aa',\n
'lightskyblue': '#87cefa',\n  'lightslategray': '#778899',\n  'lightslategrey': '#778899',\n  'lightsteelblue': '#b0c4de',\n
'lightyellow': '#ffffe0',\n  'lime': '#00ff00',\n  'limegreen': '#32cd32',\n  'linen': '#faf0e6',\n  'magenta': '#ff00ff',\n
'maroon': '#800000',\n  'mediumaquamarine': '#66cdaa',\n  'mediumblue': '#0000cd',\n  'mediumorchid': '#ba55d3',\n
'mediumpurple': '#9370d8',\n  'mediumseagreen': '#3cb371',\n  'mediumslateblue': '#7b68ee',\n
'mediumspringgreen': '#00fa9a',\n  'mediumturquoise': '#48d1cc',\n  'mediumvioletred': '#c71585',\n

```

```

'midnightblue':#191970',\n 'mintcream':#f5fffa',\n 'mistyrose':#ffe4e1',\n 'moccasin':#ffe4b5',\n
'navajowhite':#ffdead',\n 'navy':#000080',\n 'oldlace':#fdf5e6',\n 'olive':#808000',\n 'olivedrab':#6b8e23',\n
'orange':#ffa500',\n 'orangered':#ff4500',\n 'orchid':#da70d6',\n 'palegoldenrod':#eee8aa',\n
'palegreen':#98fb98',\n 'paleturquoise':#afeeee',\n 'palevioletred':#d87093',\n 'papayawhip':#ffefd5',\n
'peachpuff':#ffdab9',\n 'peru':#cd853f',\n 'pink':#ffc0cb',\n 'plum':#dda0dd',\n 'powderblue':#b0e0e6',\n
'purple':#800080',\n 'rebeccapurple':#663399',\n 'red':#ff0000',\n 'rosybrown':#bc8f8f',\n
'royalblue':#4169e1',\n 'saddlebrown':#8b4513',\n 'salmon':#fa8072',\n 'sandybrown':#f4a460',\n
'seagreen':#2e8b57',\n 'seashell':#fff5ee',\n 'sienna':#a0522d',\n 'silver':#c0c0c0',\n 'skyblue':#87ceeb',\n
'slateblue':#6a5acd',\n 'slategray':#708090',\n 'slategrey':#708090',\n 'snow':#fffafa',\n
'springgreen':#00ff7f',\n 'steelblue':#4682b4',\n 'tan':#d2b48c',\n 'teal':#008080',\n 'thistle':#d8bfd8',\n
'tomato':#ff6347',\n 'turquoise':#40e0d0',\n 'violet':#ee82ee',\n 'wheat':#f5deb3',\n 'white':#ffffff',\n
'whitesmoke':#f5f5f5',\n 'yellow':#ffff00',\n 'yellowgreen':#9acd32'\n};","export default {\n length: {\n
'm': 1,\n 'cm': 0.01,\n 'mm': 0.001,\n 'in': 0.0254,\n 'px': 0.0254 / 96,\n 'pt': 0.0254 / 72,\n
'pc': 0.0254 / 72 * 12\n },\n duration: {\n 's': 1,\n 'ms': 0.001\n },\n angle: {\n 'rad': 1 / (2 *
Math.PI),\n 'deg': 1 / 360,\n 'grad': 1 / 400,\n 'turn': 1\n }\n }","import colors from './colors';\nimport
unitConversions from './unit-conversions';\n\nexport default { colors, unitConversions };","/**\n * The reason why
Node is a class and other nodes simply do not extend\n * from Node (since we're transpiling) is due to this issue:\n *
\n * https://github.com/less/less.js/issues/3434\n */\nclass Node {\n constructor() {\n this.parent = null;\n
this.visibilityBlocks = undefined;\n this.nodeVisible = undefined;\n this.rootNode = null;\n this.parsed
= null;\n }\n\n get currentFileInfo() {\n return this.fileInfo();\n }\n\n get index() {\n return
this.getIndex();\n }\n\n setParent(nodes, parent) {\n function set(node) {\n if (node && node
instanceof Node) {\n node.parent = parent;\n }\n }\n if (Array.isArray(nodes)) {\n
nodes.forEach(set);\n }\n else {\n set(nodes);\n }\n }\n\n getIndex() {\n return
this._index || (this.parent && this.parent.getIndex()) || 0;\n }\n\n fileInfo() {\n return this._fileInfo ||
(this.parent && this.parent.fileInfo()) || {};\n }\n\n isRulesetLike() { return false; }\n\n toCSS(context) {\n
const strs = [];\n this.genCSS(context, {\n add: function(chunk, fileInfo, index) {\n
strs.push(chunk);\n },\n isEmpty: function () {\n return str.length === 0;\n }\n
});\n return str.join("");\n }\n\n genCSS(context, output) {\n output.add(this.value);\n }\n\n
accept(visitor) {\n this.value = visitor.visit(this.value);\n }\n\n eval() { return this; }\n\n _operate(context,
op, a, b) {\n switch (op) {\n case '+': return a + b;\n case '-': return a - b;\n case '*': return a *
b;\n case '/': return a / b;\n }\n }\n\n fround(context, value) {\n const precision = context &&
context.numPrecision;\n // add "\epsilon" to ensure numbers like 1.000000005 (represented as
1.000000004999...) are properly rounded:\n return (precision) ? Number((value + 2e-16).toFixed(precision)) :
value;\n }\n\n static compare(a, b) {\n /* returns:\n -1: a < b\n 0: a = b\n 1: a > b\n and
*any* other value for a != b (e.g. undefined, NaN, -2 etc.) */\n if ((a.compare) &&\n // for "symmetric
results" force toCSS-based comparison\n // of Quoted or Anonymous if either value is one of those\n
!(b.type === 'Quoted' || b.type === 'Anonymous')) {\n return a.compare(b);\n } else if (b.compare) {\n
return -b.compare(a);\n } else if (a.type !== b.type) {\n return undefined;\n }\n\n a =
a.value;\n b = b.value;\n if (!Array.isArray(a)) {\n return a === b ? 0 : undefined;\n }\n if
(a.length !== b.length) {\n return undefined;\n }\n for (let i = 0; i < a.length; i++) {\n if
(Node.compare(a[i], b[i]) !== 0) {\n return undefined;\n }\n }\n return 0;\n }\n\n static
numericCompare(a, b) {\n return a < b ? -1\n : a === b ? 0\n : a > b ? 1 : undefined;\n
}\n\n // Returns true if this node represents root of ast imported by reference\n blocksVisibility() {\n if
(this.visibilityBlocks === null) {\n this.visibilityBlocks = 0;\n }\n return this.visibilityBlocks !== 0;\n
}\n\n addVisibilityBlock() {\n if (this.visibilityBlocks === null) {\n this.visibilityBlocks = 0;\n }\n
this.visibilityBlocks = this.visibilityBlocks + 1;\n }\n\n removeVisibilityBlock() {\n if
(this.visibilityBlocks === null) {\n this.visibilityBlocks = 0;\n }\n this.visibilityBlocks =
this.visibilityBlocks - 1;\n }\n\n // Turns on node visibility - if called node will be shown in output regardless\n

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// of whether it comes from import by reference or not\n  ensureVisibility() {\n    this.nodeVisible = true;\n  }\n\n  // Turns off node visibility - if called node will NOT be shown in output regardless\n  // of whether it comes from import by reference or not\n  ensureInvisibility() {\n    this.nodeVisible = false;\n  }\n\n  // return values:\n  // false - the node must not be visible\n  // true - the node must be visible\n  // undefined or null - the node has the same visibility as its parent\n  isVisible() {\n    return this.nodeVisible;\n  }\n\n  visibilityInfo() {\n    return {\n      visibilityBlocks: this.visibilityBlocks,\n      nodeVisible: this.nodeVisible\n    };\n  }\n\n  copyVisibilityInfo(info) {\n    if (!info) {\n      return;\n    }\n    this.visibilityBlocks = info.visibilityBlocks;\n    this.nodeVisible = info.nodeVisible;\n  }\n}\n\nexport default Node;\n", "import Node from './node';\nimport colors from './data/colors';\n\n/\n\n// RGB Colors - #ff0014, #eee\n\nconst Color = function(rgb, a, originalForm) {\n  const self = this;\n  /\n\n  // The end goal here, is to parse the arguments\n  // into an integer triplet, such as `128, 255, 0`\n  /\n\n  // This facilitates operations and conversions.\n  /\n\n  if (Array.isArray(rgb)) {\n    this.rgb = rgb;\n  } else if (rgb.length >= 6) {\n    this.rgb = [];\n    rgb.match(/.{2}/g).map(function (c, i) {\n      if (i < 3) {\n        self.rgb.push(parseInt(c, 16));\n      } else {\n        self.alpha = (parseInt(c, 16)) / 255;\n      }\n    });\n  } else {\n    this.rgb = [];\n    rgb.split("").map(function (c, i) {\n      if (i < 3) {\n        self.rgb.push(parseInt(c + c, 16));\n      } else {\n        self.alpha = (parseInt(c + c, 16)) / 255;\n      }\n    });\n  }\n\n  this.alpha = this.alpha || (typeof a === 'number' ? a : 1);\n  if (typeof originalForm !== 'undefined') {\n    this.value = originalForm;\n  }\n}\n\nColor.prototype = Object.assign(new Node(), {\n  type: 'Color',\n\n  luma() {\n    let r = this.rgb[0] / 255, g = this.rgb[1] / 255, b = this.rgb[2] / 255;\n\n    r = (r <= 0.03928) ? r / 12.92 : Math.pow(((r + 0.055) / 1.055), 2.4);\n    g = (g <= 0.03928) ? g / 12.92 : Math.pow(((g + 0.055) / 1.055), 2.4);\n    b = (b <= 0.03928) ? b / 12.92 : Math.pow(((b + 0.055) / 1.055), 2.4);\n\n    return 0.2126 * r + 0.7152 * g + 0.0722 * b;\n  },\n\n  genCSS(context, output) {\n    output.add(this.toCSS(context));\n  },\n\n  toCSS(context, doNotCompress) {\n    const compress = context && context.compress && !doNotCompress;\n    let color;\n    let alpha;\n    let colorFunction;\n    let args = [];\n\n    // `value` is set if this color was originally\n    // converted from a named color string so we need\n    // to respect this and try to output named color too.\n    alpha = this.fround(context, this.alpha);\n\n    if (this.value) {\n      if (this.value.indexOf('rgb') === 0) {\n        if (alpha < 1) {\n          colorFunction = 'rgba';\n        } else if (this.value.indexOf('hsl') === 0) {\n          if (alpha < 1) {\n            colorFunction = 'hsla';\n          } else {\n            colorFunction = 'hsl';\n          }\n        } else {\n          return this.value;\n        }\n      } else {\n        if (alpha < 1) {\n          colorFunction = 'rgba';\n        }\n      }\n\n      switch (colorFunction) {\n        case 'rgba':\n          args = this.rgb.map(function (c) {\n            return clamp(Math.round(c), 255);\n          }).concat(clamp(alpha, 1));\n          break;\n        case 'hsla':\n          args.push(clamp(alpha, 1));\n        case 'hsl':\n          color = this.toHSL();\n          args = [\n            this.fround(context, color.h),\n            `${this.fround(context, color.s * 100)}%`,\n            `${this.fround(context, color.l * 100)}%`\n          ].concat(args);\n      }\n\n      if (colorFunction) {\n        // Values are capped between `0` and `255`, rounded and zero-padded.\n        return `${colorFunction}(${args.join(', ${compress ? " : ' : '}`)})`;\n      }\n\n      color = this.toRGB();\n\n      if (compress) {\n        const splitcolor = color.split("");\n\n        // Convert color to short format\n        if (splitcolor[1] === splitcolor[2] && splitcolor[3] === splitcolor[4] && splitcolor[5] === splitcolor[6]) {\n          color = `#${splitcolor[1]}${splitcolor[3]}${splitcolor[5]}`;\n        }\n      }\n\n      return color;\n    },\n\n    /\n\n    // Operations have to be done per-channel, if not,\n    // channels will spill onto each other. Once we have\n    // our result, in the form of an integer triplet,\n    // we create a new Color node to hold the result.\n    /\n\n    operate(context, op, other) {\n      const rgb = new Array(3);\n      const alpha = this.alpha * (1 - other.alpha) + other.alpha;\n\n      for (let c = 0; c < 3; c++) {\n        rgb[c] = this._operate(context, op, this.rgb[c], other.rgb[c]);\n      }\n\n      return new Color(rgb, alpha);\n    },\n\n    toRGB() {\n      return toHex(this.rgb);\n    },\n\n    toHSL() {\n      const r = this.rgb[0] / 255, g = this.rgb[1] / 255, b = this.rgb[2] / 255, a = this.alpha;\n\n      const max = Math.max(r, g, b), min = Math.min(r, g, b);\n      let h;\n      let s;\n      const l = (max + min) / 2;\n      const d = max - min;\n\n      if (max === min) {\n        h = s = 0;\n      } else {\n        s = 1 > 0.5 ? d / (2 - max - min) : d / (max + min);\n\n        switch (max) {\n          case r: h = (g - b) / d + (g < b ? 6 : 0); break;\n        }\n      }\n    },\n  },\n});

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        case g: h = (b - r) / d + 2;          break;\n          case b: h = (r - g) / d + 4;          break;\n          }\n      h /= 6;\n      }\n      return { h: h * 360, s, l, a }; }\n    },\n\n    // Adapted from http://mjjackson.com/2008/02/rgb-to-hsl-and-rgb-to-hsv-color-model-conversion-algorithms-in-javascript\n    toHSV() {\n      const r = this.rgb[0] / 255, g = this.rgb[1] / 255, b = this.rgb[2] / 255, a = this.alpha;\n\n      const max = Math.max(r, g, b), min = Math.min(r, g, b);\n      let h;\n      let s;\n      const v = max;\n      const d = max - min;\n      if (max === 0) {\n        s = 0;\n      } else {\n        s = d / max;\n      }\n      if (max === min) {\n        h = 0;\n      } else {\n        switch (max) {\n          case r: h = (g - b) / d + (g < b ? 6 : 0); break;\n          case g: h = (b - r) / d + 2; break;\n          case b: h = (r - g) / d + 4; break;\n        }\n        h /= 6;\n      }\n      return { h: h * 360, s, v, a }; }\n    },\n\n    toARGB() {\n      return toHex([this.alpha * 255].concat(this.rgb)); }\n    },\n\n    compare(x) {\n      return (x.rgb[0] === this.rgb[0] && x.rgb[1] === this.rgb[1] && x.rgb[2] === this.rgb[2] && x.alpha === this.alpha) ? 0 : undefined; }\n  });\n\n  Color.fromKeyword = function(keyword) {\n    let c;\n    const key = keyword.toLowerCase();\n    if (colors.hasOwnProperty(key)) {\n      c = new Color(colors[key].slice(1));\n    } else if (key === 'transparent') {\n      c = new Color([0, 0, 0], 0);\n    }\n\n    if (c) {\n      c.value = keyword;\n      return c;\n    }\n  };\n\n  function clamp(v, max) {\n    return Math.min(Math.max(v, 0), max);\n  }\n\n  function toHex(v) {\n    return `#${v.map(function (c) {\n      c = clamp(Math.round(c), 255);\n      return (c < 16 ? '0' : '') + c.toString(16);\n    }).join("")}`;\n  }\n\n  export default Color;\n\n  "import Node from './node';\n\n  const Paren = function(node) {\n    this.value = node;\n  };\n\n  Paren.prototype = Object.assign(new Node(), {\n    type: 'Paren',\n\n    genCSS(context, output) {\n      output.add('(');\n      this.value.genCSS(context, output);\n      output.add(')');\n    },\n\n    eval(context) {\n      return new Paren(this.value.eval(context));\n    }\n  });\n\n  export default Paren;\n\n  "import Node from './node';\n\n  const _noSpaceCombinators = {\n    ":": true,\n    "'": true,\n    "|": true\n  };\n\n  const Combinator = function(value) {\n    if (value === '') {\n      this.value = '';\n      this.emptyOrWhitespace = true;\n    } else {\n      this.value = value ? value.trim() : '';\n      this.emptyOrWhitespace = this.value === '';\n    }\n  };\n\n  Combinator.prototype = Object.assign(new Node(), {\n    type: 'Combinator',\n\n    genCSS(context, output) {\n      const spaceOrEmpty = (context.compress || _noSpaceCombinators[this.value]) ? '' : ' ';\n      output.add(spaceOrEmpty + this.value + spaceOrEmpty);\n    }\n  });\n\n  export default Combinator;\n\n  "import Node from './node';\n\n  import Paren from './paren';\n  import Combinator from './combinator';\n\n  const Element = function(combinator, value, isVisible, index, fileInfo, visibilityInfo) {\n    this.combinator = combinator instanceof Combinator ? combinator : new Combinator(combinator);\n\n    if (typeof value === 'string') {\n      this.value = value.trim();\n    } else if (value) {\n      this.value = value;\n    } else {\n      this.value = '';\n    }\n\n    this.isVisible = isVisible;\n    this._index = index;\n    this._fileInfo = fileInfo;\n    this.copyVisibilityInfo(visibilityInfo);\n\n    this.setParent(this.combinator, this);\n\n    Element.prototype = Object.assign(new Node(), {\n      type: 'Element',\n\n      accept(visitor) {\n        const value = this.value;\n        this.combinator = visitor.visit(this.combinator);\n        if (typeof value === 'object') {\n          this.value = visitor.visit(value);\n        }\n      },\n\n      eval(context) {\n        return new Element(this.combinator,\n          this.value.eval ? this.value.eval(context) : this.value,\n          this.isVisible,\n          this.getIndex(),\n          this.fileInfo(),\n          this.visibilityInfo());\n      },\n\n      clone() {\n        return new Element(this.combinator,\n          this.value,\n          this.isVisible,\n          this.getIndex(),\n          this.fileInfo(),\n          this.visibilityInfo());\n      },\n\n      genCSS(context, output) {\n        output.add(this.toCSS(context),\n          this.fileInfo(),\n          this.getIndex());\n      },\n\n      toCSS(context) {\n        context = context || {};\n        let value = this.value;\n        const firstSelector = context.firstSelector;\n        if (value instanceof Paren) {\n          // selector in parens should not be affected by outer selector\n          // flags (breaks only interpolated selectors - see #1973)\n          context.firstSelector = true;\n        }\n        value = value.toCSS ? value.toCSS(context) : value;\n        context.firstSelector = firstSelector;\n        if (value === "" && this.combinator.value.charAt(0) === '&') {\n          return "";\n        } else {\n          return this.combinator.toCSS(context) + value;\n        }\n      }\n    });\n\n  export default Element;\n\n  "export const Math = {\n    ALWAYS: 0,\n    PARENS_DIVISION: 1,\n    PARENS: 2\n  };\n\n  // removed - STRICT_LEGACY: 3\n\n  export const RewriteUrls = {\n    OFF: 0,\n    LOCAL: 1,\n    ALL: 2\n  };\n\n  /**\n   * Returns the object type of the given payload\n   * @param {*} payload\n   * @returns {string}\n   */\n  function getType(payload) {\n    return Object.prototype.toString.call(payload).slice(8, -

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1);\r\n}\r\n/**\r\n * Returns whether the payload is undefined\r\n * @param {*} payload\r\n * @returns
{payload is undefined}\r\n */\r\nfunction isUndefined(payload) {\r\n  return getType(payload) ===
'Undefined';\r\n}\r\n/**\r\n * Returns whether the payload is null\r\n * @param {*} payload\r\n * @returns
{payload is null}\r\n */\r\nfunction isNull(payload) {\r\n  return getType(payload) === 'Null';\r\n}\r\n/**\r\n *
Returns whether the payload is a plain JavaScript object (excluding special classes or objects with other
prototypes)\r\n * @param {*} payload\r\n * @returns {payload is Record<string, any>}\r\n */\r\nfunction
isPlainObject(payload) {\r\n  if (getType(payload) !== 'Object')\r\n    return false;\r\n  return
payload.constructor === Object && Object.getPrototypeOf(payload) === Object.prototype;\r\n}\r\n/**\r\n *
Returns whether the payload is a plain JavaScript object (excluding special classes or objects with other
prototypes)\r\n * @param {*} payload\r\n * @returns {payload is Record<string, any>}\r\n */\r\nfunction
isObject(payload) {\r\n  return isPlainObject(payload);\r\n}\r\n/**\r\n * Returns whether the payload is an empty
object (excluding special classes or objects with other prototypes)\r\n * @param {*} payload\r\n * @returns
{payload is { [K in any]: never }}\r\n */\r\nfunction isEmptyObject(payload) {\r\n  return isPlainObject(payload)
&& Object.keys(payload).length === 0;\r\n}\r\n/**\r\n * Returns whether the payload is an any kind of object
(including special classes or objects with different prototypes)\r\n * @param {*} payload\r\n * @returns
{payload is Record<string, any>}\r\n */\r\nfunction isAnyObject(payload) {\r\n  return getType(payload) ===
'Object';\r\n}\r\n/**\r\n * Returns whether the payload is an object like a type passed in <>\r\n * @param T this
must be passed in <>\r\n * @param {*} payload\r\n * @returns {payload is T}\r\n */\r\nfunction
isObjectLike<T>(payload) // will make sure it's an object and has an `id` prop.\r\n * @template T this
must be passed in <>\r\n * @param {*} payload\r\n * @returns {payload is T}\r\n */\r\nfunction
isObjectLike(payload) {\r\n  return isAnyObject(payload);\r\n}\r\n/**\r\n * Returns whether the payload is a
function (regular or async)\r\n * @param {*} payload\r\n * @returns {payload is AnyFunction}\r\n
*/\r\nfunction isFunction(payload) {\r\n  return typeof payload === "function";\r\n}\r\n/**\r\n * Returns whether
the payload is an array\r\n * @param {any} payload\r\n * @returns {payload is any[]}\r\n */\r\nfunction
isArray(payload) {\r\n  return getType(payload) === 'Array';\r\n}\r\n/**\r\n * Returns whether the payload is an
array with at least 1 item\r\n * @param {*} payload\r\n * @returns {payload is any[]}\r\n */\r\nfunction
isFullArray(payload) {\r\n  return isArray(payload) && payload.length > 0;\r\n}\r\n/**\r\n * Returns whether the
payload is an empty array\r\n * @param {*} payload\r\n * @returns {payload is []}\r\n */\r\nfunction
isEmptyArray(payload) {\r\n  return isArray(payload) && payload.length === 0;\r\n}\r\n/**\r\n * Returns whether
the payload is a string\r\n * @param {*} payload\r\n * @returns {payload is string}\r\n */\r\nfunction
isString(payload) {\r\n  return getType(payload) === 'String';\r\n}\r\n/**\r\n * Returns whether the payload is a
string, BUT returns false for "\r\n * @param {*} payload\r\n * @returns {payload is string}\r\n */\r\nfunction
isFullString(payload) {\r\n  return isString(payload) && payload !== ";\r\n}\r\n/**\r\n * Returns whether the
payload is "\r\n * @param {*} payload\r\n * @returns {payload is string}\r\n */\r\nfunction
isEmptyString(payload) {\r\n  return payload === ";\r\n}\r\n/**\r\n * Returns whether the payload is a number (but
not NaN)\r\n * This will return `false` for `NaN`!\r\n * @param {*} payload\r\n * @returns {payload is
number}\r\n */\r\nfunction isNumber(payload) {\r\n  return getType(payload) === 'Number' &&
!isNaN(payload);\r\n}\r\n/**\r\n * Returns whether the payload is a boolean\r\n * @param {*} payload\r\n *
@returns {payload is boolean}\r\n */\r\nfunction isBoolean(payload) {\r\n  return getType(payload) ===
'Boolean';\r\n}\r\n/**\r\n * Returns whether the payload is a regular expression (RegExp)\r\n * @param {*}
payload\r\n * @returns {payload is RegExp}\r\n */\r\nfunction isRegExp(payload) {\r\n  return getType(payload)
=== 'RegExp';\r\n}\r\n/**\r\n * Returns whether the payload is a Map\r\n * @param {*} payload\r\n *
@returns {payload is Map<any, any>}\r\n */\r\nfunction isMap(payload) {\r\n  return getType(payload) ===
'Map';\r\n}\r\n/**\r\n * Returns whether the payload is a WeakMap\r\n * @param {*} payload\r\n * @returns
{payload is WeakMap<any, any>}\r\n */\r\nfunction isWeakMap(payload) {\r\n  return getType(payload) ===
'WeakMap';\r\n}\r\n/**\r\n * Returns whether the payload is a Set\r\n * @param {*} payload\r\n * @returns
{payload is Set<any>}\r\n */\r\nfunction isSet(payload) {\r\n  return getType(payload) === 'Set';\r\n}\r\n/**\r\n *
Returns whether the payload is a WeakSet\r\n * @param {*} payload\r\n * @returns {payload is
WeakSet<any>}\r\n */\r\nfunction isWeakSet(payload) {\r\n  return getType(payload) ===

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'WeakSet';\r\n}\r\n/**\r\n * Returns whether the payload is a Symbol\r\n * @param {*} payload\r\n * @returns
{payload is symbol}\r\n */\r\nfunction isSymbol(payload) {\r\n  return getType(payload) ===
'Symbol';\r\n}\r\n/**\r\n * Returns whether the payload is a Date, and that the date is valid\r\n * @param {*}
payload\r\n * @returns {payload is Date}\r\n */\r\nfunction isDate(payload) {\r\n  return getType(payload) ===
'Date' && !isNaN(payload);\r\n}\r\n/**\r\n * Returns whether the payload is a Blob\r\n * @param {*}
payload\r\n * @returns {payload is Blob}\r\n */\r\nfunction isBlob(payload) {\r\n  return getType(payload) ===
'Blob';\r\n}\r\n/**\r\n * Returns whether the payload is a File\r\n * @param {*} payload\r\n * @returns
{payload is File}\r\n */\r\nfunction isFile(payload) {\r\n  return getType(payload) === 'File';\r\n}\r\n/**\r\n *
Returns whether the payload is a Promise\r\n * @param {*} payload\r\n * @returns {payload is
Promise<any>}\r\n */\r\nfunction isPromise(payload) {\r\n  return getType(payload) === 'Promise';\r\n}\r\n/**\r\n *
Returns whether the payload is an Error\r\n * @param {*} payload\r\n * @returns {payload is Error}\r\n
*/\r\nfunction isError(payload) {\r\n  return getType(payload) === 'Error';\r\n}\r\n/**\r\n * Returns whether the
payload is literally the value `NaN` (it's `NaN` and also a `number`)\r\n * @param {*} payload\r\n * @returns
{payload is typeof NaN}\r\n */\r\nfunction isNaNValue(payload) {\r\n  return getType(payload) === 'Number' &&
isNaN(payload);\r\n}\r\n/**\r\n * Returns whether the payload is a primitive type (eg. Boolean | Null | Undefined |
Number | String | Symbol)\r\n * @param {*} payload\r\n * @returns {(payload is boolean | null | undefined |
number | string | symbol)}\r\n */\r\nfunction isPrimitive(payload) {\r\n  return (isBoolean(payload) ||\r\n
isNull(payload) ||\r\n  isUndefined(payload) ||\r\n  isNumber(payload) ||\r\n  isString(payload) ||\r\n
isSymbol(payload));\r\n}\r\n/**\r\n * Returns true whether the payload is null or undefined\r\n * @param {*}
payload\r\n * @returns {(payload is null | undefined)}\r\n */\r\nfunction isNullOrUndefined(payload) {\r\n  return
isNull(payload) || isUndefined(payload);\r\n}\r\n/**\r\n * Does a generic check to check that the given payload is of
a given type.\r\n * In cases like Number, it will return true for NaN as NaN is a Number (thanks javascript!);\r\n * It
will, however, differentiate between object and null\r\n * @template T\r\n * @param {*} payload\r\n *
@param {T} type\r\n * @throws {TypeError} Will throw type error if type is an invalid type\r\n * @returns
{payload is T}\r\n */\r\nfunction isType(payload, type) {\r\n  if (!(type instanceof Function)) {\r\n    throw new
TypeError('Type must be a function');\r\n  }\r\n  if (!Object.prototype.hasOwnProperty.call(type, 'prototype'))
{\r\n    throw new TypeError('Type is not a class');\r\n  }\r\n  // Classes usually have names (as functions
usually have names)\r\n  var name = type.name;\r\n  return getType(payload) === name || Boolean(payload &&
payload.constructor === type);\r\n}\r\n\nexport { getType, isAnyObject, isArray, isBlob, isBoolean, isDate,
isEmptyArray, isEmptyObject, isEmptyString, isError, isFile, isFullArray, isFullString, isFunction, isMap,
isNaNValue, isNull, isNullOrUndefined, isNumber, isObject, isObjectLike, isPlainObject, isPrimitive, isPromise,
isRegExp, isSet, isString, isSymbol, isType, isUndefined, isWeakMap, isWeakSet };\n", "import { isArray,
isPlainObject } from 'is-what';\n\n/****\r\nCopyright (c)\r\nMicrosoft Corporation. All rights reserved.\r\nLicensed under the Apache License, Version 2.0 (the \"License\");\r\nyou may not use\r\nthis file except in compliance with the License. You may obtain a copy of the\r\nLicense at\r\nhttp://www.apache.org/licenses/LICENSE-2.0\r\n\r\nTHIS CODE IS PROVIDED ON AN *AS IS* BASIS,\r\nWITHOUT WARRANTIES OR CONDITIONS OF ANY\r\nKIND, EITHER EXPRESS OR IMPLIED,\r\nINCLUDING WITHOUT LIMITATION ANY IMPLIED\r\nWARRANTIES OR CONDITIONS OF TITLE,\r\nFITNESS FOR A PARTICULAR PURPOSE,\r\n\r\nMERCHANTABILITY OR NON-INFRINGEMENT.\r\n\r\n\r\nSee\r\nthe Apache Version 2.0 License for specific language governing permissions\r\nand limitations under the\r\nLicense.\r\n\r\n****\r\n\r\n*/\r\n\r\nfunction __spreadArrays() {\r\n  for (var s = 0, i = 0, il = arguments.length; i < il; i++) s +=
arguments[i].length;\r\n  for (var r = Array(s), k = 0, i = 0; i < il; i++)\r\n    for (var a = arguments[i], j = 0, jl =
a.length; j < jl; j++, k++)\r\n      r[k] = a[j];\r\n  return r;\r\n}\r\n\r\nfunction assignProp(carry, key, newVal,
originalObject, includeNonenumerable) {\r\n  var propType = {}.propertyIsEnumerable.call(originalObject,
key)\r\n    ? 'enumerable'\r\n    : 'nonenumerable';\r\n  if (propType === 'enumerable')\r\n    carry[key] =
newVal;\r\n  if (includeNonenumerable && propType === 'nonenumerable') {\r\n

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currentFilename;\n\n this.message = e.message;\n this.stack = e.stack;\n\n if (fileContentMap && filename)
{\n  const input = fileContentMap.contents[filename];\n  const loc = utils.getLocation(e.index, input);\n  var line = loc.line;\n  const col = loc.column;\n  const callLine = e.call && utils.getLocation(e.call,
input).line;\n  const lines = input ? input.split('\n') : '';\n  this.type = e.type || 'Syntax';\n  this.filename =
filename;\n  this.index = e.index;\n  this.line = typeof line === 'number' ? line + 1 : null;\n  this.column =
col;\n\n  if (!(this.line && this.stack)) {\n    const found = this.stack.match(anonymousFunc);\n\n    /**\n    * We have to figure out how this environment stringifies anonymous functions\n    * so we can
correctly map plugin errors.\n    * \n    * Note, in Node 8, the output of anonymous funcs varied based on
parameters\n    * being present or not, so we inject dummy params.\n    */\n    const func = new
Function('a', 'throw new Error()');\n    let lineAdjust = 0;\n    try {\n      func();\n    } catch (e)
{\n      const match = e.stack.match(anonymousFunc);\n      var line = parseInt(match[2]);\n      lineAdjust = 1 - line;\n    }\n\n    if (found) {\n      if (found[2]) {\n        this.line =
parseInt(found[2]) + lineAdjust;\n      }\n      if (found[3]) {\n        this.column =
parseInt(found[3]);\n      }\n    }\n\n    this.callLine = callLine + 1;\n    this.callExtract =
lines[callLine];\n\n    this.extract = [\n      lines[this.line - 2],\n      lines[this.line - 1],\n      lines[this.line]\n    ];\n  }\n\n  if (typeof Object.create === 'undefined') {\n    const F = function () {};\n    F.prototype = Error.prototype;\n    LessError.prototype = new F();\n  } else {\n    LessError.prototype =
Object.create(Error.prototype);\n  }\n\n  LessError.prototype.constructor = LessError;\n\n  /**\n  * An overridden
version of the default Object.prototype.toString\n  * which uses additional information to create a helpful message.\n
*\n  * @param {Object} options\n  * @returns {string}\n  */\n  LessError.prototype.toString = function(options) {\n
options = options || {};\n\n  let message = '';\n  const extract = this.extract || [];\n  let error = [];\n  let stylize =
function (str) { return str; };\n  if (options.stylize) {\n    const type = typeof options.stylize;\n    if (type !==
'function') {\n      throw Error(`options.stylize should be a function, got a ${type}!`);\n    }\n    stylize =
options.stylize;\n  }\n\n  if (this.line !== null) {\n    if (typeof extract[0] === 'string') {\n
error.push(stylize(`${this.line - 1} ${extract[0]}`, 'grey'));\n    }\n\n    if (typeof extract[1] === 'string') {\n
let errorTxt = `${this.line}`;\n    if (extract[1]) {\n      errorTxt += extract[1].slice(0, this.column) +\n
stylize(stylize(stylize(extract[1].substr(this.column, 1), 'bold') +\n      extract[1].slice(this.column
+ 1, 'red'), 'inverse'));\n    }\n    error.push(errorTxt);\n    }\n\n    if (typeof extract[2] === 'string') {\n
error.push(stylize(`${this.line + 1} ${extract[2]}`, 'grey'));\n    }\n    error = `${error.join('\n') + stylize(",
'reset')}\n`;\n  }\n\n  message += stylize(`${this.type}Error: ${this.message}`, 'red');\n  if (this.filename) {\n
message += stylize(' in ', 'red') + this.filename;\n  }\n  if (this.line) {\n    message += stylize(` on line
${this.line}, column ${this.column + 1}` , 'grey');\n  }\n\n  message += `\n\n${error}`;\n\n  if (this.callLine) {\n
message += `${stylize('from ', 'red') + (this.filename || '')}\n`;\n    message += `${stylize(this.callLine, 'grey')}
${this.callExtract}\n`;\n  }\n\n  return message;\n};\n\nexport default LessError;";\nimport Node from
'./node';\nimport Element from './element';\nimport LessError from './less-error';\n\nconst Selector =
function(elements, extendList, condition, index, currentFileInfo, visibilityInfo) {\n  this.extendList = extendList;\n
this.condition = condition;\n  this.evaldCondition = !condition;\n  this._index = index;\n  this._fileInfo =
currentFileInfo;\n  this.elements = this.getElements(elements);\n  this.mixinElements_ = undefined;\n  this.copyVisibilityInfo(visibilityInfo);\n  this.setParent(this.elements, this);\n\n  Selector.prototype =
Object.assign(new Node(), {\n    type: 'Selector',\n\n    accept(visitor) {\n      if (this.elements) {\n
this.elements = visitor.visitArray(this.elements);\n      }\n      if (this.extendList) {\n        this.extendList =
visitor.visitArray(this.extendList);\n      }\n      if (this.condition) {\n        this.condition =
visitor.visit(this.condition);\n      }\n    },\n\n    createDerived(elements, extendList, evaldCondition) {\n      elements = this.getElements(elements);\n      const newSelector = new Selector(elements, extendList ||
this.extendList, null, this.getIndex(), this.fileInfo(), this.visibilityInfo());\n      newSelector.evaldCondition
= (evaldCondition !== null) ? evaldCondition : this.evaldCondition;\n      newSelector.mediaEmpty =
this.mediaEmpty;\n      return newSelector;\n    },\n\n    getElements(els) {\n      if (!els) {\n        return [new
Element("", '&', false, this._index, this._fileInfo)];\n      }\n      if (typeof els === 'string') {\n

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this.parse.parseNode(\n      els, \n      ['selector'],\n      this._index, \n      this._fileInfo, \n      function(err, result) {\n        if (err) {\n          throw new LessError({\n            index: err.index,\n            message: err.message\n          }, this.parse.imports, this._fileInfo.filename);\n        }\n        els = result[0].elements;\n      });\n      return els;\n    },\n    createEmptySelectors() {\n      const el = new Element('&', false, this._index, this._fileInfo), sels = [new Selector([el], null, null, this._index, this._fileInfo);\n      sels[0].mediaEmpty = true;\n      return sels;\n    },\n    match(other) {\n      const elements = this.elements;\n      const len = elements.length;\n      let olen;\n      let i;\n      other = other.mixinElements();\n      olen = other.length;\n      if (olen === 0 || len < olen) {\n        return 0;\n      } else {\n        for (i = 0; i < olen; i++) {\n          if (elements[i].value !== other[i]) {\n            return 0;\n          }\n        }\n        return olen; // return number of matched elements\n      },\n    mixinElements() {\n      if (this.mixinElements_) {\n        return this.mixinElements_;\n      }\n      let elements = this.elements.map(function(v) {\n        return v.combinator.value + (v.value.value || v.value);\n      }).join("").match(/[\&#\*\|\.\|w-]([\w-]|\(|\)|\.)*/g);\n      if (elements) {\n        if (elements[0] === '&') {\n          elements.shift();\n        } else {\n          elements = [];\n        }\n        return (this.mixinElements_ = elements);\n      },\n    isJustParentSelector() {\n      return !this.mediaEmpty && this.elements.length === 1 && this.elements[0].value === '&' && (this.elements[0].combinator.value === '' || this.elements[0].combinator.value === '');\n    },\n    eval(context) {\n      const evaldCondition = this.condition && this.condition.eval(context);\n      let elements = this.elements;\n      let extendList = this.extendList;\n      elements = elements && elements.map(function (e) { return e.eval(context); });\n      extendList = extendList && extendList.map(function(extend) { return extend.eval(context); });\n      return this.createDerived(elements, extendList, evaldCondition);\n    },\n    genCSS(context, output) {\n      let i, element;\n      if (!context || !context.firstSelector) && this.elements[0].combinator.value === "" {\n        output.add(' ', this.fileInfo(), this.getIndex());\n      }\n      for (i = 0; i < this.elements.length; i++) {\n        element = this.elements[i];\n        element.genCSS(context, output);\n      }\n    },\n    getIsOutput() {\n      return this.evaldCondition;\n    }\n  });\n\nexport default Selector;\n\n", "import Node from './node';\n\nconst Value = function(value) {\n  if (!value) {\n    throw new Error("Value requires an array argument");\n  }\n  if (!Array.isArray(value)) {\n    this.value = [ value ];\n  }\n  else {\n    this.value = value;\n  }\n};\n\nValue.prototype = Object.assign(new Node(), {\n  type: 'Value',\n\n  accept(visitor) {\n    if (this.value) {\n      this.value = visitor.visitArray(this.value);\n    }\n  },\n\n  eval(context) {\n    if (this.value.length === 1) {\n      return this.value[0].eval(context);\n    }\n    else {\n      return new Value(this.value.map(function (v) {\n        return v.eval(context);\n      }));\n    }\n  },\n\n  genCSS(context, output) {\n    let i;\n    for (i = 0; i < this.value.length; i++) {\n      this.value[i].genCSS(context, output);\n      if (i + 1 < this.value.length) {\n        output.add((context && context.compress) ? ' : ' : ',');\n      }\n    }\n  }\n});\n\nexport default Value;\n\n", "import Node from './node';\n\nconst Keyword = function(value) {\n  this.value = value;\n};\n\nKeyword.prototype = Object.assign(new Node(), {\n  type: 'Keyword',\n\n  genCSS(context, output) {\n    if (this.value === '%') {\n      throw { type: 'Syntax', message: 'Invalid % without number' }; \n    }\n    output.add(this.value);\n  }\n});\n\nKeyword.True = new Keyword('true');\nKeyword.False = new Keyword('false');\n\nexport default Keyword;\n\n", "import Node from './node';\n\nconst Anonymous = function(value, index, currentFileInfo, mapLines, rulesetLike, visibilityInfo) {\n  this.value = value;\n  this._index = index;\n  this._fileInfo = currentFileInfo;\n  this.mapLines = mapLines;\n  this.rulesetLike = (typeof rulesetLike === 'undefined') ? false : rulesetLike;\n\n  this.allowRoot = true;\n  this.copyVisibilityInfo(visibilityInfo);\n}\n\nAnonymous.prototype = Object.assign(new Node(), {\n  type: 'Anonymous',\n\n  eval() {\n    return new Anonymous(this.value, this._index, this._fileInfo, this.mapLines, this.rulesetLike, this.visibilityInfo);\n  },\n\n  compare(other) {\n    return other.toCSS() && this.toCSS() === other.toCSS() ? 0 : undefined;\n  },\n\n  isRulesetLike() {\n    return this.rulesetLike;\n  },\n\n  genCSS(context, output) {\n    this.nodeVisible = Boolean(this.value);\n    if (this.nodeVisible) {\n      output.add(this.value, this._fileInfo, this._index, this.mapLines);\n    }\n  }\n});\n\nexport default Anonymous;\n\n", "import Node from './node';\nimport Value from './value';\nimport Keyword from './keyword';\nimport Anonymous from './anonymous';\nimport * as Constants from './constants';\nconst MATH =

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./constants';\n\nconst copyFromOriginal = function copyFromOriginal(original, destination, propertiesToCopy) {\n
if (!original) { return; }\n\n for (let i = 0; i < propertiesToCopy.length; i++) {\n    if\n
(original.hasOwnProperty(propertiesToCopy[i])) {\n        destination[propertiesToCopy[i]] =\n
original[propertiesToCopy[i]];\n    }\n    }\n};\n\n/*\n parse is used whilst parsing\n */\n\nconst\n
parseCopyProperties = [\n // options\n 'paths', // option - unmodified - paths to search for imports on\n
'rewriteUrls', // option - whether to adjust URL's to be relative\n 'rootpath', // option - rootpath to append to\n
URL's\n 'strictImports', // option -\n 'insecure', // option - whether to allow imports from insecure ssl\n
hosts\n 'dumpLineNumbers', // option - whether to dump line numbers\n 'compress', // option - whether to\n
compress\n 'syncImport', // option - whether to import synchronously\n 'chunkInput', // option - whether\n
to chunk input. more performant but causes parse issues.\n 'mime', // browser only - mime type for sheet\n
import\n 'useFileCache', // browser only - whether to use the per file session cache\n // context\n
'processImports', // option & context - whether to process imports. if false then imports will not be imported.\n //\n
Used by the import manager to stop multiple import visitors being created.\n 'pluginManager' // Used as the\n
plugin manager for the session\n];\n\n\ncontexts.Parse = function(options) {\n copyFromOriginal(options, this,\n
parseCopyProperties);\n\n if (typeof this.paths === 'string') { this.paths = [this.paths]; }\n};\n\n\nconst\n
evalCopyProperties = [\n 'paths', // additional include paths\n 'compress', // whether to compress\n
'math', // whether math has to be within parenthesis\n 'strictUnits', // whether units need to evaluate\n
correctly\n 'sourceMap', // whether to output a source map\n 'importMultiple', // whether we are currently\n
importing multiple copies\n 'urlArgs', // whether to add args into url tokens\n 'javascriptEnabled', // option\n
- whether Inline JavaScript is enabled. if undefined, defaults to false\n 'pluginManager', // Used as the plugin\n
manager for the session\n 'importantScope', // used to bubble up !important statements\n 'rewriteUrls' //\n
option - whether to adjust URL's to be relative\n];\n\n\ncontexts.Eval = function(options, frames) {\n\n
copyFromOriginal(options, this, evalCopyProperties);\n\n if (typeof this.paths === 'string') { this.paths =\n
[this.paths]; }\n\n this.frames = frames || [];\n\n this.importantScope = this.importantScope ||\n
[];\n};\n\n\ncontexts.Eval.prototype.enterCalc = function () {\n if (!this.calcStack) {\n this.calcStack = [];\n
}\n\n this.calcStack.push(true);\n\n this.inCalc = true;\n};\n\n\ncontexts.Eval.prototype.exitCalc = function () {\n\n
this.calcStack.pop();\n\n if (!this.calcStack.length) {\n this.inCalc = false;\n
}\n};\n\n\ncontexts.Eval.prototype.inParenthesis = function () {\n if (!this.parensStack) {\n this.parensStack =\n
[];\n }\n\n this.parensStack.push(true);\n};\n\n\ncontexts.Eval.prototype.outOfParenthesis = function () {\n\n
this.parensStack.pop();\n};\n\n\ncontexts.Eval.prototype.inCalc = false;\n\ncontexts.Eval.prototype.mathOn =\n
true;\n\ncontexts.Eval.prototype.isMathOn = function (op) {\n if (!this.mathOn) {\n return false;\n
}\n\n if (op === '/' && this.math !== Constants.Math.ALWAYS && (!this.parensStack || !this.parensStack.length)) {\n\n
return false;\n }\n\n if (this.math > Constants.Math.PARENS_DIVISION) {\n return this.parensStack &&\n
this.parensStack.length;\n }\n\n return true;\n};\n\n\ncontexts.Eval.prototype.pathRequiresRewrite = function (path)\n
{\n\n const isRelative = this.rewriteUrls === Constants.RewriteUrls.LOCAL ? isPathLocalRelative :\n
isPathRelative;\n\n return isRelative(path);\n};\n\n\ncontexts.Eval.prototype.rewritePath = function (path, rootpath)\n
{\n\n let newPath;\n\n rootpath = rootpath || '';\n\n newPath = this.normalizePath(rootpath + path);\n\n // If a path\n
was explicit relative and the rootpath was not an absolute path\n // we must ensure that the new path is also\n
explicit relative.\n\n if (isPathLocalRelative(path) &&\n isPathRelative(rootpath) &&\n
isPathLocalRelative(newPath) === false) {\n\n newPath = `.${newPath}`;\n }\n\n return\n
newPath;\n};\n\n\ncontexts.Eval.prototype.normalizePath = function (path) {\n\n const segments =\n
path.split('/').reverse();\n\n let segment;\n\n path = [];\n\n while (segments.length !== 0) {\n\n segment =\n
segments.pop();\n\n switch ( segment ) {\n\n case '':\n break;\n\n case '..':\n if\n
((path.length === 0) || (path[path.length - 1] === '..')) {\n\n path.push( segment );\n\n } else {\n\n\n
path.pop();\n\n }\n\n break;\n\n default:\n\n path.push(segment);\n\n break;\n\n }\n\n }\n\n return path.join('/');\n};\n\n\nfunction isPathRelative(path) {\n return !/^(?:[a-z-]\n
+:\|\\|#)/i.test(path);\n}\n\n\nfunction isPathLocalRelative(path) {\n return path.charAt(0) === '.';\n}\n\n\n// todo - do\n
the same for the toCSS ?\n", "function makeRegistry( base ) {\n return {\n _data: {},\n add:\n

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function(name, func) {\n      // precautionary case conversion, as later querying of\n      // the registry by\nfunction-caller uses lower case as well.\n      name = name.toLowerCase();\n      if\n(this._data.hasOwnProperty(name)) {\n      // TODO warn\n      }\n      this._data[name] = func;\n},\n  addMultiple: function(functions) {\n      Object.keys(functions).forEach(\n      name => {\n      this.add(name, functions[name]);\n      });\n  },\n  get: function(name) {\n      return\nthis._data[name] || ( base && base.get( name ));\n  },\n  getLocalFunctions: function() {\n      return\nthis._data;\n  },\n  inherit: function() {\n      return makeRegistry( this );\n  },\n  create:\nfunction(base) {\n      return makeRegistry(base);\n  }\n};\n\nexport default makeRegistry( null\n);","import Keyword from './tree/keyword';\n\nconst defaultFunc = {\n  eval: function () {\n    const v =\nthis.value_;\n    const e = this.error_;\n    if (e) {\n      throw e;\n    }\n    if (v != null) {\n      return\nv ? Keyword.True : Keyword.False;\n    }\n  },\n  value: function (v) {\n    this.value_ = v;\n  },\n  error:\nfunction (e) {\n    this.error_ = e;\n  },\n  reset: function () {\n    this.value_ = this.error_ = null;\n  }\n};\n\nexport default defaultFunc;\n\nimport Node from './node';\nimport Declaration from './declaration';\nimport Keyword from './keyword';\nimport Comment from './comment';\nimport Paren from './paren';\nimport Selector from\n './selector';\nimport Element from './element';\nimport Anonymous from './anonymous';\nimport contexts from\n './contexts';\nimport globalFunctionRegistry from './functions/function-registry';\nimport defaultFunc from\n './functions/default';\nimport getDebugInfo from './debug-info';\nimport * as utils from './utils';\n\nconst Ruleset =\nfunction(selectors, rules, strictImports, visibilityInfo) {\n  this.selectors = selectors;\n  this.rules = rules;\n  this._lookups = {};\n  this._variables = null;\n  this._properties = null;\n  this.strictImports = strictImports;\n  this.copyVisibilityInfo(visibilityInfo);\n  this.allowRoot = true;\n\n  this.setParent(this.selectors, this);\n  this.setParent(this.rules, this);\n\n  Ruleset.prototype = Object.assign(new Node(), {\n    type: 'Ruleset',\n    isRuleset: true,\n    isRulesetLike() { return true; },\n    accept(visitor) {\n      if (this.paths) {\n        this.paths\n= visitor.visitArray(this.paths, true);\n      } else if (this.selectors) {\n        this.selectors =\nvisitor.visitArray(this.selectors);\n      }\n      if (this.rules && this.rules.length) {\n        this.rules =\nvisitor.visitArray(this.rules);\n      }\n    },\n    eval(context) {\n      const that = this;\n      let selectors;\n      let\nselCnt;\n      let selector;\n      let i;\n      let hasVariable;\n      let hasOnePassingSelector = false;\n\n      if\n(this.selectors && (selCnt = this.selectors.length)) {\n        selectors = new Array(selCnt);\n        defaultFunc.error({\n          type: 'Syntax',\n          message: 'it is currently only allowed in parametric mixin\nguards,'\n        });\n\n        for (i = 0; i < selCnt; i++) {\n          selector = this.selectors[i].eval(context);\n          for (var j = 0; j < selector.elements.length; j++) {\n            if (selector.elements[j].isVariable) {\n              hasVariable = true;\n              break;\n            }\n          }\n          selectors[i] = selector;\n          if (selector.evaldCondition) {\n            hasOnePassingSelector = true;\n          }\n        }\n        if\n(hasVariable) {\n          const toParseSelectors = new Array(selCnt);\n          for (i = 0; i < selCnt; i++) {\n            selector = selectors[i];\n            toParseSelectors[i] = selector.toCSS(context);\n          }\n          this.parse.parseNode(\n            toParseSelectors.join(','),\n            ["selectors"],\n            selectors[0].getIndex(),\n            selectors[0].fileInfo(),\n            function(err, result) {\n              if\n(result) {\n                selectors = utils.flattenArray(result);\n              }\n            });\n          }\n          defaultFunc.reset();\n        } else {\n          hasOnePassingSelector = true;\n        }\n\n        let rules = this.rules\n? utils.copyArray(this.rules) : null;\n        const ruleset = new Ruleset(selectors, rules, this.strictImports,\nthis.visibilityInfo());\n        let rule;\n        let subRule;\n\n        ruleset.originalRuleset = this;\n        ruleset.root =\nthis.root;\n        ruleset.firstRoot = this.firstRoot;\n        ruleset.allowImports = this.allowImports;\n\n        if\n(this.debugInfo) {\n          ruleset.debugInfo = this.debugInfo;\n        }\n\n        if (!hasOnePassingSelector) {\n          rules.length = 0;\n        }\n\n        // inherit a function registry from the frames stack when possible;\n        //\notherwise from the global registry\n        ruleset.functionRegistry = (function (frames) {\n          let i = 0;\n          const n = frames.length;\n          let found;\n          for ( ; i !== n ; ++i ) {\n            found = frames[ i\n].functionRegistry;\n            if ( found ) { return found; }\n          }\n          return globalFunctionRegistry;\n        })(context.frames)).inherit();\n\n        // push the current ruleset to the frames stack\n        const ctxFrames =\ncontext.frames;\n        ctxFrames.unshift(ruleset);\n\n        // current selectors\n        let ctxSelectors =

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context.selectors;\n    if (!ctxSelectors) {\n        context.selectors = ctxSelectors = [];\n    }\n    ctxSelectors.unshift(this.selectors);\n    // Evaluate imports\n    if (ruleset.root || ruleset.allowImports ||\n    !ruleset.strictImports) {\n        ruleset.evalImports(context);\n    }\n    // Store the frames around mixin\n    definitions,\n    // so they can be evaluated like closures when the time comes.\n    const rsRules =\n    ruleset.rules;\n    for (i = 0; (rule = rsRules[i]); i++) {\n        if (rule.evalFirst) {\n            rsRules[i] =\n            rule.eval(context);\n        }\n    }\n    const mediaBlockCount = (context.mediaBlocks &&\n    context.mediaBlocks.length) || 0;\n    // Evaluate mixin calls.\n    for (i = 0; (rule = rsRules[i]); i++) {\n    if (rule.type === 'MixinCall') {\n        /* jshint loopfunc:true */\n        rules =\n        rule.eval(context).filter(function(r) {\n            if ((r instanceof Declaration) && r.variable) {\n                //\n                do not pollute the scope if the variable is\n                // already there. consider returning false here\n                // but we need a way to \"return\" variable from mixins\n                return !(ruleset.variable(r.name));\n            }\n            return true;\n        });\n        rsRules.splice.apply(rsRules, [i, 1].concat(rules));\n        i += rules.length - 1;\n        ruleset.resetCache();\n    } else if (rule.type === 'VariableCall') {\n    /* jshint loopfunc:true */\n        rules = rule.eval(context).rules.filter(function(r) {\n            if ((r instanceof\n            Declaration) && r.variable) {\n                // do not pollute the scope at all\n                return false;\n            }\n            return true;\n        });\n        rsRules.splice.apply(rsRules, [i, 1].concat(rules));\n        i += rules.length - 1;\n        ruleset.resetCache();\n    }\n    }\n    // Evaluate everything else\n    for (i = 0; (rule = rsRules[i]); i++) {\n        if (!rule.evalFirst) {\n            rsRules[i] = rule = rule.eval ?\n            rule.eval(context) : rule;\n        }\n    }\n    // Evaluate everything else\n    for (i = 0; (rule = rsRules[i];\n    i++) {\n        // for rulesets, check if it is a css guard and can be removed\n        if (rule instanceof Ruleset &&\n        rule.selectors && rule.selectors.length === 1) {\n            // check if it can be folded in (e.g. & where)\n            if (rule.selectors[0] && rule.selectors[0].isJustParentSelector()) {\n                rsRules.splice(i--, 1);\n            }\n            for (var j = 0; (subRule = rule.rules[j]); j++) {\n                if (subRule instanceof Node) {\n                    subRule.copyVisibilityInfo(rule.visibilityInfo());\n                    if (!(subRule instanceof Declaration) ||\n                    !subRule.variable) {\n                        rsRules.splice(++i, 0, subRule);\n                    }\n                }\n            }\n        }\n    }\n    // Pop the stack\n    ctxFrames.shift();\n    ctxSelectors.shift();\n    if (context.mediaBlocks) {\n        for (i = mediaBlockCount; i <\n        context.mediaBlocks.length; i++) {\n            context.mediaBlocks[i].bubbleSelectors(selectors);\n        }\n    }\n    return ruleset;\n    },\n    evalImports(context) {\n        const rules = this.rules;\n        let i;\n        let\n        importRules;\n        if (!rules) { return; }\n        for (i = 0; i < rules.length; i++) {\n            if (rules[i].type ===\n            'Import') {\n                importRules = rules[i].eval(context);\n                if (importRules && (importRules.length ||\n                importRules.length === 0)) {\n                    rules.splice.apply(rules, [i, 1].concat(importRules));\n                    i +=\n                    importRules.length - 1;\n                } else {\n                    rules.splice(i, 1, importRules);\n                }\n            }\n        }\n        this.resetCache();\n    },\n    makeImportant() {\n        const result = new Ruleset(this.selectors,\n        this.rules.map(function (r) {\n            if (r.makeImportant) {\n                return r.makeImportant();\n            } else {\n                return r;\n            }\n        }), this.strictImports, this.visibilityInfo());\n        return result;\n    },\n    matchArgs(args) {\n        return !args || args.length === 0;\n    },\n    // lets you call a css selector with a guard\n    matchCondition(args, context) {\n        const lastSelector = this.selectors[this.selectors.length - 1];\n        if\n        (!lastSelector.evaldCondition) {\n            return false;\n        }\n        if (lastSelector.condition &&\n        !lastSelector.condition.eval(\n        new contexts.Eval(context,\n        context.frames))) {\n            return\n            false;\n        }\n        return true;\n    },\n    resetCache() {\n        this._rulesets = null;\n        this._variables = null;\n        this._properties = null;\n        this._lookups = {};\n    },\n    variables() {\n        if (!this._variables) {\n            this._variables = !this.rules ? {} : this.rules.reduce(function (hash, r) {\n                if (r instanceof Declaration &&\n                r.variable === true) {\n                    hash[r.name] = r;\n                }\n            }, {});\n            // when evaluating variables in an\n            import statement, imports have not been eval'd\n            // so we need to go inside import statements.\n            //\n            guard against root being a string (in the case of inlined less)\n            if (r.type === 'Import' && r.root &&\n            r.root.variables) {\n                const vars = r.root.variables();\n                for (const name in vars) {\n                    if (vars.hasOwnProperty(name)) {\n                        hash[name] = r.root.variable(name);\n                    }\n                }\n            }\n        }\n    }\n}

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    }\n        }\n        return hash;\n    }, {});\n    }\n    return this._variables;\n    },\n\n    properties() {\n        if (!this._properties) {\n            this._properties = !this.rules ? {} : this.rules.reduce(function\n            (hash, r) {\n                if (r instanceof Declaration && r.variable !== true) {\n                    const name =\n                    (r.name.length === 1) && (r.name[0] instanceof Keyword) ?\n                    r.name[0].value : r.name;\n                    // Properties don't overwrite as they can merge\n                    if (!hash[`${name}`]) {\n                        hash[`${name}`] = [ r ];\n                    }\n                    else {\n                        hash[`${name}`].push(r);\n                    }\n                }\n                return hash;\n            }, {});\n        }\n        return this._properties;\n    },\n\n    variable(name) {\n        const decl = this.variables()[name];\n        if (decl) {\n            return this.parseValue(decl);\n        }\n    },\n\n    property(name) {\n        const decl = this.properties()[name];\n        if (decl) {\n            return\n            this.parseValue(decl);\n        }\n    },\n\n    lastDeclaration() {\n        for (let i = this.rules.length; i > 0; i--) {\n            const decl = this.rules[i - 1];\n            if (decl instanceof Declaration) {\n                return this.parseValue(decl);\n            }\n        }\n    },\n\n    parseValue(toParse) {\n        const self = this;\n        function transformDeclaration(decl) {\n            if (decl.value instanceof Anonymous && !decl.parsed) {\n                if (typeof decl.value.value === 'string')\n                {\n                    this.parse.parseNode(\n                        decl.value.value,\n                        ['value', 'important'],\n                        decl.value.getIndex(),\n                        decl.fileInfo(),\n                        function(err, result) {\n                            if (err) {\n                                decl.parsed = true;\n                            }\n                            if (result) {\n                                decl.value = result[0];\n                                decl.important = result[1] || '';\n                                decl.parsed =\n                                true;\n                            }\n                        });\n                }\n                else {\n                    decl.parsed = true;\n                }\n                return decl;\n            }\n            else {\n                return decl;\n            }\n        }\n        if\n        (!Array.isArray(toParse)) {\n            return transformDeclaration.call(self, toParse);\n        }\n        else {\n            const nodes = [];\n            toParse.forEach(function(n) {\n                nodes.push(transformDeclaration.call(self, n));\n            });\n            return nodes;\n        }\n    },\n\n    rulesets() {\n        if (!this.rules) {\n            return [];\n        }\n        const\n        filtRules = [];\n        const rules = this.rules;\n        let i;\n        let rule;\n        for (i = 0; (rule = rules[i]); i++) {\n            if (rule.isRuleset) {\n                filtRules.push(rule);\n            }\n        }\n        return filtRules;\n    },\n\n    prependRule(rule) {\n        const rules = this.rules;\n        if (rules) {\n            rules.unshift(rule);\n        }\n        else {\n            this.rules = [ rule ];\n        }\n        this.setParent(rule, this);\n    },\n\n    find(selector, self, filter) {\n        self = self\n        || this;\n        const rules = [];\n        let match;\n        let foundMixins;\n        const key = selector.toCSS();\n        if\n        (key in this._lookups) {\n            return this._lookups[key];\n        }\n        this.rulesets().forEach(function (rule) {\n            if (rule\n            !== self) {\n                for (let j = 0; j < rule.selectors.length; j++) {\n                    match =\n                    selector.match(rule.selectors[j]);\n                    if (match) {\n                        if (selector.elements.length > match) {\n                            if (!filter || filter(rule)) {\n                                foundMixins = rule.find(new\n                                Selector(selector.elements.slice(match)), self, filter);\n                                for (let i = 0; i < foundMixins.length; ++i)\n                                {\n                                    foundMixins[i].path.push(rule);\n                                }\n                                Array.prototype.push.apply(rules, foundMixins);\n                            }\n                            }\n                            else {\n                                break;\n                            }\n                        }\n                    }\n                }\n            }\n            this._lookups[key] = rules;\n            return rules;\n        },\n\n    genCSS(context, output) {\n        let i;\n        let\n        j;\n        const charsetRuleNodes = [];\n        let ruleNodes = [];\n        let // Line number debugging\n        debugInfo;\n        let rule;\n        let path;\n        context.tabLevel = (context.tabLevel || 0);\n        if (!this.root)\n        {\n            context.tabLevel++;\n        }\n        const tabRuleStr = context.compress ? " : Array(context.tabLevel +\n        1).join(' ');\n        const tabSetStr = context.compress ? " : Array(context.tabLevel).join(' ');\n        let sep;\n        let\n        charsetNodeIndex = 0;\n        let importNodeIndex = 0;\n        for (i = 0; (rule = this.rules[i]); i++) {\n            if\n            (rule instanceof Comment) {\n                if (importNodeIndex === i) {\n                    importNodeIndex++;\n                }\n                ruleNodes.push(rule);\n            }\n            else if (rule.isCharset && rule.isCharset()) {\n                ruleNodes.splice(charsetNodeIndex, 0, rule);\n                charsetNodeIndex++;\n                importNodeIndex++;\n            }\n            else if (rule.type === 'Import') {\n                ruleNodes.splice(importNodeIndex, 0, rule);\n                importNodeIndex++;\n            }\n            else {\n                ruleNodes.push(rule);\n            }\n        }\n        ruleNodes =\n        charsetRuleNodes.concat(ruleNodes);\n        // If this is the root node, we don't render\n        // a selector, or {\n        if (!this.root) {\n            debugInfo = getDebugInfo(context, this, tabSetStr);\n            if (debugInfo) {\n
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addPath.slice(1);\n          restOfPath = restOfPath.map(function (selector) {\n          return
selector.createDerived(selector.elements, []);\n          });\n          newSelectorPath =
newSelectorPath.concat(restOfPath);\n          }\n          return newSelectorPath;\n          }\n          // joins selector
path from `beginningPath` with every selector path in `addPaths` array\n          // `replacedElement` contains element
that is being replaced by `addPath`\n          // returns array with all concatenated paths\n          function
addAllReplacementsIntoPath( beginningPath, addPaths, replacedElement, originalSelector, result) {\n          let j;\n
          for (j = 0; j < beginningPath.length; j++) {\n          const newSelectorPath =
addReplacementIntoPath(beginningPath[j], addPaths, replacedElement, originalSelector);\n
result.push(newSelectorPath);\n          }\n          return result;\n          }\n          function
mergeElementsOnToSelectors(elements, selectors) {\n          let i, sel;\n          if (elements.length === 0) {\n
return ;\n          }\n          if (selectors.length === 0) {\n          selectors.push([ new Selector(elements) ]);\n
return;\n          }\n          for (i = 0; (sel = selectors[i]); i++) {\n          // if the previous thing in sel is
a parent this needs to join on to it\n          if (sel.length > 0) {\n          sel[sel.length - 1] = sel[sel.length -
1].createDerived(sel[sel.length - 1].elements.concat(elements));\n          }\n          else {\n
sel.push(new Selector(elements));\n          }\n          }\n          }\n          // replace all parent selectors inside
`inSelector` by content of `context` array\n          // resulting selectors are returned inside `paths` array\n          // returns
true if `inSelector` contained at least one parent selector\n          function replaceParentSelector(paths, context,
inSelector) {\n          // The paths are [[Selector]]\n          // The first list is a list of comma separated selectors\n
// The inner list is a list of inheritance separated selectors\n          // e.g.\n          // .a, .b {\n          // .c {\n
// }\n          // }\n          // == [[.a] [.c]] [[.b] [.c]]\n          //\n          let i, j, k, currentElements, newSelectors,
selectorsMultiplied, sel, el, hadParentSelector = false, length, lastSelector;\n          function
findNestedSelector(element) {\n          let maybeSelector;\n          if (!(element.value instanceof Paren)) {\n
return null;\n          }\n          maybeSelector = element.value.value;\n          if (!(maybeSelector
instanceof Selector)) {\n          return null;\n          }\n          return maybeSelector;\n          }\n
// the elements from the current selector so far\n          currentElements = [];\n          // the current list of new
selectors to add to the path.\n          // We will build it up. We initiate it with one empty selector as we \"multiply\"\n
the new selectors\n          // by the parents\n          newSelectors = [\n          []\n          ];\n          for (i = 0;
(el = inSelector.elements[i]); i++) {\n          // non parent reference elements just get added\n          if (el.value
!== '&') {\n          const nestedSelector = findNestedSelector(el);\n          if (nestedSelector !== null) {\n
// merge the current list of non parent selector elements\n          // on to the current list of
selectors to add\n          mergeElementsOnToSelectors(currentElements, newSelectors);\n          }\n
const nestedPaths = [];\n          let replaced;\n          const replacedNewSelectors = [];\n
replaced = replaceParentSelector(nestedPaths, context, nestedSelector);\n          hadParentSelector =
hadParentSelector || replaced;\n          // the nestedPaths array should have only one member -
replaceParentSelector does not multiply selectors\n          for (k = 0; k < nestedPaths.length; k++) {\n
const replacementSelector = createSelector(createParenthesis(nestedPaths[k], el), el);\n
addAllReplacementsIntoPath(newSelectors, [replacementSelector], el, inSelector, replacedNewSelectors);\n
          }\n          newSelectors = replacedNewSelectors;\n          currentElements = [];\n          }\n
else {\n          currentElements.push(el);\n          }\n          } else {\n
hadParentSelector = true;\n          // the new list of selectors to add\n          selectorsMultiplied = [];\n
// merge the current list of non parent selector elements\n          // on to the current list of selectors to
add\n          mergeElementsOnToSelectors(currentElements, newSelectors);\n          // loop through
our current selectors\n          for (j = 0; j < newSelectors.length; j++) {\n          sel = newSelectors[j];\n
// if we don't have any parent paths, the & might be in a mixin so that it can be used\n          //
whether there are parents or not\n          if (context.length === 0) {\n          // the combinator
used on el should now be applied to the next element instead so that\n          // it is not lost\n
if (sel.length > 0) {\n          sel[0].elements.push(new Element(el.combinator, \" , el.isVariable,
el._index, el._fileInfo));\n          }\n          selectorsMultiplied.push(sel);\n          }\n

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assuming that there is only one rule at this point - that is how parser constructs the rule\n      return
Ruleset.prototype.find.apply(this.rules[0], arguments);\n    }\n  },\n\n  rulesets() {\n    if (this.rules) {\n      // assuming that there is only one rule at this point - that is how parser constructs the rule\n      return
Ruleset.prototype.rulesets.apply(this.rules[0]);\n    }\n  },\n\n  outputRuleset(context, output, rules) {\n    const ruleCnt = rules.length;\n    let i;\n    context.tabLevel = (context.tabLevel | 0) + 1;\n\n    //
Compressed\n    if (context.compress) {\n      output.add('{');\n      for (i = 0; i < ruleCnt; i++) {\n        rules[i].genCSS(context, output);\n      }\n      output.add('');\n      context.tabLevel--;\n      return;\n    }\n\n    // Non-compressed\n    const tabSetStr = `\\n${Array(context.tabLevel).join(' ')}`, tabRuleStr =
` ${tabSetStr} `;\n    if (!ruleCnt) {\n      output.add(` ${tabSetStr}`);\n    } else {\n      output.add(`
${tabRuleStr}`);\n      rules[0].genCSS(context, output);\n      for (i = 1; i < ruleCnt; i++) {\n
output.add(tabRuleStr);\n      rules[i].genCSS(context, output);\n    }\n    output.add(` ${tabSetStr}`);\n  }\n\n  context.tabLevel--;\n  });\n\nexport default AtRule;\n", "import
Node from './node';\nimport contexts from './contexts';\nimport * as utils from './utils';\n\nconst DetachedRuleset =
function(ruleset, frames) {\n  this.ruleset = ruleset;\n  this.frames = frames;\n  this.setParent(this.ruleset,
this);\n};\n\nDetachedRuleset.prototype = Object.assign(new Node(), {\n  type: 'DetachedRuleset',\n  evalFirst:
true,\n\n  accept(visitor) {\n    this.ruleset = visitor.visit(this.ruleset);\n  },\n\n  eval(context) {\n    const
frames = this.frames || utils.copyArray(context.frames);\n    return new DetachedRuleset(this.ruleset, frames);\n
  },\n\n  callEval(context) {\n    return this.ruleset.eval(this.frames ? new contexts.Eval(context,
this.frames.concat(context.frames)) : context);\n  });\n\nexport default DetachedRuleset;\n", "import Node from
 './node';\nimport unitConversions from './data/unit-conversions';\nimport * as utils from './utils';\n\nconst Unit =
function(numerator, denominator, backupUnit) {\n  this.numerator = numerator ? utils.copyArray(numerator).sort()
: [];\n  this.denominator = denominator ? utils.copyArray(denominator).sort() : [];\n  if (backupUnit) {\n
this.backupUnit = backupUnit;\n  } else if (numerator && numerator.length) {\n    this.backupUnit =
numerator[0];\n  }\n};\n\nUnit.prototype = Object.assign(new Node(), {\n  type: 'Unit',\n\n  clone() {\n
return new Unit(utils.copyArray(this.numerator), utils.copyArray(this.denominator), this.backupUnit);\n  },\n\n
  genCSS(context, output) {\n    // Dimension checks the unit is singular and throws an error if in strict math
mode.\n    const strictUnits = context && context.strictUnits;\n    if (this.numerator.length === 1) {\n
output.add(this.numerator[0]); // the ideal situation\n    } else if (!strictUnits && this.backupUnit) {\n
output.add(this.backupUnit);\n    } else if (!strictUnits && this.denominator.length) {\n
output.add(this.denominator[0]);\n    }\n  },\n\n  toString() {\n    let i, returnStr = this.numerator.join('*');\n
for (i = 0; i < this.denominator.length; i++) {\n      returnStr += ` ${this.denominator[i]} `;\n    }\n    return
returnStr;\n  },\n\n  compare(other) {\n    return this.is(other.toString()) ? 0 : undefined;\n  },\n\n  is(unitString) {\n    return this.toString().toUpperCase() === unitString.toUpperCase();\n  },\n\n  isLength() {\n
return RegExp(`^(px|em|ex|ch|rem|in|cm|mm|pc|pt|ex|vw|vh|vmin|vmax)$`, 'gi').test(this.toCSS());\n  },\n\n  isEmpty() {\n    return this.numerator.length === 0 && this.denominator.length === 0;\n  },\n\n  isSingular()
{\n    return this.numerator.length <= 1 && this.denominator.length === 0;\n  },\n\n  map(callback) {\n    let
i;\n\n    for (i = 0; i < this.numerator.length; i++) {\n      this.numerator[i] = callback(this.numerator[i],
false);\n    }\n\n    for (i = 0; i < this.denominator.length; i++) {\n      this.denominator[i] =
callback(this.denominator[i], true);\n    }\n  },\n\n  usedUnits() {\n    let group;\n    const result = {};\n
let mapUnit;\n    let groupName;\n\n    mapUnit = function (atomicUnit) {\n      /* jshint loopfunc:true */\n
      if (group.hasOwnProperty(atomicUnit) && !result[groupName]) {\n        result[groupName] =
atomicUnit;\n      }\n      return atomicUnit;\n    };\n\n    for (groupName in unitConversions) {\n
if (unitConversions.hasOwnProperty(groupName)) {\n      group = unitConversions[groupName];\n\n      this.map(mapUnit);\n    }\n  }\n\n  return result;\n  },\n\n  cancel() {\n    const counter = {};\n
let atomicUnit;\n    let i;\n\n    for (i = 0; i < this.numerator.length; i++) {\n      atomicUnit =
this.numerator[i];\n      counter[atomicUnit] = (counter[atomicUnit] || 0) + 1;\n    }\n\n    for (i = 0; i <
this.denominator.length; i++) {\n      atomicUnit = this.denominator[i];\n      counter[atomicUnit] =
(counter[atomicUnit] || 0) - 1;\n    }\n\n    this.numerator = [];\n    this.denominator = [];\n\n    for

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(atomicUnit in counter) {\n      if (counter.hasOwnProperty(atomicUnit)) {\n          const count =
counter[atomicUnit];\n          if (count > 0) {\n              for (i = 0; i < count; i++) {\n
this.numerator.push(atomicUnit);\n              }\n          } else if (count < 0) {\n              for (i = 0; i < -
count; i++) {\n                  this.denominator.push(atomicUnit);\n              }\n          }\n      }\n      this.numerator.sort();\n      this.denominator.sort();\n  });\n\nexport default Unit;\n", "import Node
from './node';\nimport unitConversions from './data/unit-conversions';\nimport Unit from './unit';\nimport Color
from './color';\n\n// A number with a unit\nconst Dimension = function(value, unit) {\n  this.value =
parseFloat(value);\n  if (isNaN(this.value)) {\n      throw new Error('Dimension is not a number.');

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    for (groupName in conversions) {\n        if (conversions.hasOwnProperty(groupName)) {\n
targetUnit = conversions[groupName];\n            group = unitConversions[groupName];\n
unit.map(applyUnit);\n        }\n    }\n    unit.cancel();\n    return new Dimension(value, unit);\n
}\n});\n\nexport default Dimension;\n", "import Node from './node';\nimport Color from './color';\nimport Dimension
from './dimension';\nimport * as Constants from './constants';\nconst MATH = Constants.Math;\n\nconst
Operation = function(op, operands, isSpaced) {\n    this.op = op.trim();\n    this.operands = operands;\n
this.isSpaced = isSpaced;\n};\n\nOperation.prototype = Object.assign(new Node(), {\n    type: 'Operation',\n
accept(visitor) {\n    this.operands = visitor.visitArray(this.operands);\n    },\n    eval(context) {\n    let a =
this.operands[0].eval(context), b = this.operands[1].eval(context), op;\n    if (context.isMathOn(this.op)) {\n
op = this.op === '/' ? '/' : this.op;\n    if (a instanceof Dimension && b instanceof Color) {\n    a =
a.toColor();\n    }\n    if (b instanceof Dimension && a instanceof Color) {\n    b = b.toColor();\n
}\n    if (!a.operate || !b.operate) {\n    if (\n        (a instanceof Operation || b instanceof
Operation)\n        && a.op === '/' && context.math === MATH.PARENS_DIVISION\n    ) {\n
return new Operation(this.op, [a, b], this.isSpaced);\n    }\n    throw { type: 'Operation',\n
message: 'Operation on an invalid type' };\n    }\n    return a.operate(context, op, b);\n    } else {\n
return new Operation(this.op, [a, b], this.isSpaced);\n    }\n    },\n    genCSS(context, output) {\n
this.operands[0].genCSS(context, output);\n    if (this.isSpaced) {\n    output.add(' ');\n    }\n
output.add(this.op);\n    if (this.isSpaced) {\n    output.add(' ');\n    }\n
this.operands[1].genCSS(context, output);\n    }\n});\n\nexport default Operation;\n", "import Node from
 './node';\nimport Paren from './paren';\nimport Comment from './comment';\nimport Dimension from
 './dimension';\n\nconst Expression = function(value, noSpacing) {\n    this.value = value;\n    this.noSpacing =
noSpacing;\n    if (!value) {\n    throw new Error('Expression requires an array parameter');\n
}\n};\n\nExpression.prototype = Object.assign(new Node(), {\n    type: 'Expression',\n
accept(visitor) {\n    this.value = visitor.visitArray(this.value);\n    },\n    eval(context) {\n    let returnValue;\n    const mathOn =
context.isMathOn();\n    const inParenthesis = this.parens;\n    let doubleParen = false;\n    if
(inParenthesis) {\n    context.inParenthesis();\n    }\n    if (this.value.length > 1) {\n    returnValue =
new Expression(this.value.map(function (e) {\n    if (!e.eval) {\n    return e;\n    }\n
return e.eval(context);\n    }), this.noSpacing);\n    } else if (this.value.length === 1) {\n    if
(this.value[0].parens && !this.value[0].parensInOp && !context.inCalc) {\n    doubleParen = true;\n
}\n    returnValue = this.value[0].eval(context);\n    } else {\n    returnValue = this;\n    }\n    if
(inParenthesis) {\n    context.outOfParenthesis();\n    }\n    if (this.parens && this.parensInOp &&
!mathOn && !doubleParen\n    && !(returnValue instanceof Dimension)) {\n    returnValue = new
Paren(returnValue);\n    }\n    return returnValue;\n    },\n    genCSS(context, output) {\n    for (let i = 0; i <
this.value.length; i++) {\n    this.value[i].genCSS(context, output);\n    if (!this.noSpacing && i + 1 <
this.value.length) {\n    output.add(' ');\n    }\n    }\n    },\n    throwAwayComments() {\n
this.value = this.value.filter(function(v) {\n    return !(v instanceof Comment);\n    });\n    }\n});\n\nexport
default Expression;\n", "import Expression from './tree/expression';\n\nclass functionCaller {\n    constructor(name,
context, index, currentFileInfo) {\n    this.name = name.toLowerCase();\n    this.index = index;\n
this.context = context;\n    this.currentFileInfo = currentFileInfo;\n    this.func =
context.frames[0].functionRegistry.get(this.name);\n    }\n    isValid() {\n    return Boolean(this.func);\n    }\n
call(args) {\n    if (!(Array.isArray(args))) {\n    args = [args];\n    }\n    const evalArgs =
this.func.evalArgs;\n    if (evalArgs !== false) {\n    args = args.map(a => a.eval(this.context));\n    }\n
const commentFilter = item => !(item.type === 'Comment');\n    // This code is terrible and should be replaced
as per this issue...\n    // https://github.com/less/less.js/issues/2477\n    args = args\n
.filter(commentFilter)\n    .map(item => {\n    if (item.type === 'Expression') {\n    const
subNodes = item.value.filter(commentFilter);\n    if (subNodes.length === 1) {\n    //
https://github.com/less/less.js/issues/3616\n    if (item.parens && subNodes[0].op === '/') {\n
return item;\n    }\n    return subNodes[0];\n    } else {\n

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return new Expression(subNodes);\n          }\n          }\n          return item;\n          });\n\n    if\n    (evalArgs === false) {\n      return this.func(this.context, ...args);\n    }\n    return this.func(...args);\n  }\n}\n\nexport default functionCaller;\n", "/*!\n*****\n\nMicrosoft Corporation.\n\nPermission to use, copy, modify, and/or distribute this software for any\npurpose with or without fee is hereby granted.\n\nTHE SOFTWARE IS PROVIDED \"AS IS\" AND THE AUTHOR\nDISCLAIMS ALL WARRANTIES WITH\nREGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED\nWARRANTIES OF MERCHANTABILITY\nAND FITNESS. IN NO EVENT SHALL THE AUTHOR BE\nLIABLE FOR ANY SPECIAL, DIRECT,\nINDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY\nDAMAGES WHATSOEVER RESULTING FROM\nLOSS OF USE, DATA OR PROFITS, WHETHER IN AN\nACTION OF CONTRACT, NEGLIGENCE OR\nOTHER TORTIOUS ACTION, ARISING OUT OF OR IN\nCONNECTION WITH THE USE OR\nPERFORMANCE OF THIS\nSOFTWARE.\n\n*****\n\n*/\n\n* global Reflect, Promise *\n\nvar extendStatics = function(d, b) {\n  extendStatics =\n  Object.setPrototypeOf(\n    ({ __proto__: [] } instanceof Array && function(d, b) { d.__proto__ = b; })\n    ||\n    function(d, b) {\n      for (var p in b) if (Object.prototype.hasOwnProperty.call(b, p)) d[p] = b[p];\n    }\n  );\n  return extendStatics(d, b);\n};\n\nexport function __extends(d, b) {\n  if (typeof b !== \"function\" && b !== null)\n    throw new TypeError(\"Class extends value \" + String(b) + \" is not a constructor or null\");\n  extendStatics(d, b);\n  function __() {\n    this.constructor = d;\n  }\n  d.prototype = b === null ? Object.create(b) :\n    (__proto__ = b.prototype, new __());\n}\n\nexport var __assign = function() {\n  __assign = Object.assign\n  || function __assign(t) {\n    for (var s, i = 1, n = arguments.length; i < n; i++) {\n      s = arguments[i];\n      for (var p in s) if (Object.prototype.hasOwnProperty.call(s, p)) t[p] = s[p];\n    }\n    return t;\n  };\n  return __assign.apply(this, arguments);\n};\n\nexport function __rest(s, e) {\n  var t = {};\n  for (var p in s) if (Object.prototype.hasOwnProperty.call(s, p) && e.indexOf(p) < 0)\n    t[p] = s[p];\n  if (s !== null && typeof Object.getPrototypeOf === \"function\")\n    for (var i = 0, p = Object.getPrototypeOf(s); i < p.length; i++)\n      if (e.indexOf(p[i]) < 0 && Object.prototype.propertyIsEnumerable.call(s, p[i]))\n        t[p[i]] = s[p[i]];\n  return t;\n};\n\nexport function __decorate(decorators, target, key, desc) {\n  var c = arguments.length, r = c < 3 ? target : desc === null ? desc = Object.getOwnPropertyDescriptor(target, key) : desc, d;\n  if (typeof Reflect === \"object\" && typeof Reflect.decorate === \"function\") r = Reflect.decorate(decorators, target, key, desc);\n  else for (var i = decorators.length - 1; i >= 0; i--) if (d = decorators[i]) r = (c < 3 ? d(r) : c > 3 ? d(target, key, r) : d(target, key)) || r;\n  return c > 3 && r && Object.defineProperty(target, key, r), r;\n};\n\nexport function __param(paramIndex, decorator) {\n  return function(target, key) {\n    decorator(target, key, paramIndex);\n  };\n};\n\nexport function __metadata(metadataKey, metadataValue) {\n  if (typeof Reflect === \"object\" && typeof Reflect.metadata === \"function\")\n    return Reflect.metadata(metadataKey, metadataValue);\n};\n\nexport function __awaiter(thisArg, _arguments, P, generator) {\n  function adopt(value) {\n    return value instanceof P ? value : new P(function(resolve) {\n      resolve(value);\n    });\n  }\n  return new (P || (P = Promise))(function(resolve, reject) {\n    function fulfilled(value) {\n      try {\n        step(generator.next(value));\n      } catch (e) {\n        reject(e);\n      }\n    }\n    function rejected(value) {\n      try {\n        step(generator[\"throw\"](value));\n      } catch (e) {\n        reject(e);\n      }\n    }\n    function step(result) {\n      result.done ? resolve(result.value) : adopt(result.value).then(fulfilled, rejected);\n    }\n    step((generator = generator.apply(thisArg, _arguments || [])).next());\n  });\n};\n\nexport function __generator(thisArg, body) {\n  var _ = { label: 0, sent: function() {\n    if (t[0] & 1) throw t[1];\n    return t[1];\n  }, trys: [], ops: [] }, f, y, t, g;\n  return g = { next: verb(0), \"throw\": verb(1), \"return\": verb(2) }, typeof Symbol === \"function\" && (g[Symbol.iterator] = function() {\n    return this;\n  });\n  function verb(n) {\n    return function(v) {\n      return step([n, v]);\n    };\n  }\n  function step(op) {\n    if (f) throw new TypeError(\"Generator is already executing.\");\n    while (true) try {\n      if (f = 1, y && (t = op[0] & 2 ? y[\"return\"] : op[0] ? y[\"throw\"] || ((t = y[\"return\"]) && t.call(y, 0) : y.next) && !(t = t.call(y, op[1])).done) return t;\n      if (y = 0, t) op = [op[0] & 2, t.value];\n      switch (op[0]) {\n        case 0: case 1: t = op; break;\n        case 4: _label++; return { value: op[1],\n
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this.fileInfo().filename,\n          index: this.getIndex() };\n    }\n    this.evaluating = true;\n\n    variable\n    = this.find(context.frames, function (frame) {\n      const v = frame.variable(name);\n      if (v) {\n        if\n        (v.important) {\n          const importantScope = context.importantScope[context.importantScope.length - 1];\n          importantScope.important = v.important;\n        }\n        // If in calc, wrap vars in a function call\n        to cascade evaluate args first\n        if (context.inCalc) {\n          return (new Call('_SELF',\n            [v.value])).eval(context);\n        }\n        else {\n          return v.value.eval(context);\n        }\n      }\n    });\n    if (variable) {\n      this.evaluating = false;\n      return variable;\n    } else {\n      throw { type: 'Name',\n        message: `variable ${name} is undefined`,\n        filename:\n        this.fileInfo().filename,\n          index: this.getIndex() };\n    }\n  },\n  find(obj, fun) {\n    for (let i = 0,\n    r; i < obj.length; i++) {\n      r = fun.call(obj, obj[i]);\n      if (r) { return r; }\n    }\n    return null;\n  });\n}\n\nexport default Variable;\n", "import Node from './node';\nimport Declaration from './declaration';\n\nconst\nProperty = function(name, index, currentFileInfo) {\n  this.name = name;\n  this._index = index;\n  this._fileInfo\n  = currentFileInfo;\n};\n\nProperty.prototype = Object.assign(new Node(), {\n  type: 'Property',\n  eval(context)\n  {\n    let property;\n    const name = this.name;\n    // TODO: shorten this reference\n    const mergeRules\n    = context.pluginManager.less.visitors.ToCSSVisitor.prototype._mergeRules;\n\n    if (this.evaluating) {\n      throw { type: 'Name',\n        message: `Recursive property reference for ${name}`, \n        filename:\n        this.fileInfo().filename,\n          index: this.getIndex() };\n    }\n\n    this.evaluating = true;\n\n    property\n    = this.find(context.frames, function (frame) {\n      let v;\n      const vArr = frame.property(name);\n      if\n      (vArr) {\n        for (let i = 0; i < vArr.length; i++) {\n          v = vArr[i];\n          vArr[i] = new\n          Declaration(v.name,\n            v.value,\n            v.important,\n            v.merge,\n            v.index,\n            v.currentFileInfo,\n            v.inline,\n            v.variable\n            );\n          }\n          mergeRules(vArr);\n          v = vArr[vArr.length - 1];\n          if (v.important) {\n            const importantScope = context.importantScope[context.importantScope.length - 1];\n            importantScope.important = v.important;\n          }\n          v = v.value.eval(context);\n          return v;\n        }\n      }\n    });\n    if (property) {\n      this.evaluating = false;\n      return property;\n    } else {\n      throw { type: 'Name',\n        message: `Property '${name}' is undefined`, \n        filename:\n        this.currentFileInfo.filename,\n          index: this.index };\n    }\n  },\n  find(obj, fun) {\n    for (let i = 0,\n    r; i < obj.length; i++) {\n      r = fun.call(obj, obj[i]);\n      if (r) { return r; }\n    }\n    return null;\n  });\n}\n\nexport default Property;\n", "import Node from './node';\n\nconst Attribute = function(key, op, value, cif)\n  {\n    this.key = key;\n    this.op = op;\n    this.value = value;\n    this.cif = cif;\n  };\n\nAttribute.prototype =\nObject.assign(new Node(), {\n  type: 'Attribute',\n  eval(context) {\n    return new Attribute(\n      this.key.eval ? this.key.eval(context) : this.key,\n      this.op,\n      (this.value && this.value.eval) ?\n      this.value.eval(context) : this.value,\n      this.cif\n    );\n  },\n  genCSS(context, output) {\n    output.add(this.toCSS(context));\n  },\n  toCSS(context) {\n    let value = this.key.toCSS ?\n    this.key.toCSS(context) : this.key;\n\n    if (this.op) {\n      value += this.op;\n      value +=\n      (this.value.toCSS ? this.value.toCSS(context) : this.value);\n    }\n\n    if (this.cif) {\n      value = value + \"\n      \" + this.cif;\n    }\n\n    return `[$${value}]`;\n  });\n}\n\nexport default Attribute;\n", "import Node from\n './node';\nimport Variable from './variable';\nimport Property from './property';\n\nconst Quoted = function(str,\ncontent, escaped, index, currentFileInfo) {\n  this.escaped = (escaped == null) ? true : escaped;\n  this.value =\n  content || \"\";\n  this.quote = str.charAt(0);\n  this._index = index;\n  this._fileInfo = currentFileInfo;\n\n  this.variableRegex = /@\\{([\\w-]+)\\}/g;\n  this.propRegex = /\\$\\{([\\w-]+)\\}/g;\n  this.allowRoot =\n  escaped;\n};\n\nQuoted.prototype = Object.assign(new Node(), {\n  type: 'Quoted',\n  genCSS(context, output)\n  {\n    if (!this.escaped) {\n      output.add(this.quote, this.fileInfo(), this.getIndex());\n    }\n\n    output.add(this.value);\n    if (!this.escaped) {\n      output.add(this.quote);\n    }\n  },\n  containsVariables() {\n    return this.value.match(this.variableRegex);\n  },\n  eval(context) {\n    const that\n    = this;\n    let value = this.value;\n    const variableReplacement = function (_, name) {\n      const v = new\n      Variable(`@${name}`, that.getIndex(), that.fileInfo()).eval(context, true);\n      return (v instanceof Quoted) ?\n      v.value : v.toCSS();\n    };\n    const propertyReplacement = function (_, name) {\n      const v = new

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Property(`${name}`, that.getIndex(), that.fileInfo()).eval(context, true);\n      return (v instanceof Quoted) ?
v.value : v.toCSS();\n    });\n    function iterativeReplace(value, regexp, replacementFunc) {\n      let
evaluatedValue = value;\n      do {\n        value = evaluatedValue.toString();\n        evaluatedValue =
value.replace(regexp, replacementFunc);\n      } while (value !== evaluatedValue);\n      return
evaluatedValue;\n    }\n    value = iterativeReplace(value, this.variableRegex, variableReplacement);\n
value = iterativeReplace(value, this.propRegex, propertyReplacement);\n    return new Quoted(this.quote + value
+ this.quote, value, this.escaped, this.getIndex(), this.fileInfo());\n  },\n\n  compare(other) {\n    // when
comparing quoted strings allow the quote to differ\n    if (other.type === 'Quoted' && !this.escaped &&
!other.escaped) {\n      return Node.numericCompare(this.value, other.value);\n    } else {\n      return
other.toCSS() && this.toCSS() === other.toCSS() ? 0 : undefined;\n    }\n  });\n\n  export default
Quoted;\n"}\n\nimport Node from './node';\n\nfunction escapePath(path) {\n  return path.replace(/[\(\)\\"\\s]/g,
function(match) { return `\\${match}`; });\n}\n\nconst URL = function(val, index, currentFileInfo, isEvald) {\n
this.value = val;\n  this._index = index;\n  this._fileInfo = currentFileInfo;\n  this.isEvald =
isEvald;\n};\n\nURL.prototype = Object.assign(new Node(), {\n  type: 'Url',\n\n  accept(visitor) {\n    this.value
= visitor.visit(this.value);\n  },\n\n  genCSS(context, output) {\n    output.add('url(');\n
this.value.genCSS(context, output);\n    output.add('');\n  },\n\n  eval(context) {\n    const val =
this.value.eval(context);\n    let rootpath;\n\n    if (!this.isEvald) {\n      // Add the rootpath if the URL
requires a rewrite\n      rootpath = this.fileInfo() && this.fileInfo().rootpath;\n      if (typeof rootpath ===
'string' &&\n        typeof val.value === 'string' &&\n        context.pathRequiresRewrite(val.value)) {\n
        if (!val.quote) {\n          rootpath = escapePath(rootpath);\n        }\n        val.value =
context.rewritePath(val.value, rootpath);\n      } else {\n        val.value =
context.normalizePath(val.value);\n      }\n\n      // Add url args if enabled\n      if (context.urlArgs) {\n
        if (!val.value.match(/^\\s*data:/)) {\n          const delimiter = val.value.indexOf('?') === -1 ? '?' : '&';\n
          const urlArgs = delimiter + context.urlArgs;\n          if (val.value.indexOf('#') !== -1) {\n
            val.value = val.value.replace('#', `${urlArgs}#`);\n          } else {\n            val.value += urlArgs;\n
          }\n        }\n      }\n    }\n\n    return new URL(val, this.getIndex(), this.fileInfo(), true);\n  }\n});\n\nexport default URL;\n"}\n\nimport Ruleset from './ruleset';\nimport Value from './value';\nimport Selector
from './selector';\nimport Anonymous from './anonymous';\nimport Expression from './expression';\nimport AtRule
from './atrule';\nimport * as utils from './utils';\n\nconst Media = function(value, features, index, currentFileInfo,
visibilityInfo) {\n  this._index = index;\n  this._fileInfo = currentFileInfo;\n\n  const selectors = (new Selector([],
null, null, this._index, this._fileInfo)).createEmptySelectors();\n\n  this.features = new Value(features);\n
this.rules = [new Ruleset(selectors, value)];\n  this.rules[0].allowImports = true;\n
this.copyVisibilityInfo(visibilityInfo);\n  this.allowRoot = true;\n  this.setParent(selectors, this);\n
this.setParent(this.features, this);\n  this.setParent(this.rules, this);\n}\n\nMedia.prototype = Object.assign(new
AtRule(), {\n  type: 'Media',\n\n  isRulesetLike() {\n    return true;\n  },\n\n  accept(visitor) {\n    if
(this.features) {\n      this.features = visitor.visit(this.features);\n    }\n    if (this.rules) {\n      this.rules =
visitor.visitArray(this.rules);\n    }\n  },\n\n  genCSS(context, output) {\n    output.add('@media ',
this._fileInfo, this._index);\n    this.features.genCSS(context, output);\n    this.outputRuleset(context, output,
this.rules);\n  },\n\n  eval(context) {\n    if (!context.mediaBlocks) {\n      context.mediaBlocks = [];\n
context.mediaPath = [];\n    }\n\n    const media = new Media(null, [], this._index, this._fileInfo,
this.visibilityInfo);\n    if (this.debugInfo) {\n      this.rules[0].debugInfo = this.debugInfo;\n
media.debugInfo = this.debugInfo;\n    }\n\n    media.features = this.features.eval(context);\n\n
context.mediaPath.push(media);\n    context.mediaBlocks.push(media);\n\n    this.rules[0].functionRegistry =
context.frames[0].functionRegistry.inherit();\n    context.frames.unshift(this.rules[0]);\n    media.rules =
[this.rules[0].eval(context)];\n    context.frames.shift();\n\n    context.mediaPath.pop();\n\n    return
context.mediaPath.length === 0 ? media.evalTop(context) :\n      media.evalNested(context);\n  },\n\n  evalTop(context) {\n    let result = this;\n\n    // Render all dependent Media blocks.\n    if
(context.mediaBlocks.length > 1) {\n      const selectors = (new Selector([], null, null, this.getIndex(),

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this.fileInfo()).createEmptySelectors();\n      result = new Ruleset(selectors, context.mediaBlocks);\n      result.multiMedia = true;\n      result.copyVisibilityInfo(this.visibilityInfo());\n      this.setParent(result, this);\n    }\n\n    delete context.mediaBlocks;\n    delete context.mediaPath;\n    return result;\n  },\n  evalNested(context) {\n    let i;\n    let value;\n    const path = context.mediaPath.concat([this]);\n\n    // Extract the media-query conditions separated with `,` (OR).\n    for (i = 0; i < path.length; i++) {\n      value = path[i].features instanceof Value ?\n        path[i].features.value : path[i].features;\n      path[i] = Array.isArray(value) ? value : [value];\n    }\n\n    // Trace all permutations to generate the resulting media-query.\n    // (a, b and c) with nested (d, e) ->\n    // a and d\n    // a and e\n    // b and c and d\n    // b and c and e\n    this.features = new Value(this.permute(path).map(path => {\n      path = path.map(fragment => fragment.toCSS ? fragment : new Anonymous(fragment));\n      for (i = path.length - 1; i > 0; i--) {\n        path.splice(i, 0, new Anonymous('and'));\n      }\n      return new Expression(path);\n    }));\n    this.setParent(this.features, this);\n\n    // Fake a tree-node that doesn't output anything.\n    return new Ruleset([], []);\n  },\n  permute(arr) {\n    if (arr.length === 0) {\n      return [];\n    } else if (arr.length === 1) {\n      return arr[0];\n    } else {\n      const result = [];\n      const rest = this.permute(arr.slice(1));\n      for (let i = 0; i < rest.length; i++) {\n        for (let j = 0; j < arr[0].length; j++) {\n          result.push([arr[0][j]].concat(rest[i]));\n        }\n      }\n      return result;\n    }\n  },\n  bubbleSelectors(selectors) {\n    if (!selectors) {\n      return;\n    }\n    this.rules = [new Ruleset(utils.copyArray(selectors), [this.rules[0]])];\n    this.setParent(this.rules, this);\n  }\n});\n\nexport default Media;\n", "import Node from './node';\nimport Media from './media';\nimport URL from './url';\nimport Quoted from './quoted';\nimport Ruleset from './ruleset';\nimport Anonymous from './anonymous';\nimport * as utils from './utils';\nimport LessError from './less-error';\n\n// CSS @import node\n// The general strategy here is that we don't want to wait\n// for the parsing to be completed, before we start importing\n// the file. That's because in the context of a browser,\n// most of the time will be spent waiting for the server to respond.\n// On creation, we push the import path to our import queue, though\n// `import, push`, we also pass it a callback, which it'll call once\n// the file has been fetched, and parsed.\n\nconst Import = function(path, features, options, index, currentFileInfo, visibilityInfo) {\n  this.options = options;\n  this._index = index;\n  this._fileInfo = currentFileInfo;\n  this.path = path;\n  this.features = features;\n  this.allowRoot = true;\n\n  if (this.options.less !== undefined || this.options.inline) {\n    this.css = !this.options.less || this.options.inline;\n  } else {\n    const pathValue = this.getPath();\n    if (pathValue && /#\\.\\.&\\?css(?:[?;].*)?$/i.test(pathValue)) {\n      this.css = true;\n    }\n  }\n\n  this.copyVisibilityInfo(visibilityInfo);\n  this.setParent(this.features, this);\n\n  this.setParent(this.path, this);\n};\n\nImport.prototype = Object.assign(new Node(), {\n  type: 'Import',\n\n  accept(visitor) {\n    if (this.features) {\n      this.features = visitor.visit(this.features);\n    }\n    this.path = visitor.visit(this.path);\n    if (!this.options.isPlugin && !this.options.inline && this.root) {\n      this.root = visitor.visit(this.root);\n    }\n  },\n\n  genCSS(context, output) {\n    if (this.css && this.path._fileInfo.reference === undefined) {\n      output.add('@import ', this._fileInfo, this._index);\n      this.path.genCSS(context, output);\n    } else if (this.features) {\n      output.add(' '); \n      this.features.genCSS(context, output);\n    }\n    output.add(';');\n  },\n\n  getPath() {\n    return (this.path instanceof URL) ?\n      this.path.value.value : this.path.value;\n  },\n\n  isVariableImport() {\n    let path = this.path;\n    if (path instanceof URL) {\n      path = path.value;\n    }\n    if (path instanceof Quoted) {\n      return path.containsVariables();\n    }\n    return true;\n  },\n\n  evalForImport(context) {\n    let path = this.path;\n\n    if (path instanceof URL) {\n      path = path.value;\n    }\n\n    return new Import(path.eval(context), this.features, this.options, this._index, this._fileInfo, this.visibilityInfo);\n  },\n\n  evalPath(context) {\n    const path = this.path.eval(context);\n    const fileInfo = this._fileInfo;\n\n    if (!(path instanceof URL)) {\n      // Add the rootpath if the URL requires a rewrite\n      const pathValue = path.value;\n      if (fileInfo && pathValue && context.pathRequiresRewrite(pathValue)) {\n        path.value = context.rewritePath(pathValue, fileInfo.rootpath);\n      } else {\n        path.value = context.normalizePath(path.value);\n      }\n    }\n\n    return path;\n  },\n\n  eval(context) {\n    const result = this.doEval(context);\n    if

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(this.options.reference || this.blocksVisibility()) {\n      if (result.length || result.length === 0) {\n
result.forEach(function (node) {\n          node.addVisibilityBlock();\n          });\n      } else
{\n      result.addVisibilityBlock();\n      }\n      return result;\n  },\n  doEval(context) {\n
let ruleset;\n      let registry;\n      const features = this.features && this.features.eval(context);\n      if
(this.options.isPlugin) {\n          if (this.root && this.root.eval) {\n              try {\n
this.root.eval(context);\n          }\n          catch (e) {\n              e.message = 'Plugin error during
evaluation';\n              throw new LessError(e, this.root.imports, this.root.filename);\n          }\n      }\n
      registry = context.frames[0] && context.frames[0].functionRegistry;\n      if ( registry && this.root &&
this.root.functions ) {\n          registry.addMultiple( this.root.functions );\n          }\n          return [];\n
      }\n      if (this.skip) {\n          if (typeof this.skip === 'function') {\n              this.skip = this.skip();\n          }\n
          if (this.skip) {\n              return [];\n          }\n          if (this.options.inline) {\n              const contents =
new Anonymous(this.root, 0,\n                  {\n                      filename: this.importedFilename,\n                      reference:
this.path._fileInfo && this.path._fileInfo.reference\n                  }, true, true);\n              return this.features ? new
Media([contents], this.features.value) : [contents];\n          } else if (this.css) {\n              const newImport = new
Import(this.evalPath(context), features, this.options, this._index);\n              if (!newImport.css && this.error) {\n
throw this.error;\n              }\n              return newImport;\n          } else if (this.root) {\n              ruleset = new
Ruleset(null, utils.copyArray(this.root.rules));\n              ruleset.evalImports(context);\n              return this.features ?
new Media(ruleset.rules, this.features.value) : ruleset.rules;\n          } else {\n              return [];\n          }\n
      }\n  });\n  export default Import;\n  ", "import Node from './node';\n  import Variable from './variable';\n  import const
JsEvalNode = function() {};\n  JsEvalNode.prototype = Object.assign(new Node(), {\n
evaluateJavaScript(expression, context) {\n      let result;\n      const that = this;\n      const evalContext = {};\n      if
(!context.javascriptEnabled) {\n          throw { message: 'Inline JavaScript is not enabled. Is it set in your
options?',\n              filename: this.fileInfo().filename,\n              index: this.getIndex() }; }\n      expression =
expression.replace(/@\\{([\\w-]+)\\}/g, function (_, name) {\n          return that.jsify(new
Variable(`@${name}`, that.getIndex(), that.fileInfo()).eval(context));\n          });\n      try {\n          expression =
new Function(`return (${expression})`);\n          } catch (e) {\n              throw { message: `JavaScript evaluation error:
${e.message} from \\`${expression}\\``,\n                  filename: this.fileInfo().filename,\n                  index:
this.getIndex() }; }\n      const variables = context.frames[0].variables();\n      for (const k in variables) {\n
          if (variables.hasOwnProperty(k)) {\n              /* jshint loopfunc:true */\n              evalContext[k.slice(1)] =
{\n                  value: variables[k].value,\n                  toJS: function () {\n                      return
this.value.eval(context).toCSS();\n                  };\n              }\n          }\n      }\n      try {\n          result =
expression.call(evalContext);\n          } catch (e) {\n              throw { message: `JavaScript evaluation error:
${e.name}: ${e.message.replace(/["]/g, "\\")}` ,\n                  filename: this.fileInfo().filename,\n                  index:
this.getIndex() }; }\n      return result;\n  },\n  jsify(obj) {\n      if (Array.isArray(obj.value) &&
(obj.value.length > 1)) {\n          return `[${obj.value.map(function (v) { return v.toCSS(); }).join(', ')}'];\n      }
else {\n          return obj.toCSS();\n      }\n  });\n  export default JsEvalNode;\n  ", "import JsEvalNode from
'./js-eval-node';\n  import Dimension from './dimension';\n  import Quoted from './quoted';\n  import Anonymous from
'./anonymous';\n  import JavaScript = function(string, escaped, index, currentFileInfo) {\n      this.escaped = escaped;\n
      this.expression = string;\n      this._index = index;\n      this._fileInfo = currentFileInfo;\n  }\n  JavaScript.prototype =
Object.assign(new JsEvalNode(), {\n      type: 'JavaScript',\n      eval(context) {\n          const result =
this.evaluateJavaScript(this.expression, context);\n          const type = typeof result;\n          if (type === 'number' &&
!isNaN(result)) {\n              return new Dimension(result);\n          } else if (type === 'string') {\n              return new
Quoted(`"${result}"`, result, this.escaped, this._index);\n          } else if (Array.isArray(result)) {\n              return new
Anonymous(result.join(', '));\n          } else {\n              return new Anonymous(result);\n          }\n      }\n  });\n  export
default JavaScript;\n  ", "import Node from './node';\n  import Assignment = function(key, val) {\n      this.key = key;\n
      this.value = val;\n  }\n  Assignment.prototype = Object.assign(new Node(), {\n      type: 'Assignment',\n      accept(visitor) {\n
          this.value = visitor.visit(this.value);\n          },\n      eval(context) {\n          if (this.value.eval) {\n
              return new Assignment(this.key, this.value.eval(context));\n          }\n          return this;\n      },\n  });\n  }

```



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detachedRuleset = new DetachedRuleset(rules);\n    }\n    if (detachedRuleset.ruleset) {\n        return
detachedRuleset.callEval(context);\n    }\n    throw error;\n    });\n\nexport default VariableCall;\n", "import
Node from './node';\nimport Variable from './variable';\nimport Ruleset from './ruleset';\nimport Selector from
 './selector';\n\nconst NamespaceValue = function(ruleCall, lookups, index, fileInfo) {\n    this.value = ruleCall;\n
this.lookups = lookups;\n    this._index = index;\n    this._fileInfo = fileInfo;\n};\n\nNamespaceValue.prototype =
Object.assign(new Node(), {\n    type: 'NamespaceValue',\n\n    eval(context) {\n        let i, j, name, rules =
this.value.eval(context);\n        for (i = 0; i < this.lookups.length; i++) {\n            name = this.lookups[i];\n\n
/**\n            * Eval'd DRs return rulesets.\n            * Eval'd mixins return rules, so let's make a ruleset if we
need it.\n            * We need to do this because of late parsing of values\n            */\n            if (Array.isArray(rules))
{\n                rules = new Ruleset([new Selector()], rules);\n            }\n            if (name === "") {\n                rules =
rules.lastDeclaration();\n            }\n            else if (name.charAt(0) === '@') {\n                if (name.charAt(1) ===
'@') {\n                    name = `@${new Variable(name.substr(1)).eval(context).value}`;\n                }\n                if
(rules.variables) {\n                    rules = rules.variable(name);\n                }\n                if (!rules) {\n
                    throw { type: 'Name',\n                        message: `variable ${name} not found`,\n                        filename:
this.fileInfo().filename,\n                        index: this.getIndex() };\n                }\n            }\n            else {\n                if
(name.substring(0, 2) === '$@') {\n                    name = `$$${new Variable(name.substr(1)).eval(context).value}`;\n                }\n
                else {\n                    name = name.charAt(0) === '$' ? name : `$$${name}`;\n                }\n                if
(rules.properties) {\n                    rules = rules.property(name);\n                }\n                if (!rules) {\n
                    throw { type: 'Name',\n                        message: `property \"${name.substr(1)}\" not found`,\n                        filename:
this.fileInfo().filename,\n                        index: this.getIndex() };\n                }\n                // Properties are
an array of values, since a ruleset can have multiple props.\n                // We pick the last one (the \"cascaded\"\n
value)\n                rules = rules[rules.length - 1];\n            }\n            if (rules.value) {\n                rules =
rules.eval(context).value;\n            }\n            if (rules.ruleset) {\n                rules = rules.ruleset.eval(context);\n
            }\n        }\n        return rules;\n    });\n\nexport default NamespaceValue;\n", "import Selector from
 './selector';\nimport Element from './element';\nimport Ruleset from './ruleset';\nimport Declaration from
 './declaration';\nimport DetachedRuleset from './detached-ruleset';\nimport Expression from './expression';\nimport
 contexts from './contexts';\nimport * as utils from './utils';\n\nconst Definition = function(name, params, rules,
condition, variadic, frames, visibilityInfo) {\n    this.name = name || 'anonymous mixin';\n    this.selectors = [new
Selector([new Element(null, name, false, this._index, this._fileInfo)])];\n    this.params = params;\n    this.condition
= condition;\n    this.variadic = variadic;\n    this.arity = params.length;\n    this.rules = rules;\n    this._lookups =
{};\n    const optionalParameters = [];\n    this.required = params.reduce(function (count, p) {\n        if (!p.name ||
(p.name && !p.value)) {\n            return count + 1;\n        }\n        else {\n            optionalParameters.push(p.name);\n            return count;\n        }\n    }, 0);\n    this.optionalParameters =
optionalParameters;\n    this.frames = frames;\n    this.copyVisibilityInfo(visibilityInfo);\n    this.allowRoot =
true;\n}\n\nDefinition.prototype = Object.assign(new Ruleset(), {\n    type: 'MixinDefinition',\n    evalFirst: true,\n\n    accept(visitor) {\n        if (this.params && this.params.length) {\n            this.params =
visitor.visitArray(this.params);\n        }\n        this.rules = visitor.visitArray(this.rules);\n        if (this.condition) {\n
            this.condition = visitor.visit(this.condition);\n        }\n    },\n\n    evalParams(context, mixinEnv, args,
evaldArguments) {\n        /* jshint boss:true */\n        const frame = new Ruleset(null, null);\n        let varargs;\n        let arg;\n        const params = utils.copyArray(this.params);\n        let i;\n        let j;\n        let val;\n        let name;\n        let isNamedFound;\n        let argIndex;\n        let argsLength = 0;\n\n        if (mixinEnv.frames &&
mixinEnv.frames[0] && mixinEnv.frames[0].functionRegistry) {\n            frame.functionRegistry =
mixinEnv.frames[0].functionRegistry.inherit();\n        }\n        mixinEnv = new contexts.Eval(mixinEnv,
[frame].concat(mixinEnv.frames));\n\n        if (args) {\n            args = utils.copyArray(args);\n            argsLength =
args.length;\n\n            for (i = 0; i < argsLength; i++) {\n                arg = args[i];\n                if (name = (arg &&
arg.name)) {\n                    isNamedFound = false;\n\n                    for (j = 0; j < params.length; j++) {\n
                        if (!evaldArguments[j] && name === params[j].name) {\n                            evaldArguments[j] =
arg.value.eval(context);\n                            frame.prependRule(new Declaration(name, arg.value.eval(context));\n

```











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const importSequencer = this,\n      importItem = {\n        callback,\n        args: null,\n        isReady: false\n      };\n      this.imports.push(importItem);\n      return function() {\n        importItem.args =\n        Array.prototype.slice.call(arguments, 0);\n        importItem.isReady = true;\n        importSequencer.tryRun();\n      };\n    }\n\n    addVariableImport(callback) {\n      this.variableImports.push(callback);\n    }\n\n    tryRun() {\n      this._currentDepth++;\n      try {\n        while (true) {\n          while (this.imports.length > 0) {\n            const importItem = this.imports[0];\n            if (!importItem.isReady) {\n              return;\n            }\n            this.imports = this.imports.slice(1);\n            importItem.callback.apply(null,\n            importItem.args);\n            if (this.variableImports.length === 0) {\n              break;\n            }\n            const variableImport = this.variableImports[0];\n            this.variableImports =\n            this.variableImports.slice(1);\n            variableImport();\n          }\n        } finally {\n          this._currentDepth--\n        };\n      }\n      if (this._currentDepth === 0 && this._onSequencerEmpty) {\n        this._onSequencerEmpty();\n      }\n    }\n\n    export default ImportSequencer;\n  },"import contexts from './contexts';\nimport Visitor from\n './visitor';\nimport ImportSequencer from './import-sequencer';\nimport * as utils from './utils';\n\nconst\n ImportVisitor = function(importer, finish) {\n  this._visitor = new Visitor(this);\n  this._importer = importer;\n  this._finish = finish;\n  this.context = new contexts.Eval();\n  this.importCount = 0;\n  this.onceFileDetectionMap = {};\n  this.recursionDetector = {};\n  this._sequencer = new\n  ImportSequencer(this._onSequencerEmpty.bind(this));\n};\n\nImportVisitor.prototype = {\n  isReplacing: false,\n  run: function (root) {\n    try {\n      // process the contents\n      this._visitor.visit(root);\n    }\n    catch (e) {\n      this.error = e;\n    }\n    this.isFinished = true;\n    this._sequencer.tryRun();\n  },\n  _onSequencerEmpty: function() {\n    if (!this.isFinished) {\n      return;\n    }\n    this._finish(this.error);\n  },\n  visitImport: function (importNode, visitArgs) {\n    const inlineCSS =\n    importNode.options.inline;\n    if (!importNode.css || inlineCSS) {\n      const context = new\n      contexts.Eval(this.context, utils.copyArray(this.context.frames));\n      const importParent =\n      context.frames[0];\n      this.importCount++;\n      if (importNode.isVariableImport()) {\n        this._sequencer.addVariableImport(this.processImportNode.bind(this, importNode, context, importParent));\n      } else {\n        this.processImportNode(importNode, context, importParent);\n      }\n    }\n    visitArgs.visitDeeper = false;\n  },\n  processImportNode: function(importNode, context, importParent) {\n    let evaldImportNode;\n    const inlineCSS = importNode.options.inline;\n    try {\n      evaldImportNode =\n      importNode.evalForImport(context);\n    } catch (e) {\n      if (!e.filename) { e.index = importNode.getIndex();\n      e.filename = importNode.fileInfo().filename; }\n      // attempt to eval properly and treat as css\n      importNode.css = true;\n      // if that fails, this error will be thrown\n      importNode.error = e;\n    }\n    if (evaldImportNode && (!evaldImportNode.css || inlineCSS)) {\n      if (evaldImportNode.options.multiple)\n      {\n        context.importMultiple = true;\n      }\n      // try appending if we haven't determined if it is css\n      or not\n      const tryAppendLessExtension = evaldImportNode.css === undefined;\n      for (let i = 0; i <\n      importParent.rules.length; i++) {\n        if (importParent.rules[i] === importNode) {\n          importParent.rules[i] = evaldImportNode;\n          break;\n        }\n      }\n      const onImported\n      = this.onImported.bind(this, evaldImportNode, context),\n      sequencedOnImported =\n      this._sequencer.addImport(onImported);\n      this._importer.push(evaldImportNode.getPath(),\n      tryAppendLessExtension, evaldImportNode.fileInfo(),\n      evaldImportNode.options,\n      sequencedOnImported);\n    } else {\n      this.importCount--;\n      if (this.isFinished) {\n        this._sequencer.tryRun();\n      }\n    }\n  },\n  onImported: function (importNode, context, e, root,\n  importedAtRoot, fullPath) {\n    if (e) {\n      if (!e.filename) {\n        e.index = importNode.getIndex();\n        e.filename = importNode.fileInfo().filename;\n      }\n      this.error = e;\n    }\n    const importVisitor\n    = this,\n    inlineCSS = importNode.options.inline,\n    isPlugin = importNode.options.isPlugin,\n    isOptional = importNode.options.optional,\n    duplicateImport = importedAtRoot || fullPath in\n    importVisitor.recursionDetector;\n    if (!context.importMultiple) {\n      if (duplicateImport) {\n        importNode.skip = true;\n      } else {\n        importNode.skip = function() {\n          if (fullPath in\n          importVisitor.onceFileDetectionMap) {\n            return true;\n          }\n        }\n      }\n    }\n  }\n};

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importVisitor.onceFileDetectionMap[fullPath] = true;\n                return false;\n                };\n                }\n                }\n\n                if (!fullPath && isOptional) {\n                importNode.skip = true;\n                }\n\n                if (root) {\n\nimportNode.root = root;\n                importNode.importedFilename = fullPath;\n\n                if (!inlineCSS && !isPlugin\n&& (context.importMultiple || !duplicateImport)) {\n                importVisitor.recursionDetector[fullPath] = true;\n\n                const oldContext = this.context;\n                this.context = context;\n                try {\n\nthis._visitor.visit(root);\n                } catch (e) {\n                this.error = e;\n                }\n                this.context =\noldContext;\n                }\n                }\n\n                importVisitor.importCount--;\n\n                if (importVisitor.isFinished) {\n\nimportVisitor._sequencer.tryRun();\n                }\n                },\n                visitDeclaration: function (declNode, visitArgs) {\n                if\n(declNode.value.type === 'DetachedRuleset') {\n                this.context.frames.unshift(declNode);\n                } else {\n                visitArgs.visitDeeper = false;\n                }\n                },\n                visitDeclarationOut: function(declNode) {\n                if\n(declNode.value.type === 'DetachedRuleset') {\n                this.context.frames.shift();\n                }\n                },\n                visitAtRule:\nfunction (atRuleNode, visitArgs) {\n                this.context.frames.unshift(atRuleNode);\n                },\n                visitAtRuleOut:\nfunction (atRuleNode) {\n                this.context.frames.shift();\n                },\n                visitMixinDefinition: function\n(mixinDefinitionNode, visitArgs) {\n                this.context.frames.unshift(mixinDefinitionNode);\n                },\n                visitMixinDefinitionOut: function (mixinDefinitionNode) {\n                this.context.frames.shift();\n                },\n                visitRuleset:\nfunction (rulesetNode, visitArgs) {\n                this.context.frames.unshift(rulesetNode);\n                },\n                visitRulesetOut:\nfunction (rulesetNode) {\n                this.context.frames.shift();\n                },\n                visitMedia: function (mediaNode, visitArgs) {\n                this.context.frames.unshift(mediaNode.rules[0]);\n                },\n                visitMediaOut: function (mediaNode) {\n                this.context.frames.shift();\n                };\n\nexport default ImportVisitor;\n",\n"class SetTreeVisibilityVisitor {\n\nconstructor(visible) {\n                this.visible = visible;\n                }\n\nrun(root) {\n                this.visit(root);\n                }\n\nvisitArray(nodes) {\n                if (!nodes) {\n                return nodes;\n                }\n\n                const cnt = nodes.length;\n                let i;\n                for (i = 0; i < cnt; i++) {\n                this.visit(nodes[i]);\n                }\n                return nodes;\n                }\n\nvisit(node) {\n                if (!node) {\n                return node;\n                }\n                if (node.constructor === Array) {\n                return\nthis.visitArray(node);\n                }\n\n                if (!node.blocksVisibility || node.blocksVisibility()) {\n                return node;\n                }\n                if (this.visible) {\n                node.ensureVisibility();\n                } else {\n                node.ensureInvisibility();\n                }\n                }\n\n                node.accept(this);\n                return node;\n                }\n\n}\n\nexport default SetTreeVisibilityVisitor;\n",\nimport tree\nfrom './tree';\nimport Visitor from './visitor';\nimport logger from './logger';\nimport * as utils from './utils';\n\n/*\njshint loopfunc:true */\n\nclass ExtendFinderVisitor {\n\nconstructor() {\n                this._visitor = new Visitor(this);\n\n                this.contexts = [];\n                this.allExtendsStack = [[]];\n                }\n\nrun(root) {\n                root = this._visitor.visit(root);\n\n                root.allExtends = this.allExtendsStack[0];\n                return root;\n                }\n\nvisitDeclaration(declNode, visitArgs) {\n                visitArgs.visitDeeper = false;\n                }\n\nvisitMixinDefinition(mixinDefinitionNode, visitArgs) {\n                visitArgs.visitDeeper = false;\n                }\n\nvisitRuleset(rulesetNode, visitArgs) {\n                if (rulesetNode.root) {\n                return;\n                }\n\n                let i;\n                let j;\n                let extend;\n                const allSelectorsExtendList = [];\n                let\nextendList;\n\n                // get &:extend(.a); rules which apply to all selectors in this ruleset\n                const rules =\nrulesetNode.rules, ruleCnt = rules ? rules.length : 0;\n                for (i = 0; i < ruleCnt; i++) {\n                if\n(rulesetNode.rules[i] instanceof tree.Extend) {\n                allSelectorsExtendList.push(rules[i]);\n                }\n                }\n\n                rulesetNode.extendOnEveryPath = true;\n                }\n                }\n\n                // now find every selector and apply the extends\nthat apply to all extends\n                // and the ones which apply to an individual extend\n                const paths =\nrulesetNode.paths;\n                for (i = 0; i < paths.length; i++) {\n                const selectorPath = paths[i], selector =\nselectorPath[selectorPath.length - 1], selExtendList = selector.extendList;\n\n                extendList = selExtendList ?\nutils.copyArray(selExtendList).concat(allSelectorsExtendList)\n                : allSelectorsExtendList;\n\n                if\n(extendList) {\n                extendList = extendList.map(function(allSelectorsExtend) {\n                return\nallSelectorsExtend.clone();\n                });\n                }\n\n                for (j = 0; j < extendList.length; j++) {\n                this.foundExtends = true;\n                extend = extendList[j];\n                extend.findSelfSelectors(selectorPath);\n\n                extend.ruleset = rulesetNode;\n                if (j === 0) {\n                extend.firstExtendOnThisSelectorPath = true;\n                }\n\n                this.allExtendsStack[this.allExtendsStack.length - 1].push(extend);\n                }\n                }\n\n                this.contexts.push(rulesetNode.selectors);\n                }\n\nvisitRulesetOut(rulesetNode) {\n                if (!rulesetNode.root) {\n                this.contexts.length = this.contexts.length - 1;\n                }\n                }\n\nvisitMedia(mediaNode, visitArgs) {\n

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mediaNode.allExtends = [];\n      this.allExtendsStack.push(mediaNode.allExtends);\n    }\n\n    visitMediaOut(mediaNode) {\n      this.allExtendsStack.length = this.allExtendsStack.length - 1;\n    }\n\n    visitAtRule(atRuleNode, visitArgs) {\n      atRuleNode.allExtends = [];\n\n      this.allExtendsStack.push(atRuleNode.allExtends);\n    }\n\n    visitAtRuleOut(atRuleNode) {\n      this.allExtendsStack.length = this.allExtendsStack.length - 1;\n    }\n\n    class ProcessExtendsVisitor {\n    constructor() {\n      this._visitor = new Visitor(this);\n    }\n\n    run(root) {\n      const extendFinder = new\n      ExtendFinderVisitor();\n      this.extendIndices = {};\n      extendFinder.run(root);\n      if\n      (!extendFinder.foundExtends) { return root; }\n      root.allExtends =\n      root.allExtends.concat(this.doExtendChaining(root.allExtends, root.allExtends));\n      this.allExtendsStack =\n      [root.allExtends];\n      const newRoot = this._visitor.visit(root);\n      this.checkExtendsForNonMatched(root.allExtends);\n      return newRoot;\n    }\n\n    checkExtendsForNonMatched(extendList) {\n      const indices = this.extendIndices;\n      extendList.filter(function(extend) {\n        return !extend.hasFoundMatches && extend.parent_ids.length === 1;\n      }).forEach(function(extend) {\n        let selector = '_unknown_';\n        try {\n          selector =\n          extend.selector.toCSS({});\n        }\n        catch (_){\n          if (!indices['${extend.index} ${selector}'])\n          {\n            indices['${extend.index} ${selector}'] = true;\n            logger.warn(`extend '${selector}' has no\n            matches`);\n          }\n        }\n        doExtendChaining(extendsList, extendsListTarget, iterationCount) {\n          /\n          // chaining is different from normal extension.. if we extend an extend then we are not just copying,\n          altering\n          // and pasting the selector we would do normally, but we are also adding an extend with the same\n          target selector\n          // this means this new extend can then go and alter other extends\n          /\n          // this method\n          deals with all the chaining work - without it, extend is flat and doesn't work on other extend selectors\n          // this is\n          also the most expensive.. and a match on one selector can cause an extension of a selector we had already\n          // processed if we look at each selector at a time, as is done in visitRuleset\n          let extendIndex;\n          let\n          targetExtendIndex;\n          let matches;\n          const extendsToAdd = [];\n          let newSelector;\n          const\n          extendVisitor = this;\n          let selectorPath;\n          let extend;\n          let targetExtend;\n          let newExtend;\n          iterationCount = iterationCount || 0;\n          // loop through comparing every extend with every target extend.\n          // a target extend is the one on the ruleset we are looking at copy/edit/pasting in place\n          // e.g. .a:extend(.b) {\n          and .b:extend(.c) {\n          then the first extend extends the second one\n          // and the second is the target.\n          // the\n          separation into two lists allows us to process a subset of chains with a bigger set, as is the\n          // case when\n          processing media queries\n          for (extendIndex = 0; extendIndex < extendsList.length; extendIndex++) {\n          for (targetExtendIndex = 0; targetExtendIndex < extendsListTarget.length; targetExtendIndex++) {\n          extend = extendsList[extendIndex];\n          targetExtend = extendsListTarget[targetExtendIndex];\n          // look for circular references\n          if ( extend.parent_ids.indexOf( targetExtend.object_id ) >= 0 ) { continue;\n          }\n          // find a match in the target extends self selector (the bit before :extend)\n          selectorPath =\n          [targetExtend.selfSelectors[0]];\n          matches = extendVisitor.findMatch(extend, selectorPath);\n          if\n          (matches.length) {\n            extend.hasFoundMatches = true;\n            // we found a match, so for each\n            self selector..\n            extend.selfSelectors.forEach(function(selfSelector) {\n              const info =\n              targetExtend.visibilityInfo();\n              // process the extend as usual\n              newSelector =\n              extendVisitor.extendSelector(matches, selectorPath, selfSelector, extend.isVisible());\n              // but now\n              we create a new extend from it\n              newExtend = new(tree.Extend)(targetExtend.selector,\n              targetExtend.option, 0, targetExtend.fileInfo(), info);\n              newExtend.selfSelectors = newSelector;\n              // add the extend onto the list of extends for that selector\n              newSelector[newSelector.length\n              - 1].extendList = [newExtend];\n              // record that we need to add it.\n              extendsToAdd.push(newExtend);\n              newExtend.ruleset = targetExtend.ruleset;\n              //\n              remember its parents for circular references\n              newExtend.parent_ids =\n              newExtend.parent_ids.concat(targetExtend.parent_ids, extend.parent_ids);\n              // only process the\n              selector once.. if we have :extend(.a,.b) then multiple\n              // extends will look at the same selector path,\n              so when extending\n              // we know that any others will be duplicates in terms of what is added to the

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css\n          if (targetExtend.firstExtendOnThisSelectorPath) {\n
newExtend.firstExtendOnThisSelectorPath = true;\n
targetExtend.ruleset.paths.push(newSelector);\n          }\n          });\n          }\n          }\n
}\n\n    if (extendsToAdd.length) {\n          // try to detect circular references to stop a stack overflow.\n          //\n          // may no longer be needed.\n          this.extendChainCount++;\n          if (iterationCount > 100) {\n          let\n          selectorOne = '{unable to calculate}';\n          let selectorTwo = '{unable to calculate}';\n          try {\n          selectorOne = extendsToAdd[0].selfSelectors[0].toCSS();\n          selectorTwo =\n          extendsToAdd[0].selector.toCSS();\n          }\n          catch (e) {\n          throw { message: `extend\n          circular reference detected. One of the circular extends is currently:${selectorOne}:extend(${selectorTwo})`};\n          }\n          // now process the new extends on the existing rules so that we can handle a extending b extending c\n          // d extending e...\n          return\n          extendsToAdd.concat(extendVisitor.doExtendChaining(extendsToAdd, extendsListTarget, iterationCount + 1));\n          } else {\n          return extendsToAdd;\n          }\n          }\n          visitDeclaration(ruleNode, visitArgs) {\n          visitArgs.visitDeeper = false;\n          }\n          visitMixinDefinition(mixinDefinitionNode, visitArgs) {\n          visitArgs.visitDeeper = false;\n          }\n          visitSelector(selectorNode, visitArgs) {\n          visitArgs.visitDeeper =\n          false;\n          }\n          visitRuleset(rulesetNode, visitArgs) {\n          if (rulesetNode.root) {\n          return;\n          }\n          let matches;\n          let pathIndex;\n          let extendIndex;\n          const allExtends =\n          this.allExtendsStack[this.allExtendsStack.length - 1];\n          const selectorsToAdd = [];\n          const extendVisitor =\n          this;\n          let selectorPath;\n          // look at each selector path in the ruleset, find any extend matches and then\n          // copy, find and replace\n          for (extendIndex = 0; extendIndex < allExtends.length; extendIndex++) {\n          for (pathIndex = 0; pathIndex < rulesetNode.paths.length; pathIndex++) {\n          selectorPath =\n          rulesetNode.paths[pathIndex];\n          // extending extends happens initially, before the main pass\n          if\n          (rulesetNode.extendOnEveryPath) { continue; }\n          const extendList = selectorPath[selectorPath.length -\n          1].extendList;\n          if (extendList && extendList.length) { continue; }\n          matches =\n          this.findMatch(allExtends[extendIndex], selectorPath);\n          if (matches.length) {\n          allExtends[extendIndex].hasFoundMatches = true;\n          allExtends[extendIndex].selfSelectors.forEach(function(selfSelector) {\n          let extendedSelectors;\n          extendedSelectors = extendVisitor.extendSelector(matches, selectorPath, selfSelector,\n          allExtends[extendIndex].isVisible());\n          selectorsToAdd.push(extendedSelectors);\n          });\n          }\n          }\n          }\n          rulesetNode.paths = rulesetNode.paths.concat(selectorsToAdd);\n          }\n          }\n          findMatch(extend, haystackSelectorPath) {\n          //\n          // look through the haystack selector path to try and find\n          // the needle - extend.selector\n          // returns an array of selector matches that can then be replaced\n          //\n          let\n          haystackSelectorIndex;\n          let haystackSelector;\n          let haystackElementIndex;\n          let\n          haystackElement;\n          let targetCombinator;\n          let i;\n          const extendVisitor = this;\n          const\n          needleElements = extend.selector.elements;\n          const potentialMatches = [];\n          let potentialMatch;\n          const\n          matches = [];\n          // loop through the haystack elements\n          for (haystackSelectorIndex = 0;\n          haystackSelectorIndex < haystackSelectorPath.length; haystackSelectorIndex++) {\n          haystackSelector =\n          haystackSelectorPath[haystackSelectorIndex];\n          for (haystackElementIndex = 0; haystackElementIndex\n          < haystackSelector.elements.length; haystackElementIndex++) {\n          haystackElement =\n          haystackSelector.elements[haystackElementIndex];\n          // if we allow elements before our match we can\n          // add a potential match every time. otherwise only at the first element.\n          if (extend.allowBefore ||\n          (haystackSelectorIndex === 0 && haystackElementIndex === 0)) {\n          potentialMatches.push({pathIndex: haystackSelectorIndex, index: haystackElementIndex, matched: 0,\n          initialCombinator: haystackElement.combinator});\n          }\n          }\n          for (i = 0; i <\n          potentialMatches.length; i++) {\n          potentialMatch = potentialMatches[i];\n          // selectors add\n          // \" \" onto the first element. When we use & it joins the selectors together, but if we don't\n          // then each\n          // selector in haystackSelectorPath has a space before it added in the toCSS phase. so we need to\n          // work\n          // out what the resulting combinator will be\n          targetCombinator = haystackElement.combinator.value;\n          }

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        if (targetCombinator === " && hackstackElementIndex === 0) {\n                targetCombinator = ' '; \n
        }\n        // if we don't match, null our match to indicate failure\n        if
(!extendVisitor.isElementValuesEqual(needleElements[potentialMatch.matched].value, haystackElement.value) ||\n
        (potentialMatch.matched > 0 && needleElements[potentialMatch.matched].combinator.value !==
targetCombinator)) {\n                potentialMatch = null;\n        } else {\n
potentialMatch.matched++;\n        }\n        // if we are still valid and have finished, test whether we
have elements after and whether these are allowed\n        if (potentialMatch) {\n
potentialMatch.finished = potentialMatch.matched === needleElements.length;\n        if
(potentialMatch.finished &&\n        (!extend.allowAfter &&\n
(hackstackElementIndex + 1 < hackstackSelector.elements.length || haystackSelectorIndex + 1 <
haystackSelectorPath.length))) {\n                potentialMatch = null;\n        }\n        }\n
        // if null we remove, if not, we are still valid, so either push as a valid match or continue\n        if
(potentialMatch) {\n                if (potentialMatch.finished) {\n                        potentialMatch.length =
needleElements.length;\n                        potentialMatch.endPathIndex = haystackSelectorIndex;\n
potentialMatch.endPathElementIndex = hackstackElementIndex + 1; // index after end of match\n
potentialMatches.length = 0; // we don't allow matches to overlap, so start matching again\n
matches.push(potentialMatch);\n                }\n        } else {\n                potentialMatches.splice(i,
1);\n                i--;\n        }\n        }\n        }\n        }\n        return matches;\n    }\n\n
isElementValuesEqual(elementValue1, elementValue2) {\n        if (typeof elementValue1 === 'string' || typeof
elementValue2 === 'string') {\n                return elementValue1 === elementValue2;\n        }\n        if (elementValue1
instanceof tree.Attribute) {\n                if (elementValue1.op !== elementValue2.op || elementValue1.key !==
elementValue2.key) {\n                        return false;\n                }\n                if (!elementValue1.value || !elementValue2.value)
{\n                        if (elementValue1.value || elementValue2.value) {\n                                return false;\n                        }\n
return true;\n                }\n                elementValue1 = elementValue1.value.value || elementValue1.value;\n
elementValue2 = elementValue2.value.value || elementValue2.value;\n                return elementValue1 ===
elementValue2;\n        }\n        elementValue1 = elementValue1.value;\n        elementValue2 =
elementValue2.value;\n        if (elementValue1 instanceof tree.Selector) {\n                if (!(elementValue2 instanceof
tree.Selector) || elementValue1.elements.length !== elementValue2.elements.length) {\n                        return false;\n
                }\n                for (let i = 0; i < elementValue1.elements.length; i++) {\n                        if
(elementValue1.elements[i].combinator.value !== elementValue2.elements[i].combinator.value) {\n                                if (i
!== 0 || (elementValue1.elements[i].combinator.value || ' ') !== (elementValue2.elements[i].combinator.value || ' '))
{\n                                        return false;\n                                }\n                                }\n                                if
(!this.isElementValuesEqual(elementValue1.elements[i].value, elementValue2.elements[i].value)) {\n                                        return
false;\n                                }\n                                }\n                                return true;\n                        }\n                }\n                return false;\n        }\n        }\n        }\n        return false;\n    }\n\n
extendSelector(matches, selectorPath, replacementSelector, isVisible) {\n        // for a set of matches, replace each
match with the replacement selector\n        let currentSelectorPathIndex = 0, currentSelectorPathElementIndex = 0,\n
path = [], matchIndex, selector, firstElement, match, newElements;\n        for (matchIndex = 0; matchIndex <
matches.length; matchIndex++) {\n                match = matches[matchIndex];\n                selector =
selectorPath[match.pathIndex];\n                firstElement = new tree.Element(\n                        match.initialCombinator,\n
replacementSelector.elements[0].value,\n                        replacementSelector.elements[0].isVariable,\n
replacementSelector.elements[0].getIndex(),\n                        replacementSelector.elements[0].fileInfo()\n                );\n        }\n        if (match.pathIndex > currentSelectorPathIndex && currentSelectorPathElementIndex > 0) {\n
path[path.length - 1].elements = path[path.length - 1]\n        .elements.concat(selectorPath[currentSelectorPathIndex].elements.slice(currentSelectorPathElementIndex));\n
currentSelectorPathElementIndex = 0;\n                currentSelectorPathIndex++;\n        }\n        newElements = selector.elements\n        .slice(currentSelectorPathElementIndex, match.index)\n        .concat([firstElement])\n        .concat(replacementSelector.elements.slice(1));\n        if
(currentSelectorPathIndex === match.pathIndex && matchIndex > 0) {\n                path[path.length - 1].elements

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=\\n      path[path.length - 1].elements.concat(newElements);\\n      } else {\\n      path =
path.concat(selectorPath.slice(currentSelectorPathIndex, match.pathIndex));\\n      path.push(new
tree.Selector(\\n      newElements\\n      ));\\n      }\\n      currentSelectorPathIndex =
match.endPathIndex;\\n      currentSelectorPathElementIndex = match.endPathElementIndex;\\n      if
(currentSelectorPathElementIndex >= selectorPath[currentSelectorPathIndex].elements.length) {\\n
currentSelectorPathElementIndex = 0;\\n      currentSelectorPathIndex++;\\n      }\\n      }\\n      if
(currentSelectorPathIndex < selectorPath.length && currentSelectorPathElementIndex > 0) {\\n
path[path.length - 1].elements = path[path.length - 1]\\n
.elements.concat(selectorPath[currentSelectorPathIndex].elements.slice(currentSelectorPathElementIndex));\\n
currentSelectorPathIndex++;\\n      }\\n      path = path.concat(selectorPath.slice(currentSelectorPathIndex,
selectorPath.length));\\n      path = path.map(function (currentValue) {\\n      // we can re-use elements here,
because the visibility property matters only for selectors\\n      const derived =
currentValue.createDerived(currentValue.elements);\\n      if (isVisible) {\\n      derived.ensureVisibility();\\n
      } else {\\n      derived.ensureInvisibility();\\n      }\\n      return derived;\\n      });\\n      return
path;\\n      }\\n      visitMedia(mediaNode, visitArgs) {\\n      let newAllExtends =
mediaNode.allExtends.concat(this.allExtendsStack[this.allExtendsStack.length - 1]);\\n      newAllExtends =
newAllExtends.concat(this.doExtendChaining(newAllExtends, mediaNode.allExtends));\\n
this.allExtendsStack.push(newAllExtends);\\n      }\\n      visitMediaOut(mediaNode) {\\n      const lastIndex =
this.allExtendsStack.length - 1;\\n      this.allExtendsStack.length = lastIndex;\\n      }\\n      visitAtRule(atRuleNode,
visitArgs) {\\n      let newAllExtends =
atRuleNode.allExtends.concat(this.allExtendsStack[this.allExtendsStack.length - 1]);\\n      newAllExtends =
newAllExtends.concat(this.doExtendChaining(newAllExtends, atRuleNode.allExtends));\\n
this.allExtendsStack.push(newAllExtends);\\n      }\\n      visitAtRuleOut(atRuleNode) {\\n      const lastIndex =
this.allExtendsStack.length - 1;\\n      this.allExtendsStack.length = lastIndex;\\n      }\\n      }\\n      export default
ProcessExtendsVisitor;\\n      ", "import Visitor from './visitor';\\n      \\n      class JoinSelectorVisitor {\\n      constructor() {\\n
this.contexts = [[]];\\n      this._visitor = new Visitor(this);\\n      }\\n      run(root) {\\n      return
this._visitor.visit(root);\\n      }\\n      visitDeclaration(declNode, visitArgs) {\\n      visitArgs.visitDeeper = false;\\n
      }\\n      visitMixinDefinition(mixinDefinitionNode, visitArgs) {\\n      visitArgs.visitDeeper = false;\\n      }\\n
      visitRuleset(rulesetNode, visitArgs) {\\n      const context = this.contexts[this.contexts.length - 1];\\n      const paths
= [];\\n      let selectors;\\n      this.contexts.push(paths);\\n      if (!rulesetNode.root) {\\n      selectors =
rulesetNode.selectors;\\n      if (selectors) {\\n      selectors = selectors.filter(function(selector) { return
selector.getIsOutput(); });\\n      rulesetNode.selectors = selectors.length ? selectors : (selectors = null);\\n
      if (selectors) { rulesetNode.joinSelectors(paths, context, selectors); }\\n      if (!selectors) {
rulesetNode.rules = null; }\\n      rulesetNode.paths = paths;\\n      }\\n      }\\n      visitRulesetOut(rulesetNode) {\\n
      this.contexts.length = this.contexts.length - 1;\\n      }\\n      visitMedia(mediaNode, visitArgs) {\\n      const
context = this.contexts[this.contexts.length - 1];\\n      mediaNode.rules[0].root = (context.length === 0 ||
context[0].multiMedia);\\n      }\\n      visitAtRule(atRuleNode, visitArgs) {\\n      const context =
this.contexts[this.contexts.length - 1];\\n      if (atRuleNode.rules && atRuleNode.rules.length) {\\n
atRuleNode.rules[0].root = (atRuleNode.isRooted || context.length === 0 || null);\\n      }\\n      }\\n      }\\n      export default
JoinSelectorVisitor;\\n      ", "import tree from './tree';\\n      import Visitor from './visitor';\\n      \\n      class CSSVisitorUtils {\\n
constructor(context) {\\n      this._visitor = new Visitor(this);\\n      this._context = context;\\n      }\\n      containsSilentNonBlockedChild(bodyRules) {\\n      let rule;\\n      if (!bodyRules) {\\n      return false;\\n      }\\n
      for (let r = 0; r < bodyRules.length; r++) {\\n      rule = bodyRules[r];\\n      if (rule.isSilent &&
rule.isSilent(this._context) && !rule.blocksVisibility()) {\\n      // the atrule contains something that was
referenced (likely by extend)\\n      // therefore it needs to be shown in output too\\n      return true;\\n
      }\\n      }\\n      return false;\\n      }\\n      keepOnlyVisibleChilds(owner) {\\n      if (owner && owner.rules) {\\n
owner.rules = owner.rules.filter(thing => thing.isVisible());\\n      }\\n      }\\n      isEmpty(owner) {\\n      return
(owner && owner.rules) \\n      ? (owner.rules.length === 0) : true;\\n      }\\n      isVisibleSelector(rulesetNode)

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    return (rulesetNode && rulesetNode.paths) ? (rulesetNode.paths.length > 0) : false;
  }
  resolveVisibility(node, originalRules) {
    if (!node.blocksVisibility()) {
      if (this.isEmpty(node) && !this.containsSilentNonBlockedChild(originalRules)) {
        return ;
      }
      return node;
    }
    const compiledRulesBody = node.rules[0];
    this.keepOnlyVisibleChilds(compiledRulesBody);
    if (this.isEmpty(compiledRulesBody)) {
      return ;
    }
    node.ensureVisibility();
    node.removeVisibilityBlock();
    return node;
  }
  isVisibleRuleset(rulesetNode) {
    if (rulesetNode.firstRoot) {
      return true;
    }
    if (this.isEmpty(rulesetNode)) {
      return false;
    }
    if (!rulesetNode.root && !this.hasVisibleSelector(rulesetNode)) {
      return false;
    }
    return true;
  }
}
const ToCSSVisitor = function(context) {
  this._visitor = new Visitor(this);
  this._context = context;
  this.utils = new CSSVisitorUtils(context);
};
ToCSSVisitor.prototype = {
  isReplacing: true,
  run: function (root) {
    return this._visitor.visit(root);
  },
  visitDeclaration: function (declNode, visitArgs) {
    if (declNode.blocksVisibility() || declNode.variable) {
      return ;
    }
    return declNode;
  },
  visitMixinDefinition: function (mixinNode, visitArgs) {
    // mixin definitions do not get eval'd - this means they keep state
    // so we have to clear that state here so it isn't used if toCSS is called twice
    mixinNode.frames = [];
  },
  visitExtend: function (extendNode, visitArgs) {
  },
  visitComment: function (commentNode, visitArgs) {
    if (commentNode.blocksVisibility() || commentNode.isSilent(this._context)) {
      return ;
    }
    return commentNode;
  },
  visitMedia: function (mediaNode, visitArgs) {
    const originalRules = mediaNode.rules[0].rules;
    mediaNode.accept(this._visitor);
    visitArgs.visitDeeper = false;
    return this.utils.resolveVisibility(mediaNode, originalRules);
  },
  visitImport: function (importNode, visitArgs) {
    if (importNode.blocksVisibility()) {
      return ;
    }
    return importNode;
  },
  visitAtRule: function (atRuleNode, visitArgs) {
    if (atRuleNode.rules && atRuleNode.rules.length) {
      return this.visitAtRuleWithBody(atRuleNode, visitArgs);
    } else {
      return this.visitAtRuleWithoutBody(atRuleNode, visitArgs);
    }
  },
  visitAnonymous: function (anonymousNode, visitArgs) {
    if (!anonymousNode.blocksVisibility()) {
      anonymousNode.accept(this._visitor);
      return anonymousNode;
    }
  },
  visitAtRuleWithBody: function (atRuleNode, visitArgs) {
    // if there is only one nested ruleset and that one has no path, then it is
    // just fake ruleset
    function hasFakeRuleset(atRuleNode) {
      const bodyRules = atRuleNode.rules;
      return bodyRules.length === 1 && (!bodyRules[0].paths || bodyRules[0].paths.length === 0);
    }
    function getBodyRules(atRuleNode) {
      const nodeRules = atRuleNode.rules;
      if (hasFakeRuleset(atRuleNode)) {
        return nodeRules[0].rules;
      }
      return nodeRules;
    }
    // it is still true that it is only one ruleset in array
    // this is last such moment
    // process child's
    const originalRules = getBodyRules(atRuleNode);
    atRuleNode.accept(this._visitor);
    visitArgs.visitDeeper = false;
    if (!this.utils.isEmpty(atRuleNode)) {
      this._mergeRules(atRuleNode.rules[0].rules);
    }
    return this.utils.resolveVisibility(atRuleNode, originalRules);
  },
  visitAtRuleWithoutBody: function (atRuleNode, visitArgs) {
    if (atRuleNode.blocksVisibility()) {
      return ;
    }
    if (atRuleNode.name === '@charset') {
      // Only output the debug info together with subsequent @charset definitions
      // a comment (or @media statement) before the actual @charset atrule would
      // be considered illegal css as it has to be on the first line
      if (this.charset) {
        if (atRuleNode.debugInfo) {
          const comment = new tree.Comment(`/* ${atRuleNode.toCSS(this._context).replace(/\n/g, '')} *\n`);
          comment.debugInfo = atRuleNode.debugInfo;
          return this._visitor.visit(comment);
        }
        return ;
      }
      this.charset = true;
    }
    return atRuleNode;
  },
  checkValidNodes: function (rules, isRoot) {
    if (!rules) {
      return ;
    }
    for (let i = 0; i < rules.length; i++) {
      const ruleNode = rules[i];
      if (isRoot && ruleNode instanceof tree.Declaration && !ruleNode.variable) {
        throw { message: 'Properties must be inside selector blocks. They cannot be in the root', index: ruleNode.getIndex(), filename: ruleNode.fileInfo() && ruleNode.fileInfo().filename };
      }
      if (ruleNode instanceof tree.Call) {
        throw { message: `Function '${ruleNode.name}' did not return a root` };
      }
    }
  }
};

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node`,\n          index: ruleNode.getIndex(), filename: ruleNode.fileInfo() && ruleNode.fileInfo().filename};\n      }\n      if (ruleNode.type && !ruleNode.allowRoot) {\n          throw { message: `${ruleNode.type} node\nreturned by a function is not valid here`,\n          index: ruleNode.getIndex(), filename: ruleNode.fileInfo() &&\nruleNode.fileInfo().filename};\n      }\n      },\n      visitRuleset: function (rulesetNode, visitArgs) {\n// at this point rulesets are nested into each other\n      let rule;\n      const rulesets = [];\n      this.checkValidNodes(rulesetNode.rules, rulesetNode.firstRoot);\n      if (!rulesetNode.root) {\n          // remove\ninvisible paths\n          this._compileRulesetPaths(rulesetNode);\n          // remove rulesets from this ruleset body\nand compile them separately\n          const nodeRules = rulesetNode.rules;\n          let nodeRuleCnt = nodeRules\n? nodeRules.length : 0;\n          for (let i = 0; i < nodeRuleCnt; ) {\n              rule = nodeRules[i];\n              if\n(rule && rule.rules) {\n                  // visit because we are moving them out from being a child\nrulesets.push(this._visitor.visit(rule));\n                  nodeRules.splice(i, 1);\n                  nodeRuleCnt--;\n                  continue;\n              }\n              i++;\n          }\n          // accept the visitor to remove rules and refactor itself\n          // then we can decide nogw whether we want it or not\n          // compile body\n          if (nodeRuleCnt > 0)\n{\n            rulesetNode.accept(this._visitor);\n          } else {\n            rulesetNode.rules = null;\n          }\n          visitArgs.visitDeeper = false;\n        } else { // if (! rulesetNode.root) {\nrulesetNode.accept(this._visitor);\n          visitArgs.visitDeeper = false;\n        }\n        if (rulesetNode.rules) {\n            this._mergeRules(rulesetNode.rules);\n            this._removeDuplicateRules(rulesetNode.rules);\n        }\n// now decide whether we keep the ruleset\n        if (this.utils.isVisibleRuleset(rulesetNode)) {\nrulesetNode.ensureVisibility();\n            rulesets.splice(0, 0, rulesetNode);\n        }\n        if (rulesets.length === 1)\n{\n            return rulesets[0];\n        }\n        return rulesets;\n    },\n    _compileRulesetPaths: function(rulesetNode)\n{\n        if (rulesetNode.paths) {\n            rulesetNode.paths = rulesetNode.paths\n                .filter(p => {\n                    let i;\n                    if (p[0].elements[0].combinator.value === ' ') {\n                        p[0].elements[0].combinator =\nnew(tree.Combinator)('');\n                    }\n                    for (i = 0; i < p.length; i++) {\n                        if\n(p[i].isVisible() && p[i].getIsOutput()) {\n                            return true;\n                        }\n                    }\n                    return false;\n                });\n        }\n    },\n    _removeDuplicateRules: function(rules) {\n        if (!rules) {\nreturn; }\n        // remove duplicates\n        const ruleCache = {};\n        let ruleList;\n        let rule;\n        let i;\n        for (i = rules.length - 1; i >= 0; i--) {\n            rule = rules[i];\n            if (rule instanceof tree.Declaration) {\n                if (!ruleCache[rule.name]) {\n                    ruleCache[rule.name] = rule;\n                } else {\nruleList = ruleCache[rule.name];\n                    if (ruleList instanceof tree.Declaration) {\n                        ruleList =\nruleCache[rule.name] = [ruleCache[rule.name].toCSS(this._context)];\n                    }\n                    const ruleCSS =\nrule.toCSS(this._context);\n                    if (ruleList.indexOf(ruleCSS) !== -1) {\n                        rules.splice(i, 1);\n                    } else {\n                        ruleList.push(ruleCSS);\n                    }\n                }\n            }\n        }\n    },\n    _mergeRules: function(rules) {\n        if (!rules) {\n            return;\n        }\n        const groups = {};\n        const\n        groupsArr = [];\n        for (let i = 0; i < rules.length; i++) {\n            const rule = rules[i];\n            if (rule.merge)\n{\n                const key = rule.name;\n                groups[key] ? rules.splice(i--, 1) : \n                groupsArr.push(groups[key] = []);\n                groups[key].push(rule);\n            }\n        }\n        groupsArr.forEach(group => {\n            if (group.length > 0) {\n                const result = group[0];\n                let\n                space = [];\n                const comma = [new tree.Expression(space)];\n                group.forEach(rule => {\n                    if ((rule.merge === '+') && (space.length > 0)) {\n                        comma.push(new tree.Expression(space =\n[]));\n                    }\n                    space.push(rule.value);\n                    result.important = result.important ||\nrule.important;\n                });\n                result.value = new tree.Value(comma);\n            }\n        });\n    }\n};\n\nexport default ToCSSVisitor;\n", "import Visitor from './visitor';\nimport ImportVisitor from './import-visitor';\nimport MarkVisibleSelectorsVisitor from './set-tree-visibility-visitor';\nimport ExtendVisitor from './extend-visitor';\nimport JoinSelectorVisitor from './join-selector-visitor';\nimport ToCSSVisitor from './to-css-visitor';\n\nexport default {\n    Visitor,\n    ImportVisitor,\n    MarkVisibleSelectorsVisitor,\n    ExtendVisitor,\n    JoinSelectorVisitor,\n    ToCSSVisitor\n};\n", "import chunker from './chunker';\n\nexport default () => {\n    let //\n    Less input string\n    input;\n\n    let // current chunk\n    j;\n\n    const // holds state for backtracking\n    saveStack = [];\n\n    let // furthest index the parser has gone to\n    furthest;\n\n    let // if this is furthest we got to,\n
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this is the probably cause\n    furthestPossibleErrorMessage;\n\n    let // chunkified input\n    chunks;\n\n    let //
current chunk\n    current;\n\n    let // index of current chunk, in `input`\n    currentPos;\n\n    const parserInput
= {};\n    const CHARCODE_SPACE = 32;\n    const CHARCODE_TAB = 9;\n    const CHARCODE_LF = 10;\n
const CHARCODE_CR = 13;\n    const CHARCODE_PLUS = 43;\n    const CHARCODE_COMMA = 44;\n
const CHARCODE_FORWARD_SLASH = 47;\n    const CHARCODE_9 = 57;\n\n    function
skipWhitespace(length) {\n    const oldi = parserInput.i;\n    const oldj = j;\n    const curr = parserInput.i -
currentPos;\n    const endIndex = parserInput.i + current.length - curr;\n    const mem = (parserInput.i +=
length);\n    const inp = input;\n    let c;\n    let nextChar;\n    let comment;\n\n    for (; parserInput.i <
endIndex; parserInput.i++) {\n    c = inp.charCodeAt(parserInput.i);\n\n    if
(parserInput.autoCommentAbsorb && c === CHARCODE_FORWARD_SLASH) {\n    nextChar =
inp.charAt(parserInput.i + 1);\n    if (nextChar === '/') {\n    comment = {index: parserInput.i,
isLineComment: true};\n    let nextNewLine = inp.indexOf('\n', parserInput.i + 2);\n    if
(nextNewLine < 0) {\n    nextNewLine = endIndex;\n    }\n    parserInput.i =
nextNewLine;\n    comment.text = inp.substr(comment.index, parserInput.i - comment.index);\n
parserInput.commentStore.push(comment);\n    continue;\n    } else if (nextChar === '*') {\n
const nextStarSlash = inp.indexOf('*/', parserInput.i + 2);\n    if (nextStarSlash >= 0) {\n
comment = {\n    index: parserInput.i,\n    text: inp.substr(parserInput.i, nextStarSlash
+ 2 - parserInput.i),\n    isLineComment: false;\n    };\n    parserInput.i +=
comment.text.length - 1;\n    parserInput.commentStore.push(comment);\n    continue;\n
}\n    }\n    break;\n    }\n\n    if ((c !== CHARCODE_SPACE) && (c !==
CHARCODE_LF) && (c !== CHARCODE_TAB) && (c !== CHARCODE_CR)) {\n    break;\n    }\n
}\n\n    current = current.slice(length + parserInput.i - mem + curr);\n    currentPos = parserInput.i;\n\n
if (!current.length) {\n    if (j < chunks.length - 1) {\n    current = chunks[++j];\n
skipWhitespace(0); // skip space at the beginning of a chunk\n    return true; // things changed\n    }\n
parserInput.finished = true;\n    }\n\n    return oldi !== parserInput.i || oldj !== j;\n    }\n\n    parserInput.save
= () => {\n    currentPos = parserInput.i;\n    saveStack.push( { current, i: parserInput.i, j });\n    };\n
parserInput.restore = possibleErrorMessage => {\n\n    if (parserInput.i > furthest || (parserInput.i === furthest
&& possibleErrorMessage && !furthestPossibleErrorMessage)) {\n    furthest = parserInput.i;\n
furthestPossibleErrorMessage = possibleErrorMessage;\n    }\n    const state = saveStack.pop();\n    current =
state.current;\n    currentPos = parserInput.i = state.i;\n    j = state.j;\n    };\n    parserInput.forget = () => {\n
saveStack.pop();\n    };\n    parserInput.isWhitespace = offset => {\n    const pos = parserInput.i + (offset || 0);\n
const code = input.charCodeAt(pos);\n    return (code === CHARCODE_SPACE || code === CHARCODE_CR
|| code === CHARCODE_TAB || code === CHARCODE_LF);\n    };\n\n    // Specialization of $(tok)\n
parserInput.$re = tok => {\n    if (parserInput.i > currentPos) {\n    current = current.slice(parserInput.i -
currentPos);\n    currentPos = parserInput.i;\n    }\n\n    const m = tok.exec(current);\n    if (!m) {\n
return null;\n    }\n\n    skipWhitespace(m[0].length);\n    if (typeof m === 'string') {\n    return m;\n
}\n\n    return m.length === 1 ? m[0] : m;\n    };\n\n    parserInput.$char = tok => {\n    if
(input.charAt(parserInput.i) !== tok) {\n    return null;\n    }\n\n    skipWhitespace(1);\n    return tok;\n
};\n\n    parserInput.$str = tok => {\n    const tokLength = tok.length;\n\n    // https://jspdf.com/string-
startswith/21\n    for (let i = 0; i < tokLength; i++) {\n    if (input.charAt(parserInput.i + i) !== tok.charAt(i))
{\n    return null;\n    }\n    }\n\n    skipWhitespace(tokLength);\n    return tok;\n    };\n\n
parserInput.$quoted = loc => {\n    const pos = loc || parserInput.i;\n    const startChar = input.charAt(pos);\n
if (startChar !== '"' && startChar !== "'") {\n    return;\n    }\n    const length = input.length;\n
const currentPosition = pos;\n\n    for (let i = 1; i + currentPosition < length; i++) {\n    const nextChar =
input.charAt(i + currentPosition);\n    switch (nextChar) {\n    case '\\\\':\n    i++;\n
continue;\n    case '\\r':\n    case '\\n':\n    break;\n    case startChar:\n
const str = input.substr(currentPosition, i + 1);\n    if (!loc && loc !== 0) {\n
skipWhitespace(i + 1);\n    return str;\n    }\n    return [startChar, str];\n    }
}

```

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default:\n      }\n      }\n      return null;\n    };\n\n    /**\n     * Permissive parsing. Ignores everything except
matching { } [ ] ( ) and quotes\n     * until matching token (outside of blocks)\n     */\n    parserInput.$parseUntil = tok
=> {\n      let quote = "";\n      let returnVal = null;\n      let inComment = false;\n      let blockDepth = 0;\n      const blockStack = [];\n      const parseGroups = [];\n      const length = input.length;\n      const startPos =
parserInput.i;\n      let lastPos = parserInput.i;\n      let i = parserInput.i;\n      let loop = true;\n      let
testChar;\n\n      if (typeof tok === 'string') {\n        testChar = char => char === tok\n      } else {\n
testChar = char => tok.test(char)\n      }\n\n      do {\n        let prevChar;\n        let nextChar =
input.charAt(i);\n        if (blockDepth === 0 && testChar(nextChar)) {\n          returnVal =
input.substr(lastPos, i - lastPos);\n          if (returnVal) {\n            parseGroups.push(returnVal);\n
          }\n          else {\n            parseGroups.push('');\n          }\n          returnVal = parseGroups;\n
skipWhitespace(i - startPos);\n          loop = false;\n        } else {\n          if (inComment) {\n            if
(nextChar === '*' && \n            input.charAt(i + 1) === '/') {\n              i++;\n
blockDepth--;\n              inComment = false;\n            }\n            i++;\n            continue;\n
          }\n          switch (nextChar) {\n            case '\\\\':\n              i++;\n              nextChar =
input.charAt(i);\n              parseGroups.push(input.substr(lastPos, i - lastPos + 1));\n              lastPos = i
+ 1;\n              break;\n            case '/':\n              if (input.charAt(i + 1) === '*') {\n                i++;\n
inComment = true;\n                blockDepth++;\n              }\n              break;\n            case '\\':\n            case '\"':\n              quote = parserInput.$quoted(i);\n
if (quote) {\n              parseGroups.push(input.substr(lastPos, i - lastPos), quote);\n              i +=
quote[1].length - 1;\n              lastPos = i + 1;\n            }\n            else {\n              skipWhitespac
e(i - startPos);\n              returnVal = nextChar;\n              loop = false;\n            }\n          }\n          break;\n          case '{':\n            blockStack.push('{');\n
blockDepth++;\n            break;\n          case '(':\n            blockStack.push('(');\n
blockDepth++;\n            break;\n          case '[':\n            blockStack.push('[');\n
blockDepth++;\n            break;\n          case '}':\n            case ')':\n            case ']':\n              const expected = blockStack.pop();\n              if (nextChar === expected) {\n                blockDepth-
-;\n              } else {\n                // move the parser to the error and return expected\n
skipWhitespace(i - startPos);\n                returnVal = expected;\n                loop = false;\n              }\n
            }\n            i++;\n            if (i > length) {\n              loop = false;\n            }\n            }\n
prevChar = nextChar;\n          } while (loop);\n          return returnVal ? returnVal : null;\n        }\n\n      parserInput.autoCommentAbsorb = true;\n      parserInput.commentStore = [];\n      parserInput.finished = false;\n\n      // Same as $(), but don't change the state of the parser,\n      // just return the match.\n      parserInput.peek = tok => {\n        if (typeof tok === 'string') {\n          // https://jsperf.com/string-startswith/21\n          for (let i = 0; i <
tok.length; i++) {\n            if (input.charAt(parserInput.i + i) !== tok.charAt(i)) {\n              return false;\n
            }\n            return true;\n          } else {\n            return tok.test(current);\n          }\n        };\n\n      //
Specialization of peek()\n      // TODO remove or change some currentChar calls to peekChar\n
parserInput.peekChar = tok => input.charAt(parserInput.i) === tok;\n\n      parserInput.currentChar = () =>
input.charAt(parserInput.i);\n\n      parserInput.prevChar = () => input.charAt(parserInput.i - 1);\n\n      parserInput.getInput = () => input;\n\n      parserInput.peekNotNumeric = () => {\n        const c =
input.charCodeAt(parserInput.i);\n        // Is the first char of the dimension 0-9, '.', '+' or '-'\n        return (c >
CHARCODE_9 || c < CHARCODE_PLUS) || c === CHARCODE_FORWARD_SLASH || c ===
CHARCODE_COMMA;\n      };\n\n      parserInput.start = (str, chunkInput, failFunction) => {\n        input = str;\n
parserInput.i = j = currentPos = furthest = 0;\n\n        // chunking apparently makes things quicker (but my tests
indicate\n        // it might actually make things slower in node at least)\n        // and it is a non-perfect parse - it can't
recognise\n        // unquoted urls, meaning it can't distinguish comments\n        // meaning comments with quotes or
{ } ( ) in them get 'counted'\n        // and then lead to parse errors.\n        // In addition if the chunking chunks in the
wrong place we might\n        // not be able to parse a parser statement in one go\n        // this is officially deprecated
but can be switched on via an option\n        // in the case it causes too much performance issues.\n        if

```





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    }\n    };\n\n    globalVars = (additionalData && additionalData.globalVars) ?
`${Parser.serializeVars(additionalData.globalVars)}\n` : `";\n    modifyVars = (additionalData &&
additionalData.modifyVars) ? `${Parser.serializeVars(additionalData.modifyVars)} ` : `";\n\n    if
(context.pluginManager) {\n        const preProcessors = context.pluginManager.getPreProcessors();\n
for (let i = 0; i < preProcessors.length; i++) {\n            str = preProcessors[i].process(str, { context, imports,
fileInfo });\n        }\n    }\n\n    if (globalVars || (additionalData && additionalData.banner)) {\n
preText = ((additionalData && additionalData.banner) ? additionalData.banner : ") + globalVars;\n
ignored = imports.contentsIgnoredChars;\n    ignored[fileInfo.filename] = ignored[fileInfo.filename] || 0;\n
    ignored[fileInfo.filename] += preText.length;\n    }\n\n    str = str.replace(/\\r\\n?/g, "\\n");\n    //
Remove potential UTF Byte Order Mark\n    str = preText + str.replace(/^\\uFEFF/, ") + modifyVars;\n
imports.contents[fileInfo.filename] = str;\n\n    // Start with the primary rule.\n    // The whole syntax tree
is held under a Ruleset node,\n    // with the `root` property set to true, so no `{}` are\n    // output. The
callback is called when the input is parsed.\n    try {\n        parserInput.start(str, context.chunkInput,
function fail(msg, index) {\n            throw new LessError({\n                index,\n                type:
'Parse',\n                message: msg,\n                filename: fileInfo.filename\n            }, imports);\n
        });\n\n        tree.Node.prototype.parse = this;\n        root = new tree.Ruleset(null,
this.parsers.primary());\n        tree.Node.prototype.rootNode = root;\n        root.root = true;\n
root.firstRoot = true;\n        root.functionRegistry = functionRegistry.inherit();\n        }\n    } catch (e)
{\n        return callback(new LessError(e, imports, fileInfo.filename));\n    }\n\n    // If `i` is smaller
than the `input.length - 1`,\n    // it means the parser wasn't able to parse the whole\n    // string, so we've
got a parsing error.\n    //\n    // We try to extract a \\n delimited string,\n    // showing the line where
the parse error occurred.\n    //\n    // We split it up into two parts (the part which parsed,\n    // and the part
which didn't), so we can color them differently.\n    const endInfo = parserInput.end();\n    if
(!endInfo.isFinished) {\n        let message = endInfo.furthestPossibleErrorMessage;\n        if
(!message) {\n            message = 'Unrecognised input';\n            if (endInfo.furthestChar === ')') {\n
                message += ' Possibly missing opening \\(';\n            } else if (endInfo.furthestChar === ')') {\n
                message += ' Possibly missing opening \\(';;\n            } else if (endInfo.furthestReachedEnd) {\n
                message += ' Possibly missing something';\n            }\n        }\n\n        err = new LessError({\n
            type: 'Parse',\n            message,\n            index: endInfo.furthest,\n            filename:
fileInfo.filename\n        }, imports);\n    }\n\n    const finish = e => {\n        e = err || e ||
imports.error;\n        if (e) {\n            if (!(e instanceof LessError)) {\n                e = new
LessError(e, imports, fileInfo.filename);\n            }\n            return callback(e);\n        }\n
    }\n\n    else {\n        return callback(null, root);\n    }\n\n    };\n\n    if (context.processImports !==
false) {\n        new visitors.ImportVisitor(imports, finish)\n            .run(root);\n    } else {\n
return finish();\n    }\n    },\n\n    //\n    // Here in, the parsing rules/functions\n    //\n    // The basic
structure of the syntax tree generated is as follows:\n    //\n    // Ruleset -> Declaration -> Value -> Expression
-> Entity\n    //\n    // Here's some Less code:\n    //\n    // .class {\n    //     color: #fff;\n    //
border: 1px solid #000;\n    //     width: @w + 4px;\n    //     > .child {...}\n    // }\n    //\n    // And
here's what the parse tree might look like:\n    //\n    // Ruleset (Selector '.class', [\n    //     Declaration
(\"color\", Value ([Expression [Color #fff]]))\n    //     Declaration (\"border\", Value ([Expression [Dimension
1px][Keyword \"solid\"][Color #000]]))\n    //     Declaration (\"width\", Value ([Expression [Operation \"+\" + \"
[Variable \"@w\"][Dimension 4px]]]))\n    //     Ruleset (Selector [Element '>', '.child'], [...])\n    //     ])\n
//\n    // In general, most rules will try to parse a token with the `$(e)` function, and if the return\n    // value is
truly, will return a new node, of the relevant type. Sometimes, we need to check\n    // first, before parsing, that's
when we use `peek()`.\n    //\n    // parsers: parsers = {\n    //\n    // The `primary` rule is the *entry* and
*exit* point of the parser.\n    //\n    // The rules here can appear at any level of the parse tree.\n    //\n    //
The recursive nature of the grammar is an interplay between the `block`\n    // rule, which represents `{ ... }`,
the `ruleset` rule, and this `primary` rule,\n    // as represented by this simplified grammar:\n    //\n    //

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//\n      // background-color: $color\n      //\n      property: function () {\n      let name;\n      const index = parserInput.i;\n      if (parserInput.currentChar() === '$' && (name =\n      parserInput.$re(/^\\$[\\w-]+/))) {\n      return new(tree.Property)(name, index, fileInfo);\n      }\n      },\n      // A property entity using the protective {} e.g. ${prop}\n      propertyCurly: function\n      () {\n      let curly;\n      const index = parserInput.i;\n      if (parserInput.currentChar()\n      === '$' && (curly = parserInput.$re(/^\\$\\{([\\w-]+)\\}/))) {\n      return\n      new(tree.Property)('$${curly[1]}', index, fileInfo);\n      }\n      },\n      //\n      // A\n      Hexadecimal color\n      //\n      // #4F3C2F\n      //\n      // `rgb` and `hsl` colors are\n      parsed through the `entities.call` parser.\n      //\n      color: function () {\n      let rgb;\n      parserInput.save();\n      if (parserInput.currentChar() === '#' && (rgb = parserInput.$re(/^#[A-Fa-f0-9]{8}|[A-Fa-f0-9]{6}|[A-Fa-f0-9]{3,4}([\\w.#\\[\\]?)?/))) {\n      if (!rgb[2]) {\n      parserInput.forget();\n      return new(tree.Color)(rgb[1], undefined, rgb[0]);\n      }\n      }\n      parserInput.restore();\n      },\n      colorKeyword: function () {\n      parserInput.save();\n      const autoCommentAbsorb = parserInput.autoCommentAbsorb;\n      parserInput.autoCommentAbsorb = false;\n      const k = parserInput.$re(/^[_A-Za-z-][_A-Za-z0-9-]+/);\n      parserInput.autoCommentAbsorb = autoCommentAbsorb;\n      if (!k) {\n      parserInput.forget();\n      return;\n      }\n      parserInput.restore();\n      const\n      color = tree.Color.fromKeyword(k);\n      if (color) {\n      parserInput.$str(k);\n      return color;\n      }\n      },\n      //\n      // A Dimension, that is, a number and a unit\n      //\n      // 0.5em 95%\n      //\n      dimension: function () {\n      if\n      (parserInput.peekNotNumeric()) {\n      return;\n      }\n      const value =\n      parserInput.$re(/^([+]?\\d*\\.?[\\d+](%|[a-z_]+)?/i);\n      if (value) {\n      return\n      new(tree.Dimension)(value[1], value[2]);\n      }\n      },\n      //\n      // A unicode\n      descriptor, as is used in unicode-range\n      //\n      // U+0?? or U+00A1-00A9\n      //\n      unicodeDescriptor: function () {\n      let ud;\n      ud = parserInput.$re(/^U\\+[0-9a-fA-F?]+(\\-[0-9a-fA-F?]+)?/);\n      if (ud) {\n      return new(tree.UnicodeDescriptor)(ud[0]);\n      }\n      },\n      //\n      // JavaScript code to be evaluated\n      //\n      //\n      `window.location.href`\n      //\n      javascript: function () {\n      let js;\n      const\n      index = parserInput.i;\n      parserInput.save();\n      const escape = parserInput.$char('~');\n      const jsQuote = parserInput.$char('"');\n      if (!jsQuote) {\n      parserInput.restore();\n      return;\n      }\n      js = parserInput.$re(/^\\^[^]*$/);\n      if (js) {\n      parserInput.forget();\n      return new(tree.JavaScript)(js.substr(0, js.length - 1), Boolean(escape), index,\n      fileInfo);\n      }\n      parserInput.restore('invalid javascript definition');\n      }\n      },\n      //\n      // The variable part of a variable definition. Used in the `rule` parser\n      //\n      //\n      @fink;\n      //\n      variable: function () {\n      let name;\n      if (parserInput.currentChar()\n      === '@' && (name = parserInput.$re(/^@[\\w-]+\\$s*/))) {\n      return name[1];\n      }\n      },\n      //\n      //\n      Call a variable value to retrieve a detached ruleset\n      // or a value from a detached ruleset's rules.\n      //\n      //\n      // @fink();\n      // @fink;\n      // color: @fink[@color];\n      //\n      variableCall:\n      function (parsedName) {\n      let lookups;\n      const i = parserInput.i;\n      const inValue =\n      !!parsedName;\n      let name = parsedName;\n      parserInput.save();\n      if (name ||\n      (parserInput.currentChar() === '@'\n      && (name = parserInput.$re(/^@[\\w-]+(\\(\\$s*\\)/)))) {\n      lookups = this.mixin.ruleLookups();\n      if (!lookups && ((inValue && parserInput.$str('(') !==\n      '(') || (name[2] !== '()'))) {\n      parserInput.restore('Missing \\[...]\\ lookup in variable call');\n      return;\n      }\n      if (!inValue) {\n      name = name[1];\n      }\n      const call = new tree.VariableCall(name, i, fileInfo);\n      if (!inValue && parsers.end()) {\n      parserInput.forget();\n      return call;\n      }\n      else {\n      parserInput.forget();\n      return new tree.NamespaceValue(call, lookups, i, fileInfo);\n      }\n      }\n      },\n      //\n      // extend syntax - used to extend

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selectors\n      /\n      extend: function(isRule) {\n          let elements;\n          let e;\n          const
index = parserInput.i;\n          let option;\n          let extendList;\n          let extend;\n          if
(!parserInput.$str(isRule ? '&:extend(' : ':extend(')) {\n              return;\n          }\n          do {\n
option = null;\n          elements = null;\n          while (!(option = parserInput.$re(/^(all)(?=\s*(\|),)/)))\n
{\n              e = this.element();\n              if (!e) {\n                  break;\n              }\n
if (elements) {\n                  elements.push(e);\n              } else {\n                  elements = [ e
];\n              }\n          }\n          option = option && option[1];\n          if (!elements) {\n
error("Missing target selector for :extend().");\n          }\n          extend =
new(tree.Extend)(new(tree.Selector)(elements), option, index, fileInfo);\n          if (extendList) {\n
extendList.push(extend);\n          } else {\n              extendList = [ extend ];\n          }\n
} while (parserInput.$char(',')\n          expect(/^\|)/);\n          if (isRule) {\n              expect(/^\|/);\n
}\n          return extendList;\n      },\n      /\n      // extendRule - used in a rule to extend all the
parent selectors\n      /\n      extendRule: function() {\n          return this.extend(true);\n      },\n      /\n
// Mixins\n      /\n      mixin: {\n          /\n          // A Mixin call, with an optional argument
list\n          /\n          // #mixins > .square(#fff);\n          // #mixins.square(#fff);\n          //
.rounded(4px, black);\n          // .button;\n          /\n          // We can lookup / return a value using the
lookup syntax;\n          /\n          // color: #mixin.square(#fff)[@color];\n          /\n          // The
`while` loop is there because mixins can be\n          // namespaced, but we only support the child and
descendant\n          // selector for now.\n          /\n          call: function (inValue, getLookup) {\n
const s = parserInput.currentChar();\n          let important = false;\n          let lookups;\n
const index = parserInput.i;\n          let elements;\n          let args;\n          let hasParens;\n
if (s !== '.' && s !== '#') { return; }\n          parserInput.save(); // stop us absorbing part of an invalid
selector\n          elements = this.elements();\n          if (elements) {\n              if
(parserInput.$char('(')) {\n                  args = this.args(true).args;\n                  expectChar(')');\n
hasParens = true;\n              }\n              if (getLookup !== false) {\n                  lookups =
this.ruleLookups();\n              }\n              if (getLookup === true && !lookups) {\n
parserInput.restore();\n              return;\n              }\n              if (inValue && !lookups &&
!hasParens) {\n                  // This isn't a valid in-value mixin call\n                  parserInput.restore();\n
return;\n              }\n              if (!inValue && parsers.important()) {\n
important = true;\n              }\n              if (inValue || parsers.end()) {\n
parserInput.forget();\n              const mixin = new(tree.mixin.Call)(elements, args, index, fileInfo, !lookups
&& important);\n              if (lookups) {\n                  return new tree.NamespaceValue(mixin,
lookups);\n              } else {\n                  return mixin;\n              }\n
}\n          }\n          parserInput.restore();\n      },\n      /**\n      *\n      Matching elements for mixins\n      *\n      * (Start with . or # and can have > )\n      *\n      */\n      elements:
function() {\n          let elements;\n          let e;\n          let c;\n          let elem;\n
let elemIndex;\n          const re = /^[#.]?(?:[\\w-]|\\\\\\\\(?:[A-Za-z0-9]{1,6} ?)[^A-Za-z0-9]))+$/;\n          while
(true) {\n              elemIndex = parserInput.i;\n              e = parserInput.$re(re);\n              \n
if (!e) {\n                  break;\n              }\n              elem = new(tree.Element)(c, e, false,
elemIndex, fileInfo);\n              if (elements) {\n                  elements.push(elem);\n              } else
{\n                  elements = [ elem ];\n              }\n              c = parserInput.$char('>');\n
}\n          }\n          return elements;\n      },\n      args: function (isCall) {\n          const entities =
parsers.entities;\n          const returner = { args:null, variadic: false };\n          let expressions = [];\n
const argsSemiColon = [];\n          const argsComma = [];\n          let isSemiColonSeparated;\n
let expressionContainsNamed;\n          let name;\n          let nameLoop;\n          let value;\n
let arg;\n          let expand;\n          let hasSep = true;\n          parserInput.save();\n
while (true) {\n              if (isCall) {\n                  arg = parsers.detachedRuleset() ||
parsers.expression();\n              } else {\n                  parserInput.commentStore.length = 0;\n

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    if (parserInput.$str('...')) {\n
        returner.variadic = true;\n
        if
(parserInput.$char(';') && !isSemiColonSeparated) {\n
            isSemiColonSeparated = true;\n
            }\n
            (isSemiColonSeparated ? argsSemiColon : argsComma)\n
.push({ variadic: true });\n
        break;\n
        }\n
        arg = entities.variable()
|| entities.property() || entities.literal() || entities.keyword() || this.call(true);\n
        }\n\n
        if
(!arg || !hasSep) {\n
            break;\n
            }\n\n
            nameLoop = null;\n
            if
(arg.throwAwayComments) {\n
                arg.throwAwayComments();\n
                }\n
                value = arg;\n
                let val = null;\n
                if (isCall) {\n
                    // Variable\n
                    if (arg.value && arg.value.length === 1) {\n
                        val = arg.value[0];\n
                        }\n
                        } else {\n
                            val = arg;\n
                            }\n
                            if (val && (val instanceof
tree.Variable || val instanceof tree.Property)) {\n
                                if (parserInput.$char(':')) {\n
                                    if
(expressions.length > 0) {\n
                                        if (isSemiColonSeparated) {\n
                                            error('Cannot mix ; and , as delimiter types');\n
                                            }\n
                                            expressionContainsNamed = true;\n
                                            }\n\n
                                            value = parsers.detachedRuleset() ||
parsers.expression();\n
                                            if (!value) {\n
                                                if (isCall) {\n
                                                    error('could not understand value for named argument');\n
                                                    } else {\n
                                                        parserInput.restore();\n
                                                        returner.args = [];\n
                                                        return returner;\n
                                                        }\n
                                                        }\n
                                                        nameLoop = (name = val.name);\n
                                                        }\n
                                                        else if (parserInput.$str('...')) {\n
                                                            if (!isCall) {\n
                                                                returner.variadic = true;\n
                                                                }\n
                                                                if (parserInput.$char(';') && !isSemiColonSeparated) {\n
                                                                    isSemiColonSeparated = true;\n
                                                                    }\n
                                                                    (isSemiColonSeparated ?
argsSemiColon : argsComma)\n
                                                                    .push({ name: arg.name, variadic: true });\n
                                                                    break;\n
                                                                    } else {\n
                                                                        expand = true;\n
                                                                        }\n
                                                                        } else if (!isCall) {\n
                                                                            name = nameLoop = val.name;\n
                                                                            value = null;\n
                                                                            }\n
                                                                            }\n\n
                                                                            if (value) {\n
                                                                                expressions.push(value);\n
                                                                                }\n
                                                                                }\n\n
                                                                                argsComma.push({ name:nameLoop, value, expand });\n
                                                                                if
(parserInput.$char(',') {\n
                                                                                    hasSep = true;\n
                                                                                    continue;\n
                                                                                    }\n
                                                                                    hasSep = parserInput.$char(';') === ';';\n
                                                                                    if (hasSep || isSemiColonSeparated) {\n
                                                                                        error('Cannot mix ; and , as delimiter types');\n
                                                                                        }\n
                                                                                        if (expressionContainsNamed) {\n
                                                                                            isSemiColonSeparated = true;\n
                                                                                            if (expressions.length > 1) {\n
                                                                                                value = new(tree.Value)(expressions);\n
                                                                                                }\n
                                                                                                argsSemiColon.push({ name,
value, expand });\n
                                                                                                name = null;\n
                                                                                                expressions = [];\n
                                                                                                expressionContainsNamed = false;\n
                                                                                                }\n
                                                                                                }\n\n
                                                                                                parserInput.forget();\n
                                                                                                returner.args = isSemiColonSeparated ? argsSemiColon : argsComma;\n
                                                                                                return returner;\n
                                                                                                },\n
                                                                                                //\n
                                                                                                // A Mixin definition, with a list of parameters\n
                                                                                                //\n
                                                                                                // .rounded
(@radius: 2px, @color) {\n
                                                                                                    // ... \n
                                                                                                    // }\n
                                                                                                    //\n
                                                                                                    // Until we have a finer
grained state-machine, we have to\n
                                                                                                    // do a look-ahead, to make sure we don't have a mixin call.\n
// See the `rule` function for more information.\n
                                                                                                    //\n
                                                                                                    // We start by matching `rounded` (, and
then proceed on to\n
                                                                                                    // the argument list, which has optional default values.\n
                                                                                                    // We store the
parameters in `params`, with a `value` key,\n
                                                                                                    // if there is a value, such as in the case of `@radius`.\n
//\n
                                                                                                    // Once we've got our params list, and a closing `}`, we parse\n
                                                                                                    // the `{...}` block.\n
//\n
                                                                                                    definition: function () {\n
                                                                                                        let name;\n
                                                                                                        let params = [];\n
                                                                                                        let match;\n
                                                                                                        let ruleset;\n
                                                                                                        let cond;\n
                                                                                                        let variadic = false;\n
                                                                                                        if
(((parserInput.currentChar() !== '.' && parserInput.currentChar() !== '#') ||\n
parserInput.peek(/^[\^{}*\\\/]) {\n
                                                                                    return;\n
                                                                                    }\n\n
                                                                                    parserInput.save();\n
                                                                                    match = parserInput.$re(/^(#[.](?:[\\w-]||\\(?:[A-Fa-f0-9]{1,6} ?|^A-Fa-f0-9)))+\\|s*(/));\n
                                                                                    if
(match) {\n
                                                                                        name = match[1];\n
                                                                                        const argInfo = this.args(false);\n
                                                                                        params = argInfo.args;\n
                                                                                        variadic = argInfo.variadic;\n
                                                                                        // .mixincall("@{a}");\n

```





```

* See: https://github.com/less/less-meta/issues/16\n
*\n
argInfo = this.mixin.args(false);\n
  params = argInfo.args;\n
  variadic = argInfo.variadic;\n
  if (!parserInput.$char())\n
{\n
  parserInput.restore();\n
  return;\n
}\n
const\n
blockRuleset = this.blockRuleset);\n
if (blockRuleset) {\n
  parserInput.forget();\n
if\n
(params) {\n
  return new tree.mixin.Definition(null, params, blockRuleset, null, variadic);\n
}\n
return new tree.DetachedRuleset(blockRuleset);\n
}\n
parserInput.restore();\n
},\n\n
//\n
// div, .class, body > p {...}\n
//\n
ruleset: function () {\n
  let\n
selectors;\n
  let rules;\n
  let debugInfo;\n\n
  parserInput.save();\n\n
  if\n
(context.dumpLineNumbers) {\n
  debugInfo = getDebugInfo(parserInput.i);\n
}\n\n
selectors = this.selectors);\n\n
if (selectors && (rules = this.block())) {\n
parserInput.forget();\n
  const ruleset = new(tree.Ruleset)(selectors, rules, context.strictImports);\n
  if (context.dumpLineNumbers) {\n
    ruleset.debugInfo = debugInfo;\n
  }\n
return ruleset;\n
} else {\n
  parserInput.restore();\n
}\n
},\n
declaration:\n
function () {\n
  let name;\n
  let value;\n
  const index = parserInput.i;\n
  let\n
hasDR;\n
  const c = parserInput.currentChar();\n
  let important;\n
  let merge;\n
let isVariable;\n\n
  if (c === '.' || c === '#' || c === '&' || c === ':') { return; }\n\n
parserInput.save();\n\n
  name = this.variable() || this.ruleProperty();\n
  if (name) {\n
isVariable = typeof name === 'string';\n\n
  if (isVariable) {\n
    value =\n
this.detachedRuleset);\n
    if (value) {\n
      hasDR = true;\n
    }\n
}\n\n
  parserInput.commentStore.length = 0;\n
  if (!value) {\n
    // a name\n
returned by this.ruleProperty() is always an array of the form:\n
    // [string-1, ..., string-n, \"\"] or\n
[string-1, ..., string-n, '+']\n
    // where each item is a tree.Keyword or tree.Variable\n
merge = !isVariable && name.length > 1 && name.pop().value;\n
    // Custom property values get\n
permissive parsing\n
    if (name[0].value && name[0].value.slice(0, 2) === '--') {\n
value = this.permissiveValue();\n
    }\n
    // Try to store values as anonymous\n
// If we need the value later we'll re-parse it in ruleset.parseValue\n
    else {\n
      value =\n
this.anonymousValue();\n
    }\n
    if (value) {\n
      parserInput.forget();\n
return\n
      // anonymous values absorb the end ';' which is required for them to work\n
      new(tree.Declaration)(name, value, false, merge, index, fileInfo);\n
    }\n
    if (!value) {\n
      value = this.value();\n
    }\n
    if (value) {\n
      important =\n
this.important();\n
    } else if (isVariable) {\n
      // As a last resort, try permissiveValue\n
      value = this.permissiveValue();\n
    }\n
  }\n
  if (value &&\n
(this.end() || hasDR)) {\n
    parserInput.forget();\n
    return new(tree.Declaration)(name,\n
value, important, merge, index, fileInfo);\n
  }\n
  else {\n
    parserInput.restore();\n
  }\n
},\n
anonymousValue: function () {\n
  const index = parserInput.i;\n
  const match =\n
parserInput.$re(/^([\^#@\\$+\\|\"'*~;{}-]*);/);\n
  if (match) {\n
    return\n
new(tree.Anonymous)(match[1], index);\n
  }\n
},\n
/**\n
 * Used for custom\n
properties, at-rules, and variables (as fallback)\n
 * Parses almost anything inside of {} [] () \"\" blocks\n
 * until it reaches outer-most tokens.\n
 * \n
 * First, it will try to parse comments and entities to\n
reach\n
 * the end. This is mostly like the Expression parser except no\n
 * math is allowed.\n
*\n
  permissiveValue: function (untilTokens) {\n
    let i;\n
    let e;\n
    let done;\n
    let value;\n
    const tok = untilTokens || ';';\n
    const index = parserInput.i;\n
    const result =\n
[];\n\n
    function testCurrentChar() {\n
      const char = parserInput.currentChar();\n
      if\n
(typeof tok === 'string') {\n
        return char === tok;\n
      } else {\n
        return\n
tok.test(char);\n
      }\n
    }\n
    if (testCurrentChar()) {\n
      return;\n
    }\n
    value = [];\n
    do {\n
      e = this.comment();\n
      if (e) {\n
value.push(e);\n
        continue;\n
      }\n
      e = this.entity();\n
      if (e) {\n

```



```

features = [];\n        let e;\n        do {\n            e = this.mediaFeature();\n            if (e) {\n                features.push(e);\n                if (!parserInput.$char(',')) { break; }\n            } else {\n                e =\n                entities.variable() || entities.mixinLookup();\n                if (e) {\n                    features.push(e);\n                    if (!parserInput.$char(',')) { break; }\n                }\n            }\n        } while (e);\nreturn features.length > 0 ? features : null;\n    },\n    media: function () {\n        let features;\n        let rules;\n        let media;\n        let debugInfo;\n        const index = parserInput.i;\n        if\n        (context.dumpLineNumbers) {\n            debugInfo = getDebugInfo(index);\n        }\n        parserInput.save();\n        if (parserInput.$str('@media')) {\n            features = this.mediaFeatures();\n            rules = this.block();\n            if (!rules) {\n                error('media definitions require block\n                statements after any features');\n            }\n            parserInput.forget();\n            media =\n            new(tree.Media)(rules, features, index, fileInfo);\n            if (context.dumpLineNumbers) {\n                media.debugInfo = debugInfo;\n            }\n            return media;\n        }\n        parserInput.restore();\n    },\n    //\n    // A @plugin directive, used to import plugins\n    dynamically.\n    //\n    // @plugin (args) \"lib\";\n    //\n    plugin: function () {\n        let\n        path;\n        let args;\n        let options;\n        const index = parserInput.i;\n        const dir =\n        parserInput.$re(/^@plugin\\s+/);\n        if (dir) {\n            args = this.pluginArgs();\n            if\n            (args) {\n                options = {\n                    pluginArgs: args,\n                    isPlugin: true\n                };\n            } else {\n                options = { isPlugin: true };\n            }\n            if ((path = this.entities.quoted() || this.entities.url())) {\n                if (!parserInput.$char(';')) {\n                    parserInput.i = index;\n                    error('missing semi-colon on @plugin');\n                }\n                return new(tree.Import)(path, null, options, index, fileInfo);\n            } else {\n                parserInput.i = index;\n                error('malformed @plugin statement');\n            }\n        }\n    },\n    pluginArgs: function() {\n        // list of options, surrounded by parens\n        parserInput.save();\n        if (!parserInput.$char('(')) {\n            parserInput.restore();\n            return\n            null;\n        } else {\n            const args = parserInput.$re(/^\\s*([^\n;]+)\\s*/);\n            if (args[1]) {\n                parserInput.forget();\n                return args[1].trim();\n            } else {\n                parserInput.restore();\n                return null;\n            }\n        },\n    //\n    // A CSS AtRule\n    //\n    // @charset \"utf-8\";\n    //\n    atrule: function () {\n        const index =\n        parserInput.i;\n        let name;\n        let value;\n        let rules;\n        let\n        nonVendorSpecificName;\n        let hasIdentifier;\n        let hasExpression;\n        let hasUnknown;\n        let hasBlock = true;\n        let isRooted = true;\n        if (parserInput.currentChar() !== '@') {\n            return;\n        }\n        value = this['import']() || this.plugin() || this.media();\n        if (value) {\n            return value;\n        }\n        parserInput.save();\n        name = parserInput.$re(/^@[a-z-]+/);\n        if (!name) {\n            return;\n        }\n        nonVendorSpecificName = name;\n        if (name.charAt(1) === '-' &&\n        name.indexOf('-', 2) > 0) {\n            nonVendorSpecificName = `@${name.slice(name.indexOf('-', 2) + 1)}`;\n        }\n        switch (nonVendorSpecificName) {\n            case '@charset':\n                hasIdentifier = true;\n                hasBlock = false;\n                break;\n            case '@namespace':\n                hasExpression = true;\n                hasBlock = false;\n                break;\n            case\n            '@keyframes':\n            case '@counter-style':\n                hasIdentifier = true;\n                break;\n            case '@document':\n            case '@supports':\n                hasUnknown = true;\n                isRooted = false;\n                break;\n            default:\n                hasUnknown = true;\n                break;\n        }\n        parserInput.commentStore.length = 0;\n        if (hasIdentifier) {\n            value = this.entity();\n            if (!value) {\n                error(`expected ${name} identifier`);\n            }\n        } else if (hasExpression) {\n            value = this.expression();\n            if (!value) {\n                error(`expected ${name} expression`);\n            }\n        } else if (hasUnknown) {\n            value\n            = this.permissiveValue(/{};/);\n            hasBlock = (parserInput.currentChar() === '{');\n            if\n            (!value) {\n                if (!hasBlock && parserInput.currentChar() !== ';') {\n                    error(`${name}\n                    rule is missing block or ending semi-colon`);\n                }\n            }\n        } else if (!value.value)

```

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{\n          value = null;\n          }\n          }\n          if (hasBlock) {\n          rules =
this.blockRuleset();\n          }\n          if (rules || (!hasBlock && value && parserInput.$char(';')) {\n
parserInput.forget();\n          return new(tree.AtRule)(name, value, rules, index, fileInfo,\n
context.dumpLineNumbers ? getDebugInfo(index) : null,\n          isRooted\n          );\n          }\n          parserInput.restore('at-rule options not recognised');\n          },\n          //\n          // A Value is a comma-
delimited list of Expressions\n          //\n          // font-family: Baskerville, Georgia, serif;\n          //\n          //
In a Rule, a Value represents everything after the `:`,\n          // and before the `;`.\n          //\n          value:
function () {\n          let e;\n          const expressions = [];\n          const index = parserInput.i;\n
do {\n          e = this.expression();\n          if (e) {\n          expressions.push(e);\n          if
(!parserInput.$char(',')) break; }\n          }\n          } while (e);\n          if (expressions.length > 0) {\n
return new(tree.Value)(expressions, index);\n          }\n          },\n          important: function () {\n
if (parserInput.currentChar() === '!') {\n          return parserInput.$re(/^! *important/);\n          }\n
},\n          sub: function () {\n          let a;\n          let e;\n          parserInput.save();\n          if
(parserInput.$char('(')) {\n          a = this.addition();\n          if (a && parserInput.$char('(')) {\n
parserInput.forget();\n          e = new(tree.Expression)([a]);\n          e.parens = true;\n
return e;\n          }\n          parserInput.restore('Expected \\\\)');\n          return;\n          }\n
parserInput.restore();\n          },\n          multiplication: function () {\n          let m;\n          let a;\n
let op;\n          let operation;\n          let isSpaced;\n          m = this.operand();\n          if (m) {\n
isSpaced = parserInput.isWhitespace(-1);\n          while (true) {\n          if
(parserInput.peek(/^[*\/]) {\n          break;\n          }\n          }\n          parserInput.save();\n
op = parserInput.$char('/') || parserInput.$char('*') || parserInput.$str('./');\n          if (!op) {\n
parserInput.forget(); break; }\n          a = this.operand();\n          if (!a) {\n          parserInput.restore();\n
break; }\n          parserInput.forget();\n          m.parensInOp = true;\n          a.parensInOp
= true;\n          operation = new(tree.Operation)(op, [operation || m, a], isSpaced);\n          isSpaced
= parserInput.isWhitespace(-1);\n          }\n          return operation || m;\n          }\n          },\n
addition: function () {\n          let m;\n          let a;\n          let op;\n          let operation;\n          let
isSpaced;\n          m = this.multiplication();\n          if (m) {\n          isSpaced =
parserInput.isWhitespace(-1);\n          while (true) {\n          op = parserInput.$re(/^[-+]\s+/) ||
(!isSpaced && (parserInput.$char('+') || parserInput.$char('-')));\n          if (!op) {\n
break;\n          }\n          a = this.multiplication();\n          if (!a) {\n
break;\n          }\n          m.parensInOp = true;\n          a.parensInOp = true;\n
operation = new(tree.Operation)(op, [operation || m, a], isSpaced);\n          isSpaced =
parserInput.isWhitespace(-1);\n          }\n          return operation || m;\n          }\n          },\n
conditions: function () {\n          let a;\n          let b;\n          const index = parserInput.i;\n          let
condition;\n          a = this.condition(true);\n          if (a) {\n          while (true) {\n          if
(!parserInput.peek(/^[*\/\s*(not\s*)?\/) || !parserInput.$char(',') {\n          break;\n          }\n
b = this.condition(true);\n          if (!b) {\n          break;\n          }\n
condition = new(tree.Condition)('or', condition || a, b, index);\n          }\n          return condition || a;\n
}\n          },\n          condition: function (needsParens) {\n          let result;\n          let logical;\n
let next;\n          function or() {\n          return parserInput.$str('or');\n          }\n          result =
this.conditionAnd(needsParens);\n          if (!result) {\n          return ;\n          }\n          logical =
or();\n          if (logical) {\n          next = this.condition(needsParens);\n          if (next) {\n
result = new(tree.Condition)(logical, result, next);\n          } else {\n          return ;\n          }\n
}\n          return result;\n          },\n          conditionAnd: function (needsParens) {\n          let
result;\n          let logical;\n          let next;\n          const self = this;\n          function insideCondition()
{\n          const cond = self.negatedCondition(needsParens) || self.parenthesisCondition(needsParens);\n
if (!cond && !needsParens) {\n          return self.atomicCondition(needsParens);\n          }\n
return cond;\n          }\n          function and() {\n          return parserInput.$str('and');\n          }
}

```

```

}\n\n    result = insideCondition();\n        if (!result) {\n            return ;\n        }\nlogical = and();\n        if (logical) {\n            next = this.conditionAnd(needsParens);\n            if (next)\n        {\n            result = new(tree.Condition)(logical, result, next);\n        } else {\n            return ;\n        }\n        }\n        }\n        return result;\n    },\n    negatedCondition: function (needsParens) {\n        if (parserInput.$str('not')) {\n            const result = this.parenthesisCondition(needsParens);\n            if (result) {\n                result.negate = !result.negate;\n            }\n            return result;\n        }\n    },\n    parenthesisCondition: function (needsParens) {\n        function\n        tryConditionFollowedByParenthesis(me) {\n            let body;\n            parserInput.save();\n            body = me.condition(needsParens);\n            if (!body) {\n                parserInput.restore();\n                return ;\n            }\n            if (!parserInput.$char('=')) {\n                parserInput.restore();\n                return ;\n            }\n            parserInput.forget();\n            return body;\n        }\n        }\n        }\n        parserInput.save();\n        if (!parserInput.$str('(')) {\n            parserInput.restore();\n            return ;\n        }\n        body = tryConditionFollowedByParenthesis(this);\n        if (body) {\n            parserInput.forget();\n            return body;\n        }\n        }\n        body =\n        this.atomicCondition(needsParens);\n        if (!body) {\n            parserInput.restore();\n            return\n        ;\n        }\n        if (!parserInput.$char('=')) {\n            parserInput.restore('^ expected ')\n            got\n            '${parserInput.currentChar()}');\n            return ;\n        }\n        parserInput.forget();\n        return body;\n    },\n    atomicCondition: function (needsParens) {\n        const entities =\n        this.entities;\n        const index = parserInput.i;\n        let a;\n        let b;\n        let c;\n        let\n        op;\n        function cond() {\n            return this.addition() || entities.keyword() || entities.quoted() ||\n            entities.mixinLookup();\n        }\n        cond = cond.bind(this);\n        a = cond();\n        if (a)\n        {\n            if (parserInput.$char('>')) {\n                if (parserInput.$char('=')) {\n                    op =\n                    '>=';\n                } else {\n                    op = '>';\n                }\n            } else {\n                if\n                (parserInput.$char('<')) {\n                    if (parserInput.$char('=')) {\n                        op = '<=';\n                    }\n                } else {\n                    if (parserInput.$char('=')) {\n                        op = '<';\n                    }\n                }\n            }\n            if (parserInput.$char('>')) {\n                op = '=>';\n            } else if\n            (parserInput.$char('<')) {\n                op = '=<';\n            } else {\n                op = '=';\n            }\n        }\n        }\n        if (op) {\n            b = cond();\n            if (b) {\n                c\n                = new(tree.Condition)(op, a, b, index, false);\n            } else {\n                error('expected\n                expression');\n            }\n        } else {\n            c = new(tree.Condition)('=', a,\n            new(tree.Keyword)('true'), index, false);\n        }\n        return c;\n    },\n    },\n    },\n    }\n\n    // An operand is anything that can be part of an operation,\n    // such as a Color, or a Variable\n\n    // operand: function () {\n        const entities = this.entities;\n        let negate;\n        if\n        (parserInput.peek(/^-[a-zA-Z0-9_/$%&@#{}|/]) {\n            negate = parserInput.$char('-');\n        }\n        }\n        let o =\n        this.sub() || entities.dimension() ||\n        entities.color() || entities.variable() ||\n        entities.property() || entities.call() ||\n        entities.quoted(true) || entities.colorKeyword() ||\n        entities.mixinLookup();\n        if (negate) {\n            o.parensInOp = true;\n            o =\n            new(tree.Negative)(o);\n        }\n        }\n        return o;\n    },\n    },\n    }\n\n    // Expressions either\n    // or white-space delimited Entities.\n    // 1px solid\n    // @var * 2\n    // expression: function () {\n        const entities = [];\n        let e;\n        let delim;\n        const index = parserInput.i;\n        do {\n            e =\n            this.comment();\n            if (e) {\n                entities.push(e);\n                continue;\n            }\n            e = this.addition() || this.entity();\n            if (e instanceof tree.Comment) {\n                e =\n                null;\n            }\n            if (e) {\n                entities.push(e);\n                // operations do not\n                allow keyword \"^\" dimension (e.g. small/20px) so we support that here\n                if\n                (!parserInput.peek(/^\\[[\\/*]/)) {\n                    delim = parserInput.$char('/');\n                    if (delim) {\n                        entities.push(new(tree.Anonymous)(delim, index));\n                    }\n                }\n            }\n        } while (e);\n        if (entities.length > 0) {\n            return

```

```

new(tree.Expression)(entities);\n        }\n    },\n    property: function () {\n        const name =\n        parserInput.$re(/^(\\*?-?[_a-zA-Z0-9-]+)\\s*/);\n        if (name) {\n            return name[1];\n        }\n    },\n    ruleProperty: function () {\n        let name = [];\n        const index = [];\n        let s;\n        let k;\n        parserInput.save();\n        const simpleProperty = parserInput.$re(/^([_a-zA-Z0-9-]+)\\s*/);\n        if (simpleProperty) {\n            name = [new(tree.Keyword)(simpleProperty[1])];\n            parserInput.forget();\n            return name;\n        }\n        function match(re) {\n            const i = parserInput.i;\n            const chunk = parserInput.$re(re);\n            if (chunk) {\n                index.push(i);\n                return name.push(chunk[1]);\n            }\n        }\n        match(/^(\\*?)/);\n        while (true) {\n            if (!match(/^(?:(\\w-+)|(?:[@\\$]\\{\\{\\w-+\\}\\}\\)))/) {\n                break;\n            }\n            if ((name.length > 1) && match(/^(?:(\\+|_|\\|+)?)\\s*/)) {\n                parserInput.forget();\n                // at last, we have the complete match now. move forward,\n                // convert name particles to tree objects and return:\n                if (name[0] === '') {\n                    name.shift();\n                    index.shift();\n                }\n                for (k = 0; k < name.length; k++) {\n                    s = name[k];\n                    name[k] = (s.charAt(0) !== '@' && s.charAt(0) !== '$') ?\n                    new(tree.Keyword)(s) : (s.charAt(0) === '@' ?\n                    new(tree.Variable)(`@${s.slice(2, -1)}`, index[k], fileInfo) :\n                    new(tree.Property)(`${s.slice(2, -1)}`, index[k], fileInfo));\n                }\n                return name;\n            }\n            parserInput.restore();\n        }\n    };\n};\n\nParser.serializeVars = vars => {\n    let s = "";\n    for (const name in vars) {\n        if (Object.hasOwnProperty.call(vars, name)) {\n            const value = vars[name];\n            s += `${((name[0] === '@') ? ':' : '@') + name}: ${value}${(String(value).slice(-1) === ';') ? ':' : ';'}`;\n        }\n    }\n    return s;\n};\n\nexport default Parser;\n", "import Anonymous from './tree/anonymous';\nimport Keyword from './tree/keyword';\n\nfunction boolean(condition) {\n    return condition ? Keyword.True :\n    Keyword.False;\n}\n\n/**\n * Functions with evalArgs set to false are sent context\n * as the first argument.\n *\nfunction If(context, condition, trueValue, falseValue) {\n    return condition.eval(context) ?\n    trueValue.eval(context) : (falseValue ? falseValue.eval(context) : new Anonymous);\n}\n\nIf.evalArgs =\nfalse;\n\nfunction isdefined(context, variable) {\n    try {\n        variable.eval(context);\n        return Keyword.True;\n    } catch (e) {\n        return Keyword.False;\n    }\n}\n\nisdefined.evalArgs = false;\n\nexport default {\n    isdefined,\n    boolean, 'if: If';\n}, "import Dimension from './tree/dimension';\nimport Color from './tree/color';\nimport Quoted from './tree/quoted';\nimport Anonymous from './tree/anonymous';\nimport Expression from './tree/expression';\nimport Operation from './tree/operation';\n\nlet colorFunctions;\n\nfunction clamp(val) {\n    return Math.min(1, Math.max(0, val));\n}\n\nfunction hsla(origColor, hsl) {\n    const color =\n    colorFunctions.hsla(hsl.h, hsl.s, hsl.l, hsl.a);\n    if (color) {\n        if (origColor.value && !\n        /^(rgb|hsl)/.test(origColor.value)) {\n            color.value = origColor.value;\n        } else {\n            color.value =\n            'rgb';\n        }\n        return color;\n    }\n}\n\nfunction toHSL(color) {\n    if (color.toHSL) {\n        return\n        color.toHSL();\n    } else {\n        throw new Error('Argument cannot be evaluated to a color');\n    }\n}\n\nfunction toHSV(color) {\n    if (color.toHSV) {\n        return color.toHSV();\n    } else {\n        throw new Error('Argument\n        cannot be evaluated to a color');\n    }\n}\n\nfunction number(n) {\n    if (n instanceof Dimension) {\n        return\n        parseFloat(n.unit.is('%') ? n.value / 100 : n.value);\n    } else if (typeof n === 'number') {\n        return n;\n    } else {\n        throw {\n            type: 'Argument',\n            message: 'color functions take numbers as parameters'\n        };\n    }\n}\n\nfunction scaled(n, size) {\n    if (n instanceof Dimension && n.unit.is('%')) {\n        return parseFloat(n.value\n        * size / 100);\n    } else {\n        return number(n);\n    }\n}\n\ncolorFunctions = {\n    rgb: function (r, g, b) {\n        let\n        a = 1\n        /**\n         * Comma-less syntax\n         * e.g. rgb(0 128 255 / 50%)\n         */\n        if (r instanceof\n        Expression) {\n            const val = r.value\n            r = val[0]\n            g = val[1]\n            b = val[2]\n            /**\n             * @todo - should this be normalized in\n             * function caller? Or parsed differently?\n             */\n            if (b instanceof Operation) {\n                const op = b\n                b = op.operands[0]\n                a = op.operands[1]\n            }\n        }\n        const color = colorFunctions.rgba(r, g, b, a);\n        if (color) {\n            color.value = 'rgb';\n        }\n        return color;\n    },\n    rgba: function (r, g, b, a) {\n        try {\n            if (r instanceof Color) {\n                if (g)\n                    a = number(g);\n            } else {\n                a = r.alpha;\n            }\n        }\n        return

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new Color(r.rgb, a, 'rgba');\n      }\n      const rgb = [r, g, b].map(c => scaled(c, 255));\n      a =
number(a);\n      return new Color(rgb, a, 'rgba');\n      }\n      catch (e) {\n      },\n      hsl: function (h, s, l) {\n
let a = 1\n      if (h instanceof Expression) {\n      const val = h.value\n      h = val[0]\n      s = val[1]\n
l = val[2]\n\n      if (l instanceof Operation) {\n      const op = l\n      l = op.operands[0]\n
a = op.operands[1]\n      }\n      }\n      const color = colorFunctions.hsla(h, s, l, a);\n      if (color) {\n
color.value = 'hsl';\n      return color;\n      }\n      },\n      hsla: function (h, s, l, a) {\n      try {\n      if (h
instanceof Color) {\n      if (s) {\n      a = number(s);\n      } else {\n      a = h.alpha;\n
}\n      return new Color(h.rgb, a, 'hsla');\n      }\n\n      let m1;\n      let m2;\n\n
function hue(h) {\n      h = h < 0 ? h + 1 : (h > 1 ? h - 1 : h);\n      if (h * 6 < 1) {\n      return m1
+ (m2 - m1) * h * 6;\n      }\n      else if (h * 2 < 1) {\n      return m2;\n      }\n
else if (h * 3 < 2) {\n      return m1 + (m2 - m1) * (2 / 3 - h) * 6;\n      }\n      else {\n
return m1;\n      }\n      }\n\n      h = (number(h) % 360) / 360;\n      s = clamp(number(s));\n
clamp(number(l));\n      a = clamp(number(a));\n\n      m2 = 1 <= 0.5 ? 1 * (s + 1) : 1 + s - 1 * s;\n      m1 = 1 * 2 -
m2;\n\n      const rgb = [\n      hue(h + 1 / 3) * 255,\n      hue(h) * 255,\n      hue(h - 1 / 3) *
255\n      ];\n      a = number(a);\n      return new Color(rgb, a, 'hsla');\n      }\n      catch (e) {\n      }\n      },\n\n
hsv: function(h, s, v) {\n      return colorFunctions.hsva(h, s, v, 1.0);\n      },\n\n      hsva: function(h, s, v, a) {\n
h = ((number(h) % 360) / 360) * 360;\n      s = number(s);\n      v = number(v);\n      a = number(a);\n\n      let i;\n      let f;\n
i = Math.floor((h / 60) % 6);\n      f = (h / 60) - i;\n\n      const vs = [v,\n      v * (1 - s),\n      v * (1 - f *
s),\n      v * (1 - (1 - f) * s)];\n      const perm = [[0, 3, 1],\n      [2, 0, 1],\n      [1, 0, 3],\n      [1, 2,
0],\n      [3, 1, 0],\n      [0, 1, 2]];\n      return colorFunctions.rgba(vs[perm[i][0]] * 255,\n
vs[perm[i][1]] * 255,\n      vs[perm[i][2]] * 255,\n      a);\n      },\n\n      hue: function (color) {\n      return new
Dimension(toHSL(color).h);\n      },\n      saturation: function (color) {\n      return new Dimension(toHSL(color).s *
100, '%');\n      },\n      lightness: function (color) {\n      return new Dimension(toHSL(color).l * 100, '%');\n      },\n
hsvhue: function (color) {\n      return new Dimension(toHSV(color).h);\n      },\n      hsvsaturation: function (color)
{\n      return new Dimension(toHSV(color).s * 100, '%');\n      },\n      hsvvalue: function (color) {\n      return new
Dimension(toHSV(color).v * 100, '%');\n      },\n      red: function (color) {\n      return new
Dimension(color.rgb[0]);\n      },\n      green: function (color) {\n      return new Dimension(color.rgb[1]);\n      },\n
blue: function (color) {\n      return new Dimension(color.rgb[2]);\n      },\n      alpha: function (color) {\n      return
new Dimension(toHSL(color).a);\n      },\n      luma: function (color) {\n      return new Dimension(color.luma() *
color.alpha * 100, '%');\n      },\n      luminance: function (color) {\n      const luminance =\n      (0.2126 *
color.rgb[0] / 255) +\n      (0.7152 * color.rgb[1] / 255) +\n      (0.0722 * color.rgb[2] / 255);\n      return new
Dimension(luminance * color.alpha * 100, '%');\n      },\n      saturate: function (color, amount, method) {\n
// filter: saturate(3.2);\n      // should be kept as is, so check for color\n      if (!color.rgb) {\n      return
null;\n      }\n      const hsl = toHSL(color);\n      if (typeof method !== 'undefined' && method.value ===
'relative') {\n      hsl.s += hsl.s * amount.value / 100;\n      }\n      else {\n      hsl.s += amount.value /
100;\n      }\n      hsl.s = clamp(hsl.s);\n      return hsla(color, hsl);\n      },\n      desaturate: function (color, amount,
method) {\n      const hsl = toHSL(color);\n      if (typeof method !== 'undefined' && method.value ===
'relative') {\n      hsl.s -= hsl.s * amount.value / 100;\n      }\n      else {\n      hsl.s -= amount.value / 100;\n
}\n      hsl.s = clamp(hsl.s);\n      return hsla(color, hsl);\n      },\n      lighten: function (color, amount, method) {\n
const hsl = toHSL(color);\n      if (typeof method !== 'undefined' && method.value === 'relative') {\n
hsl.l += hsl.l * amount.value / 100;\n      }\n      else {\n      hsl.l += amount.value / 100;\n      }\n      hsl.l =
clamp(hsl.l);\n      return hsla(color, hsl);\n      },\n      darken: function (color, amount, method) {\n      const hsl =
toHSL(color);\n      if (typeof method !== 'undefined' && method.value === 'relative') {\n      hsl.l -= hsl.l *
amount.value / 100;\n      }\n      else {\n      hsl.l -= amount.value / 100;\n      }\n      hsl.l = clamp(hsl.l);\n
return hsla(color, hsl);\n      },\n      fadein: function (color, amount, method) {\n      const hsl = toHSL(color);\n      if
(typeof method !== 'undefined' && method.value === 'relative') {\n      hsl.a += hsl.a * amount.value / 100;\n      }\n
else {\n      hsl.a += amount.value / 100;\n      }\n      hsl.a = clamp(hsl.a);\n      return hsla(color,
hsl);\n      },\n      fadeout: function (color, amount, method) {\n      const hsl = toHSL(color);\n      if (typeof

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method !== 'undefined' && method.value === 'relative') {\n      hsl.a -= hsl.a * amount.value / 100;\n    }\n    else {\n      hsl.a -= amount.value / 100;\n    }\n    hsl.a = clamp(hsl.a);\n    return hsla(color, hsl);\n  },\n  fade: function (color, amount) {\n    const hsl = toHSL(color);\n    hsl.a = amount.value / 100;\n    hsl.a = clamp(hsl.a);\n    return hsla(color, hsl);\n  },\n  spin: function (color, amount) {\n    const hsl =\n    toHSL(color);\n    const hue = (hsl.h + amount.value) % 360;\n    hsl.h = hue < 0 ? 360 + hue : hue;\n    return hsla(color, hsl);\n  },\n  //\n  // Copyright (c) 2006-2009 Hampton Catlin, Natalie Weizenbaum, and Chris\n  Eppstein\n  // http://sass-lang.com\n  //\n  mix: function (color1, color2, weight) {\n    if (!weight) {\n      weight = new Dimension(50);\n    }\n    const p = weight.value / 100.0;\n    const w = p * 2 - 1;\n    const a\n    = toHSL(color1).a - toHSL(color2).a;\n    const w1 = (((w * a === -1) ? w : (w + a) / (1 + w * a)) + 1) / 2.0;\n    const w2 = 1 - w1;\n    const rgb = [color1.rgb[0] * w1 + color2.rgb[0] * w2,\n    color1.rgb[1] * w1 +\n    color2.rgb[1] * w2,\n    color1.rgb[2] * w1 + color2.rgb[2] * w2];\n    const alpha = color1.alpha * p +\n    color2.alpha * (1 - p);\n    return new Color(rgb, alpha);\n  },\n  greyscale: function (color) {\n    return\n    colorFunctions.desaturate(color, new Dimension(100));\n  },\n  contrast: function (color, dark, light, threshold)\n  {\n    // filter: contrast(3.2);\n    // should be kept as is, so check for color\n    if (!color.rgb) {\n      return\n      null;\n    }\n    if (typeof light === 'undefined') {\n      light = colorFunctions.rgb(255, 255, 255, 1.0);\n    }\n    if (typeof dark === 'undefined') {\n      dark = colorFunctions.rgb(0, 0, 0, 1.0);\n    }\n    // Figure\n    out which is actually light and dark:\n    if (dark.luma() > light.luma()) {\n      const t = light;\n      light =\n      dark;\n      dark = t;\n    }\n    if (typeof threshold === 'undefined') {\n      threshold = 0.43;\n    } else\n    {\n      threshold = number(threshold);\n    }\n    if (color.luma() < threshold) {\n      return light;\n    }\n    else {\n      return dark;\n    }\n  },\n  // Changes made in 2.7.0 - Reverted in 3.0.0\n  // contrast: function\n  (color, color1, color2, threshold) {\n    // // Return which of `color1` and `color2` has the greatest contrast with\n    `color`\n    // // according to the standard WCAG contrast ratio calculation.\n    // //\n    http://www.w3.org/TR/WCAG20/#contrast-ratiodef\n    // // The threshold param is no longer used, in line with\n    SASS.\n    // // filter: contrast(3.2);\n    // // should be kept as is, so check for color\n    // if (!color.rgb) {\n    //   return null;\n    // }\n    // if (typeof color1 === 'undefined') {\n    //   color1 = colorFunctions.rgb(0,\n    0, 0, 1.0);\n    // }\n    // if (typeof color2 === 'undefined') {\n    //   color2 = colorFunctions.rgb(255, 255,\n    255, 1.0);\n    // }\n    // var contrast1, contrast2;\n    // var luma = color.luma();\n    // var luma1 =\n    color1.luma();\n    // var luma2 = color2.luma();\n    // // Calculate contrast ratios for each color\n    // if\n    (luma > luma1) {\n    //   contrast1 = (luma + 0.05) / (luma1 + 0.05);\n    // } else {\n    //   contrast1 =\n    (luma1 + 0.05) / (luma + 0.05);\n    // }\n    // if (luma > luma2) {\n    //   contrast2 = (luma + 0.05) / (luma2\n    + 0.05);\n    // } else {\n    //   contrast2 = (luma2 + 0.05) / (luma + 0.05);\n    // }\n    // if (contrast1 >\n    contrast2) {\n    //   return color1;\n    // } else {\n    //   return color2;\n    // }\n  },\n  argb: function\n  (color) {\n    return new Anonymous(color.toARGB());\n  },\n  color: function(c) {\n    if ((c instanceof\n    Quoted) &&\n    (/^#[A-Fa-f0-9]{8}|[A-Fa-f0-9]{6}|[A-Fa-f0-9]{3,4}$/i.test(c.value))) {\n      const val =\n      c.value.slice(1);\n      return new Color(val, undefined, `#${val}`);\n    }\n    if ((c instanceof Color) || (c =\n    Color.fromKeyword(c.value))) {\n      c.value = undefined;\n      return c;\n    }\n    throw {\n      type: 'Argument',\n      message: 'argument must be a color keyword or 3|4|6|8 digit hex e.g. #FFF'\n    };\n  },\n  tint: function(color, amount) {\n    return colorFunctions.mix(colorFunctions.rgb(255, 255, 255), color,\n    amount);\n  },\n  shade: function(color, amount) {\n    return colorFunctions.mix(colorFunctions.rgb(0, 0, 0),\n    color, amount);\n  };\n}\n\nexport default colorFunctions;\n", "import Color from './tree/color';\n\n// Color\nBlending\n// ref: http://www.w3.org/TR/compositing-1\n\nfunction colorBlend(mode, color1, color2) {\n  const ab\n  = color1.alpha;\n  // result\n  let // backdrop\n  cb;\n  const as = color2.alpha;\n  let // source\n  cs;\n  let ar;\n  let cr;\n  const r = [];\n  ar = as + ab * (1 - as);\n  for (let i = 0; i < 3; i++) {\n    cb =\n    color1.rgb[i] / 255;\n    cs = color2.rgb[i] / 255;\n    cr = mode(cb, cs);\n    if (ar) {\n      cr = (as * cs + ab\n      * (cb -\n      as * (cb + cs - cr))) / ar;\n    }\n    r[i] = cr * 255;\n  }\n  return new Color(r,\n  ar);\n}\n\nconst colorBlendModeFunctions = {\n  multiply: function(cb, cs) {\n    return cb * cs;\n  },\n  screen: function(cb, cs) {\n    return cb + cs - cb * cs;\n  },\n  overlay: function(cb, cs) {\n    cb *= 2;\n    return (cb <= 1) ?\n    colorBlendModeFunctions.multiply(cb, cs) :\n
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colorBlendModeFunctions.screen(cb - 1, cs);\n  },\n  softlight: function(cb, cs) {\n    let d = 1;\n    let e =\n    cb;\n    if (cs > 0.5) {\n      e = 1;\n      d = (cb > 0.25) ? Math.sqrt(cb)\n      : ((16 * cb - 12) * cb + 4)\n      * cb;\n    }\n    return cb - (1 - 2 * cs) * e * (d - cb);\n  },\n  hardlight: function(cb, cs) {\n    return\n    colorBlendModeFunctions.overlay(cs, cb);\n  },\n  difference: function(cb, cs) {\n    return Math.abs(cb - cs);\n  },\n  exclusion: function(cb, cs) {\n    return cb + cs - 2 * cb * cs;\n  },\n  // non-w3c functions:\n  average:\n  function(cb, cs) {\n    return (cb + cs) / 2;\n  },\n  negation: function(cb, cs) {\n    return 1 - Math.abs(cb + cs\n  - 1);\n  }\n};\n\nfor (const f in colorBlendModeFunctions) {\n  if (colorBlendModeFunctions.hasOwnProperty(f))\n  {\n    colorBlend[f] = colorBlend.bind(null, colorBlendModeFunctions[f]);\n  }\n}\n\nexport default\n  colorBlend;\n", "import Comment from './tree/comment';\nimport Node from './tree/node';\nimport Dimension from\n  './tree/dimension';\nimport Declaration from './tree/declaration';\nimport Expression from\n  './tree/expression';\nimport Ruleset from './tree/ruleset';\nimport Selector from './tree/selector';\nimport Element\n  from './tree/element';\nimport Quote from './tree/quoted';\nimport Value from './tree/value';\n\nconst\n  getItemsFromNode = node => {\n    // handle non-array values as an array of length 1\n    // return 'undefined' if\n    index is invalid\n    const items = Array.isArray(node.value) ?\n    node.value : Array(node);\n\n    return\n    items;\n  };\n\nexport default {\n  _SELF: function(n) {\n    return n;\n  },\n  '~': function(...expr) {\n    if\n    (expr.length === 1) {\n      return expr[0];\n    }\n    return new Value(expr);\n  },\n  extract:\n  function(values, index) {\n    // (1-based index)\n    index = index.value - 1;\n\n    return\n    getItemsFromNode(values)[index];\n  },\n  length: function(values) {\n    return new\n    Dimension(getItemsFromNode(values).length);\n  },\n  /**\n   * Creates a Less list of incremental values.\n   * \n   * Modeled after Lodash's range function, also exists natively in PHP\n   * \n   * @param {Dimension} [start=1]\n   * @param {Dimension} end - e.g. 10 or 10px - unit is added to output\n   * @param {Dimension} [step=1]\n   *\n   * range: function(start, end, step) {\n    let from;\n    let to;\n    let stepValue = 1;\n    const list = [];\n\n    if (end) {\n      to = end;\n      from = start.value;\n      if (step) {\n        stepValue = step.value;\n      }\n    }\n    else {\n      from = 1;\n      to = start;\n    }\n\n    for (let i = from; i <= to.value; i +=\n    stepValue) {\n      list.push(new Dimension(i, to.unit));\n    }\n\n    return new Expression(list);\n  },\n  each: function(list, rs) {\n    const rules = [];\n    let newRules;\n    let iterator;\n\n    const tryEval = val =>\n    {\n      if (val instanceof Node) {\n        return val.eval(this.context);\n      }\n      return val;\n    };\n\n    if (list.value && !(list instanceof Quote)) {\n      if (Array.isArray(list.value)) {\n        iterator =\n        list.value.map(tryEval);\n      } else {\n        iterator = [tryEval(list.value)];\n      } else if\n      (list.ruleset) {\n        iterator = tryEval(list.ruleset).rules;\n      } else if (list.rules) {\n        iterator =\n        list.rules.map(tryEval);\n      } else if (Array.isArray(list)) {\n        iterator = list.map(tryEval);\n      } else {\n        iterator = [tryEval(list)];\n      }\n\n      let valueName = '@value';\n      let keyName = '@key';\n      let\n      indexName = '@index';\n\n      if (rs.params) {\n        valueName = rs.params[0] && rs.params[0].name;\n        keyName = rs.params[1] && rs.params[1].name;\n        indexName = rs.params[2] && rs.params[2].name;\n      }\n      rs = rs.rules;\n    } else {\n      rs = rs.ruleset;\n    }\n\n    for (let i = 0; i < iterator.length; i++) {\n      let key;\n      let value;\n      const item = iterator[i];\n      if (item instanceof Declaration) {\n        key = typeof item.name === 'string' ? item.name : item.name[0].value;\n        value = item.value;\n      }\n      else {\n        key = new Dimension(i + 1);\n        value = item;\n      }\n\n      if (item instanceof\n      Comment) {\n        continue;\n      }\n\n      newRules = rs.rules.slice(0);\n      if (valueName) {\n        newRules.push(new Declaration(valueName,\n        value,\n        false, false, this.index,\n        this.currentFileInfo));\n      }\n      if (indexName) {\n        newRules.push(new\n        Declaration(indexName,\n        new Dimension(i + 1),\n        false, false, this.index,\n        this.currentFileInfo));\n      }\n      if (keyName) {\n        newRules.push(new Declaration(keyName,\n        key,\n        false, false, this.index, this.currentFileInfo));\n      }\n      rules.push(new\n      Ruleset([\n        new(Selector)([\n          new Element("\\", '&')\n        ]),\n        newRules,\n        rs.strictImports,\n        rs.visibilityInfo()\n      ]));\n    }\n\n    return new Ruleset([\n      new(Selector)([\n        new Element("\\", '&')\n      ]),\n      rules,\n      rs.strictImports,\n      rs.visibilityInfo()\n    ]).eval(this.context);\n  }\n};\n", "import\n  Dimension from './tree/dimension';\n\nconst MathHelper = (fn, unit, n) => {\n  if (!(n instanceof Dimension)) {\n

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    throw { type: 'Argument', message: 'argument must be a number' };
  }
  if (unit === null) {
    unit = n.unit;
  } else {
    n = n.unify();
    return new Dimension(fn(parseFloat(n.value)), unit);
  }
}
export default MathHelper;
import mathHelper from './math-helper.js';
const mathFunctions = {
  // name, unit
  ceil: null,
  floor: null,
  sqrt: null,
  abs: null,
  tan: "",
  sin: "",
  cos: "",
  atan: 'rad',
  asin: 'rad',
  acos: 'rad'
};
for (const f in mathFunctions) {
  if (mathFunctions.hasOwnProperty(f)) {
    mathFunctions[f] = mathHelper.bind(null, Math[f], mathFunctions[f]);
  }
}
mathFunctions.round = (n, f) => {
  const fraction = typeof f === 'undefined' ? 0 : f.value;
  return mathHelper(num => num.toFixed(fraction), null, n);
};
export default mathFunctions;
import Dimension from './tree/dimension';
import Anonymous from './tree/anonymous';
import mathHelper from './math-helper.js';
const minMax = function (isMin, args) {
  args = Array.prototype.slice.call(args);
  switch (args.length) {
    case 0:
      throw { type: 'Argument', message: 'one or more arguments required' };
  }
  let i; // key is the unit.toString() for unified Dimension values
  let j;
  let current;
  let currentUnified;
  let referenceUnified;
  let unit;
  let unitStatic;
  let unitClone;
  const // elems only contains original argument values
    order = [];
  const values = {}; // value is the index into the order array
  for (i = 0; i < args.length; i++) {
    current = args[i];
    if (!(current instanceof Dimension)) {
      if (Array.isArray(args[i].value)) {
        Array.prototype.push.apply(args, Array.prototype.slice.call(args[i].value));
      }
      continue;
    }
    currentUnified = current.unit.toString() === "" && unitClone !== undefined ? new Dimension(current.value, unitClone).unify() : current.unify();
    unit = currentUnified.unit.toString() === "" && unitStatic !== undefined ? unitStatic : currentUnified.unit.toString();
    unitStatic = unit !== "" && unitStatic === undefined || unit !== "" && order[0].unit.toString() === "" ? unit : unitStatic;
    unitClone = unit !== "" && unitClone === undefined ? current.unit.toString() : unitClone;
    j = values[""] !== undefined && unit !== "" && unit === unitStatic ? values[""] : values[unit];
    if (j === undefined) {
      if (unitStatic !== undefined && unit !== unitStatic) {
        throw { type: 'Argument', message: 'incompatible types' };
      }
      values[unit] = order.length;
      order.push(current);
      continue;
    }
    referenceUnified = order[j].unit.toString() === "" && unitClone !== undefined ? new Dimension(order[j].value, unitClone).unify() : order[j].unify();
    if (isMin && currentUnified.value < referenceUnified.value || !isMin && currentUnified.value > referenceUnified.value) {
      order[j] = current;
    }
  }
  if (order.length === 1) {
    return order[0];
  }
  args = order.map(function (a) { return a.toCSS(this.context); }).join(this.context.compress ? ', ' : ', ');
  return new Anonymous(`${isMin ? 'min' : 'max'}(${args})`);
};
export default {
  min: function (...args) {
    try {
      return minMax(true, args);
    } catch (e) {}
  },
  max: function (...args) {
    try {
      return minMax(false, args);
    } catch (e) {}
  },
  convert: function (val, unit) {
    return val.convertTo(unit.value);
  },
  pi: function () {
    return new Dimension(Math.PI);
  },
  mod: function (a, b) {
    return new Dimension(a.value % b.value, a.unit);
  },
  pow: function (x, y) {
    if (typeof x === 'number' && typeof y === 'number') {
      x = new Dimension(x);
      y = new Dimension(y);
    } else if (!(x instanceof Dimension) || !(y instanceof Dimension)) {
      throw { type: 'Argument', message: 'arguments must be numbers' };
    }
    return new Dimension(Math.pow(x.value, y.value), x.unit);
  },
  percentage: function (n) {
    const result = mathHelper(num => num * 100, '%', n);
    return result;
  }
};
import Quoted from './tree/quoted';
import Anonymous from './tree/anonymous';
import JavaScript from './tree/javascript';
export default {
  e: function (str) {
    return new Quoted("", str instanceof JavaScript ? str.evaluated : str.value, true);
  },
  escape: function (str) {
    return new Anonymous(encodeURIComponent(str.value).replace(/=/g, '%3D').replace(/:/g, '%3A').replace(/#/g, '%23').replace(/;/g, '%3B').replace(/%/g, '%25').replace(/%/g, '%28').replace(/%/g, '%29'));
  },
  replace: function (string, pattern, replacement, flags) {
    let result = string.value;
    replacement = (replacement.type === 'Quoted') ? replacement.value : replacement.toCSS();
    result = result.replace(new RegExp(pattern.value, flags ? flags.value : ""), replacement);
    return new Quoted(string.quote || "", result, string.escaped);
  },
  '%': function (string /* arg, arg, ... */) {
    const args = Array.prototype.slice.call(arguments, 1);
    let result = string.value;
    for (let i = 0; i < args.length; i++) {
      /* jshint loopfunc:true */
      result = result.replace(/%[sda]/i, token => {
        const value =

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((args[i].type === 'Quoted') &&\n
    token.match(/s/i) ? args[i].value : args[i].toCSS());\n
return
token.match(/[A-Z]$/) ? encodeURIComponent(value) : value;\n
});\n
}\n
result =
result.replace(/%g, '%');\n
return new Quoted(string.quote || ", result, string.escaped);\n
}\n};\n", "import
Keyword from './tree/keyword';\nimport DetachedRuleset from './tree/detached-ruleset';\nimport Dimension from
'./tree/dimension';\nimport Color from './tree/color';\nimport Quoted from './tree/quoted';\nimport Anonymous
from './tree/anonymous';\nimport URL from './tree/url';\nimport Operation from './tree/operation';\n\nconst isa = (n,
Type) => (n instanceof Type) ? Keyword.True : Keyword.False;\nconst isunit = (n, unit) => {\n if (unit ===
undefined) {\n throw { type: 'Argument', message: 'missing the required second argument to isunit.' }; }\n }\n
unit = typeof unit.value === 'string' ? unit.value : unit;\n if (typeof unit !== 'string') {\n throw { type:
'Argument', message: 'Second argument to isunit should be a unit or a string.' }; }\n }\n return (n instanceof
Dimension) && n.unit.is(unit) ? Keyword.True : Keyword.False;\n};\n\n\nexport default {\n isruleset: function (n)
{\n return isa(n, DetachedRuleset);\n },\n iscolor: function (n) {\n return isa(n, Color);\n },\n
isnumber: function (n) {\n return isa(n, Dimension);\n },\n isstring: function (n) {\n return isa(n,
Quoted);\n },\n iskeyword: function (n) {\n return isa(n, Keyword);\n },\n isurl: function (n) {\n
return isa(n, URL);\n },\n ispixel: function (n) {\n return isunit(n, 'px');\n },\n ispercentage: function (n)
{\n return isunit(n, '%');\n },\n isem: function (n) {\n return isunit(n, 'em');\n },\n isunit,\n unit:
function (val, unit) {\n if (!(val instanceof Dimension)) {\n throw { type: 'Argument',\n
message: `the first argument to unit must be a number${val instanceof Operation ? '. Have you forgotten
parenthesis?' : ''}` }; }\n }\n if (unit) {\n if (unit instanceof Keyword) {\n unit = unit.value;\n
} else {\n unit = unit.toCSS();\n }\n } else {\n unit = ";\n }\n return new
Dimension(val.value, unit);\n },\n 'get-unit': function (n) {\n return new Anonymous(n.unit);\n
}\n};\n", "import functionRegistry from './function-registry';\nimport functionCaller from './function-
caller';\n\nimport boolean from './boolean';\nimport defaultFunc from './default';\nimport color from
'./color';\nimport colorBlending from './color-blending';\nimport dataUri from './data-uri';\nimport list from
'./list';\nimport math from './math';\nimport number from './number';\nimport string from './string';\nimport svg from
'./svg';\nimport types from './types';\n\nexport default environment => {\n const functions = { functionRegistry,
functionCaller }; \n\n // register functions\n functionRegistry.addMultiple(boolean);\n
functionRegistry.add('default', defaultFunc.eval.bind(defaultFunc));\n functionRegistry.addMultiple(color);\n
functionRegistry.addMultiple(colorBlending);\n functionRegistry.addMultiple(dataUri(environment));\n
functionRegistry.addMultiple(list);\n functionRegistry.addMultiple(math);\n
functionRegistry.addMultiple(number);\n functionRegistry.addMultiple(string);\n
functionRegistry.addMultiple(svg(environment));\n functionRegistry.addMultiple(types);\n\n return
functions;\n};\n", "import Quoted from './tree/quoted';\nimport URL from './tree/url';\nimport * as utils from
'./utils';\nimport logger from './logger';\n\nexport default environment => {\n \n const fallback = (functionThis,
node) => new URL(node, functionThis.index, functionThis.currentFileInfo).eval(functionThis.context); \n\n
return { 'data-uri': function(mimetypeNode, filePathNode) {\n\n if (!filePathNode) {\n filePathNode =
mimetypeNode;\n mimetypeNode = null;\n }\n\n let mimetype = mimetypeNode &&
mimetypeNode.value;\n let filePath = filePathNode.value;\n const currentFileInfo = this.currentFileInfo;\n
const currentDirectory = currentFileInfo.rewriteUrls ?\n currentFileInfo.currentDirectory :
currentFileInfo.entryPath;\n\n const fragmentStart = filePath.indexOf('#');\n let fragment = ";\n if
(fragmentStart !== -1) {\n fragment = filePath.slice(fragmentStart);\n filePath = filePath.slice(0,
fragmentStart);\n }\n const context = utils.clone(this.context);\n context.rawBuffer = true;\n\n
const fileManager = environment.getFileManager(filePath, currentDirectory, context, environment, true);\n\n if
(!fileManager) {\n return fallback(this, filePathNode);\n }\n\n let useBase64 = false;\n\n // detect
the mimetype if not given\n if (!mimetypeNode) {\n\n mimetype =
environment.mimeLookup(filePath);\n\n if (mimetype === 'image/svg+xml') {\n useBase64 =
false;\n } else {\n // use base 64 unless it's an ASCII or UTF-8 format\n const charset =
environment.charsetLookup(mimetype);\n useBase64 = ['US-ASCII', 'UTF-8'].indexOf(charset) < 0;\n

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    }\n      if (useBase64) { mimetype += 'base64'; }\n      }\n      else {\n        useBase64 =
;/base64$/;test(mimetype);\n      }\n      const fileSync = fileManager.loadFileSync(filePath, currentDirectory,
context, environment);\n      if (!fileSync.contents) {\n        logger.warn(`Skipped data-uri embedding of
${filePath} because file not found`);\n        return fallback(this, filePathNode || mimetypeNode);\n      }\n      let
buf = fileSync.contents;\n      if (useBase64 && !environment.encodeBase64) {\n        return fallback(this,
filePathNode);\n      }\n      buf = useBase64 ? environment.encodeBase64(buf) :
encodeURIComponent(buf);\n      const uri = `data:${mimetype},${buf}${fragment}`;\n      return new
URL(new Quoted(`"${uri}"`, uri, false, this.index, this.currentFileInfo), this.index, this.currentFileInfo);\n
}};\n};\n", "import Dimension from './tree/dimension';\nimport Color from './tree/color';\nimport Expression from
'./tree/expression';\nimport Quoted from './tree/quoted';\nimport URL from './tree/url';\n\nexport default
environment => {\n  return { 'svg-gradient': function(direction) {\n    let stops;\n    let gradientDirectionSvg;\n
    let gradientType = 'linear';\n    let rectangleDimension = 'x="0" y="0" width="1" height="1";\n    const
renderEnv = {compress: false};\n    let returner;\n    const directionValue = direction.toCSS(renderEnv);\n
let i;\n    let color;\n    let position;\n    let positionValue;\n    let alpha;\n\n    function
throwArgumentDescriptor() {\n      throw { type: 'Argument',\n        message: 'svg-gradient expects
direction, start_color [start_position], [color position],..., '+\n          'end_color [end_position] or
direction, color list' };\n    }\n\n    if (arguments.length === 2) {\n      if (arguments[1].value.length < 2) {\n
      throwArgumentDescriptor();\n      }\n      stops = arguments[1].value;\n    } else if (arguments.length
< 3) {\n      throwArgumentDescriptor();\n    } else {\n      stops = Array.prototype.slice.call(arguments,
1);\n    }\n\n    switch (directionValue) {\n      case 'to bottom':\n        gradientDirectionSvg =
'x1="0%" y1="0%" x2="0%" y2="100%";\n        break;\n      case 'to right':\n
        gradientDirectionSvg = 'x1="0%" y1="0%" x2="100%" y2="0%";\n        break;\n      case 'to bottom
right':\n        gradientDirectionSvg = 'x1="0%" y1="0%" x2="100%" y2="100%";\n        break;\n
      case 'to top right':\n        gradientDirectionSvg = 'x1="0%" y1="100%" x2="100%" y2="0%";\n
        break;\n      case 'ellipse':\n      case 'ellipse at center':\n        gradientType = 'radial';\n
        gradientDirectionSvg = 'cx="50%" cy="50%" r="75%";\n        rectangleDimension = 'x="50%" y="50%"
width="101" height="101";\n        break;\n      default:\n        throw { type: 'Argument', message:
'svg-gradient direction must be \\to bottom\\, \\to right\\, '+\n          '\\to bottom right\\, \\to top right\\ or
\\ellipse at center\\' };\n    }\n\n    returner = `<svg xmlns="http://www.w3.org/2000/svg" viewBox="0 0 1
1"><${gradientType}Gradient id="g" ${gradientDirectionSvg}>`\n    for (i = 0; i < stops.length; i += 1) {\n
      if (stops[i] instanceof Expression) {\n        color = stops[i].value[0];\n        position =
stops[i].value[1];\n      } else {\n        color = stops[i];\n        position = undefined;\n      }\n\n
      if (!(color instanceof Color) || (!(i === 0 || i + 1 === stops.length) && position === undefined) && !(position
instanceof Dimension))) {\n        throwArgumentDescriptor();\n      }\n      positionValue = position ?
position.toCSS(renderEnv) : i === 0 ? '0%' : '100%';\n      alpha = color.alpha;\n      returner += `<stop
offset="${positionValue}" stop-color="${color.toRGB()}"${alpha < 1 ? ` stop-opacity="${alpha}"` : ''}>`\n
    }\n    returner += `</${gradientType}Gradient><rect ${rectangleDimension} fill="url(#g)" /></svg>`\n\n
returner = encodeURIComponent(returner);\n    returner = `data:image/svg+xml,${returner}`;\n    return new
URL(new Quoted(`"${returner}"`, returner, false, this.index, this.currentFileInfo), this.index, this.currentFileInfo);\n
}};\n};\n", "import contexts from './contexts';\nimport visitor from './visitors';\nimport tree from './tree';\n\nexport
default function(root, options) {\n  options = options || {};\n  let evaldRoot;\n  let variables = options.variables;\n
  const evalEnv = new contexts.Eval(options);\n\n  //\n  // Allows setting variables with a hash, so:\n  //\n  // {
color: new tree.Color('#f01') }` will become:\n  //\n  // new tree.Declaration('@color',\n  //\n  // new tree.Value([\n
  //\n  // new tree.Expression([\n  //\n  // new tree.Color('#f01')\n  //\n  // ])\n  //\n  // ])\n  //\n  // ])\n  //\n  // ])\n  //\n  // if (typeof
variables === 'object' && !Array.isArray(variables)) {\n    variables = Object.keys(variables).map(function (k)
{\n      let value = variables[k];\n      if (!(value instanceof tree.Value)) {\n        if (!(value instanceof
tree.Expression)) {\n          value = new tree.Expression([value]);\n        }\n        value = new
tree.Value([value]);\n      }\n      return new tree.Declaration(`@${k}`, value, false, null, 0);\n    });\n
}

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evalEnv.frames = [new tree.Ruleset(null, variables)];\n  }\n\n  const visitors = [\n    new
visitor.JoinSelectorVisitor(),\n    new visitor.MarkVisibleSelectorsVisitor(true),\n    new
visitor.ExtendVisitor(),\n    new visitor.ToCSSVisitor({compress: Boolean(options.compress)})\n  ];\n\n  const
preEvalVisitors = [];\n  let v;\n  let visitorIterator;\n\n  /**\n   * first() / get() allows visitors to be added while
visiting\n   * \n   * @todo Add scoping for visitors just like functions for @plugin; right now they're global\n
*/\n  if (options.pluginManager) {\n    visitorIterator = options.pluginManager.visitor();\n    for (var i = 0; i <
2; i++) {\n      visitorIterator.first();\n      while ((v = visitorIterator.get())) {\n        if (v.isPreEvalVisitor)
{\n          if (i === 0 || preEvalVisitors.indexOf(v) === -1) {\n            preEvalVisitors.push(v);\n           
v.run(root);\n          }\n        } else {\n          if (i === 0 || visitors.indexOf(v) === -
1) {\n            if (v.isPreVisitor) {\n              visitors.unshift(v);\n            }\n          } else {\n           
visitors.push(v);\n          }\n        }\n      }\n    }\n\n    evaldRoot = root.eval(evalEnv);\n    for (var i = 0; i <
visitors.length; i++) {\n      visitors[i].run(evaldRoot);\n    }\n\n    // Run any remaining visitors added after eval pass\n
if (options.pluginManager) {\n      visitorIterator.first();\n      while ((v = visitorIterator.get())) {\n        if (visitors.indexOf(v) === -1 &&
preEvalVisitors.indexOf(v) === -1) {\n          v.run(evaldRoot);\n        }\n      }\n    }\n\n    return
evaldRoot;\n  };\n"}\n\n  /**\n   * Plugin Manager\n   */\n  class PluginManager {\n    constructor(less) {\n      this.less =
less;\n      this.visitors = [];\n      this.preProcessors = [];\n      this.postProcessors = [];\n      this.installedPlugins
= [];\n      this.fileManagers = [];\n      this.iterator = -1;\n      this.pluginCache = {};\n      this.Loader = new
less.PluginLoader(less);\n    }\n\n    /**\n     * Adds all the plugins in the array\n     * @param {Array} plugins\n
*/\n    addPlugins(plugins) {\n      if (plugins) {\n        for (let i = 0; i < plugins.length; i++) {\n          this.addPlugin(plugins[i]);\n        }\n      }\n    }\n\n    /**\n     * \n     * @param plugin\n     * @param {String}
filename\n     */\n    addPlugin(plugin, filename, functionRegistry) {\n      this.installedPlugins.push(plugin);\n      if (filename) {\n        this.pluginCache[filename] = plugin;\n      }\n      if (plugin.install) {\n        plugin.install(this.less, this, functionRegistry || this.less.functions.functionRegistry);\n      }\n    }\n\n    /**\n     * \n     * @param filename\n     */\n    get(filename) {\n      return this.pluginCache[filename];\n    }\n\n    /**\n     * Adds
a visitor. The visitor object has options on itself to determine\n     * when it should run.\n     * @param visitor\n
*/\n    addVisitor(visitor) {\n      this.visitors.push(visitor);\n    }\n\n    /**\n     * Adds a pre processor object\n     *
@param {object} preProcessor\n     * @param {number} priority - guidelines 1 = before import, 1000 = import,
2000 = after import\n     */\n    addPreProcessor(preProcessor, priority) {\n      let indexToInsertAt;\n      for
(indexToInsertAt = 0; indexToInsertAt < this.preProcessors.length; indexToInsertAt++) {\n        if
(this.preProcessors[indexToInsertAt].priority >= priority) {\n          break;\n        }\n      }\n      this.preProcessors.splice(indexToInsertAt, 0, {preProcessor, priority});\n    }\n\n    /**\n     * Adds a post processor
object\n     * @param {object} postProcessor\n     * @param {number} priority - guidelines 1 = before compression,
1000 = compression, 2000 = after compression\n     */\n    addPostProcessor(postProcessor, priority) {\n      let
indexToInsertAt;\n      for (indexToInsertAt = 0; indexToInsertAt < this.postProcessors.length; indexToInsertAt++)
{\n        if (this.postProcessors[indexToInsertAt].priority >= priority) {\n          break;\n        }\n      }\n      this.postProcessors.splice(indexToInsertAt, 0, {postProcessor, priority});\n    }\n\n    /**\n     * \n     * @param
manager\n     */\n    addFileManager(manager) {\n      this.fileManagers.push(manager);\n    }\n\n    /**\n     * \n
*/\n    @returns {Array}\n    @private\n    getPreProcessors() {\n      const preProcessors = [];\n      for (let i
= 0; i < this.preProcessors.length; i++) {\n        preProcessors.push(this.preProcessors[i].preProcessor);\n      }\n      return preProcessors;\n    }\n\n    /**\n     * \n     * @returns {Array}\n     * @private\n     */\n    getPostProcessors() {\n      const postProcessors = [];\n      for (let i = 0; i < this.postProcessors.length; i++) {\n        postProcessors.push(this.postProcessors[i].postProcessor);\n      }\n      return postProcessors;\n    }\n\n    /**\n     * \n     * @returns {Array}\n     * @private\n     */\n    getVisitors() {\n      return this.visitors;\n    }\n\n    visitor()
{\n      const self = this;\n      return {\n        first: function() {\n          self.iterator = -1;\n          return
self.visitors[self.iterator];\n        },\n        get: function() {\n          self.iterator += 1;\n          return
self.visitors[self.iterator];\n        }\n      };\n    }\n\n    /**\n     * \n     * @returns {Array}\n     * @private\n     */\n    getFileManagers() {\n      return this.fileManagers;\n    }\n  }\n\n  let pm;\n  const PluginManagerFactory =

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function(less, newFactory) {\n  if (newFactory || !pm) {\n    pm = new PluginManager(less);\n  }\n  return\n  pm;\n};\n\n//\nexport default PluginManagerFactory;\n", "use strict";\n\nfunction parseNodeVersion(version) {\n  var match = version.match(/^(v?)(\d{1,2})\.(?!\d{1,2})\.(?!\d{1,2})(?:-([0-9A-Za-z-]+))?(?:\+([0-9A-Za-z-]+))?$/);\n  //\n  eslint-disable-line max-len\n  if (!match) {\n    throw new Error('Unable to parse: ' + version);\n  }\n  var res = {\n    major: parseInt(match[1], 10),\n    minor: parseInt(match[2], 10),\n    patch: parseInt(match[3], 10),\n    pre:\n    match[4] || "",\n    build: match[5] || "",\n  };\n  return res;\n}\n\nmodule.exports = parseNodeVersion;\n", "/* global\n  window, XMLHttpRequest */\n\nimport AbstractFileManager from './less/environment/abstract-file-\n  manager.js';\n\nlet options;\nlet logger;\nlet fileCache = {};\n\n//\n  TODOS - move log somewhere. pathDiff and\n  doing something similar in node. use pathDiff in the other browser file for the initial load\n\nconst FileManager =\n  function() {\n    FileManager.prototype = Object.assign(new AbstractFileManager(), {\n      alwaysMakePathsAbsolute() {\n        return true;\n      },\n      join(basePath, laterPath) {\n        if (!basePath) {\n          return laterPath;\n        }\n        return this.extractUrlParts(laterPath, basePath).path;\n      },\n      doXHR(url, type,\n        callback, errback) {\n        const xhr = new XMLHttpRequest();\n        const async = options.isFileProtocol ?\n        options.fileAsync : true;\n        if (typeof xhr.overrideMimeType === 'function') {\n          xhr.overrideMimeType('text/css');\n        }\n        logger.debug('XHR: Getting '${url}');\n        xhr.open('GET', url,\n          async);\n        xhr.setRequestHeader('Accept', type || 'text/x-less, text/css; q=0.9, */*; q=0.5');\n        xhr.send(null);\n        function handleResponse(xhr, callback, errback) {\n          if (xhr.status >= 200 &&\n            xhr.status < 300) {\n            callback(xhr.responseText,\n              xhr.getResponseHeader('Last-Modified'));\n          } else if (typeof errback === 'function') {\n            errback(xhr.status, url);\n          }\n          if\n            (options.isFileProtocol && !options.fileAsync) {\n            if (xhr.status === 0 || (xhr.status >= 200 && xhr.status <\n              300)) {\n              callback(xhr.responseText);\n            } else {\n              errback(xhr.status, url);\n            }\n          } else if (async) {\n            xhr.onreadystatechange = () => {\n              if (xhr.readyState === 4) {\n                handleResponse(xhr,\n                  callback, errback);\n              }\n            };\n          } else {\n            handleResponse(xhr,\n              callback, errback);\n          }\n        },\n      supports() {\n        return true;\n      },\n      clearFileCache() {\n        fileCache = {};\n      },\n      loadFile(filename, currentDirectory, options, environment) {\n        //\n        TODO: Add prefix\n        support like less-node?\n        //\n        What about multiple paths?\n        if (currentDirectory &&\n          !this.isPathAbsolute(filename)) {\n          filename = currentDirectory + filename;\n        }\n        filename =\n        options.ext ? this.tryAppendExtension(filename, options.ext) : filename;\n        options = options || {};\n        //\n        sheet may be set to the stylesheet for the initial load or a collection of properties including\n        //\n        some context\n        variables for imports\n        const hrefParts = this.extractUrlParts(filename, window.location.href);\n        const href\n        = hrefParts.url;\n        const self\n        = this;\n        return new Promise((resolve, reject) => {\n          if\n            (options.useFileCache && fileCache[href]) {\n            try {\n              const lessText = fileCache[href];\n              return resolve({ contents: lessText, filename: href, webInfo: { lastModified: new Date() }});\n            }\n          }\n          catch (e) {\n            return reject({ filename: href, message: `Error loading file ${href} error was ${e.message}`\n              });\n          }\n          self.doXHR(href, options.mime, function doXHRCallback(data, lastModified)\n            {\n              //\n              per file cache\n              fileCache[href] = data;\n              //\n              Use remote copy (re-parse)\n              resolve({ contents: data, filename: href, webInfo: { lastModified } });\n            }, function doXHRError(status, url)\n            {\n              reject({ type: 'File', message: ` '${url}' wasn't found (${status})`, href });\n            });\n          });\n        });\n      },\n    });\n  }\n\nexport default (opts, log) => {\n  options = opts;\n  logger = log;\n  return FileManager;\n}\n", "import\n  Environment from './environment/environment';\nimport data from './data';\nimport tree from './tree';\nimport\n  AbstractFileManager from './environment/abstract-file-manager';\nimport AbstractPluginLoader from\n  './environment/abstract-plugin-loader';\nimport visitors from './visitors';\nimport Parser from\n  './parser/parser';\nimport functions from './functions';\nimport contexts from './contexts';\nimport LessError from\n  './less-error';\nimport transformTree from './transform-tree';\nimport * as utils from './utils';\nimport PluginManager\n  from './plugin-manager';\nimport logger from './logger';\nimport SourceMapOutput from './source-map-\n  output';\nimport SourceMapBuilder from './source-map-builder';\nimport ParseTree from './parse-tree';\nimport\n  ImportManager from './import-manager';\nimport Parse from './parse';\nimport Render from './render';\nimport { \n  version } from '../package.json';\nimport parseVersion from 'parse-node-version';\n\nexport default

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function(environment, fileManagers) {\n  let sourceMapOutput, sourceMapBuilder, parseTree, importManager;\n\n  environment = new Environment(environment, fileManagers);\n  sourceMapOutput =\n  SourceMapOutput(environment);\n  sourceMapBuilder = SourceMapBuilder(sourceMapOutput, environment);\n  parseTree = ParseTree(sourceMapBuilder);\n  importManager = ImportManager(environment);\n\n  const render\n  = Render(environment, parseTree, importManager);\n  const parse = Parse(environment, parseTree,\n  importManager);\n\n  const v = parseVersion(`v${version}`);\n  const initial = {\n    version: [v.major, v.minor,\n  v.patch],\n    data,\n    tree,\n    Environment,\n    AbstractFileManager,\n    AbstractPluginLoader,\n  environment,\n    visitors,\n    Parser,\n    functions: functions(environment),\n    contexts,\n  SourceMapOutput: sourceMapOutput,\n    SourceMapBuilder: sourceMapBuilder,\n    ParseTree: parseTree,\n    ImportManager: importManager,\n    render,\n    parse,\n    LessError,\n    transformTree,\n    utils,\n    PluginManager,\n    logger\n  };\n\n  // Create a public API\n  const ctor = function(t) {\n    return\n  function() {\n    const obj = Object.create(t.prototype);\n    t.apply(obj,\n  Array.prototype.slice.call(arguments, 0));\n    return obj;\n  };;\n  let t;\n  const api =\n  Object.create(initial);\n  for (const n in initial.tree) {\n    /* eslint guard-for-in: 0 *\n    t = initial.tree[n];\n  if (typeof t === 'function') {\n    api[n.toLowerCase()] = ctor(t);\n  } else {\n    api[n] =\n  Object.create(null);\n    for (const o in t) {\n      /* eslint guard-for-in: 0 *\n  api[n][o.toLowerCase()] = ctor(t[o]);\n    }\n  }\n  }\n\n  /**\n   * Some of the functions assume a `this`\n  context of the API object,\n   * which causes it to fail when wrapped for ES6 imports.\n   * \n   * An assumed\n  `this` should be removed in the future.\n   */\n  initial.parse = initial.parse.bind(api);\n  initial.render =\n  initial.render.bind(api);\n\n  return api;\n};\n\n", "import LessError from './less-error';\nimport transformTree from\n './transform-tree';\nimport logger from './logger';\n\nexport default function(SourceMapBuilder) {\n  class\n  ParseTree {\n    constructor(root, imports) {\n      this.root = root;\n      this.imports = imports;\n    }\n\n    toCSS(options) {\n      let evaldRoot;\n      const result = {};\n      let sourceMapBuilder;\n      try\n      {\n        evaldRoot = transformTree(this.root, options);\n      } catch (e) {\n        throw new\n  LessError(e, this.imports);\n      }\n\n      try {\n        const compress = Boolean(options.compress);\n        if (compress) {\n          logger.warn('The compress option has been deprecated. ' +\n          'We\n  recommend you use a dedicated css minifier, for instance see less-plugin-clean-css.);\n        }\n      }\n\n      const toCSSTOptions = {\n        compress,\n        dumpLineNumbers: options.dumpLineNumbers,\n        strictUnits: Boolean(options.strictUnits),\n        numPrecision: 8;\n      };\n\n      if\n  (options.sourceMap) {\n        sourceMapBuilder = new SourceMapBuilder(options.sourceMap);\n      }\n\n      result.css = sourceMapBuilder.toCSS(evaldRoot, toCSSTOptions, this.imports);\n    } else {\n      result.css = evaldRoot.toCSS(toCSSTOptions);\n    }\n  } catch (e) {\n    throw new LessError(e,\n  this.imports);\n  }\n\n  if (options.pluginManager) {\n    const postProcessors =\n  options.pluginManager.getPostProcessors();\n    for (let i = 0; i < postProcessors.length; i++) {\n      result.css = postProcessors[i].process(result.css, {\n        sourceMap: sourceMapBuilder,\n        options,\n        imports: this.imports\n      });\n    }\n  }\n\n  if (options.sourceMap) {\n    result.map =\n  sourceMapBuilder.getExternalSourceMap();\n  }\n\n  result.imports = [];\n  for (const file in\n  this.imports.files) {\n    if (this.imports.files.hasOwnProperty(file) && file !== this.imports.rootFilename)\n    {\n      result.imports.push(file);\n    }\n  }\n\n  return result;\n}\n\nreturn\n  ParseTree;\n};\n\n", "export default function (SourceMapOutput, environment) {\n  class SourceMapBuilder {\n    constructor(options) {\n      this.options = options;\n    }\n\n    toCSS(rootNode, options, imports) {\n      const sourceMapOutput = new SourceMapOutput(\n        {\n          contentsIgnoredCharsMap:\n  imports.contentsIgnoredChars,\n          rootNode,\n          contentsMap: imports.contents,\n          sourceMapFilename:\n  this.options.sourceMapFilename,\n          sourceMapURL:\n  this.options.sourceMapURL,\n          outputFilename: this.options.sourceMapOutputFilename,\n          sourceMapBasepath: this.options.sourceMapBasepath,\n          sourceMapRootpath:\n  this.options.sourceMapRootpath,\n          outputSourceFiles: this.options.outputSourceFiles,\n          sourceMapGenerator:\n  this.options.sourceMapGenerator,\n          sourceMapFileInline:

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    original: { line: sourceLines.length, column: sourceColumns.length},\n          source:
this.normalizeFilename(fileInfo.filename));\n          } else {\n          for (i = 0; i < lines.length; i++) {\n
    this._sourceMapGenerator.addMapping({ generated: { line: this._lineNumber + i + 1, column: i === 0 ?
this._column : 0},\n          original: { line: sourceLines.length + i, column: i === 0 ?
sourceColumns.length : 0},\n          source: this.normalizeFilename(fileInfo.filename)});\n
}\n    }\n    }\n\n    if (lines.length === 1) {\n    this._column += columns.length;\n    }
else {\n    this._lineNumber += lines.length - 1;\n    this._column = columns.length;\n    }\n\n
    this._css.push(chunk);\n    }\n\n    isEmpty() {\n    return this._css.length === 0;\n    }\n\n
toCSS(context) {\n    this._sourceMapGenerator = new this._sourceMapGeneratorConstructor({ file:
this._outputFilename, sourceRoot: null });\n\n    if (this._outputSourceFiles) {\n    for (const filename in
this._contentsMap) {\n    if (this._contentsMap.hasOwnProperty(filename)) {\n    let source =
this._contentsMap[filename];\n    if (this._contentsIgnoredCharsMap[filename]) {\n
source = source.slice(this._contentsIgnoredCharsMap[filename]);\n    }\n
this._sourceMapGenerator.setSourceContent(this.normalizeFilename(filename), source);\n    }\n
}\n    }\n\n    this._rootNode.genCSS(context, this);\n\n    if (this._css.length > 0) {\n    let
sourceMapURL;\n    const sourceMapContent = JSON.stringify(this._sourceMapGenerator.toJSON());\n\n
    if (this.sourceMapURL) {\n    sourceMapURL = this.sourceMapURL;\n    } else if
(this._sourceMapFilename) {\n    sourceMapURL = this._sourceMapFilename;\n    }\n
this.sourceMapURL = sourceMapURL;\n    this.sourceMap = sourceMapContent;\n    }\n\n
return this._css.join(");\n    }\n    }\n\n    return SourceMapOutput;\n    };\n\n", "import contexts from
'./contexts';\nimport Parser from './parser/parser';\nimport LessError from './less-error';\nimport * as utils from
'./utils';\nimport logger from './logger';\n\nexport default function(environment) {\n // FileInfo = {\n //
'rewriteUrls' - option - whether to adjust URL's to be relative\n // 'filename' - full resolved filename of current
file\n // 'rootpath' - path to append to normal URLs for this node\n // 'currentDirectory' - path to the current file,
absolute\n // 'rootFilename' - filename of the base file\n // 'entryPath' - absolute path to the entry file\n //
'reference' - whether the file should not be output and only output parts that are referenced\n\n class
Importer {\n    constructor(less, context, rootFileInfo) {\n    this.less = less;\n    this.rootFilename
= rootFileInfo.filename;\n    this.paths = context.paths || []; // Search paths, when importing\n
this.contents = {}; // map - filename to contents of all the files\n    this.contentsIgnoredChars = {}; //
map - filename to lines at the beginning of each file to ignore\n    this.mime = context.mime;\n    this.error
= null;\n    this.context = context;\n    // Deprecated? Unused outside of here, could be useful.\n
this.queue = []; // Files which haven't been imported yet\n    this.files = {}; // Holds the imported parse
trees.\n    }\n\n    /**\n    * Add an import to be imported\n    * @param path - the raw path\n    *
@param tryAppendExtension - whether to try appending a file extension (.less or .js if the path has no extension)\n
    * @param currentFileInfo - the current file info (used for instance to work out relative paths)\n    * @param
importOptions - import options\n    * @param callback - callback for when it is imported\n    */\n
push(path, tryAppendExtension, currentFileInfo, importOptions, callback) {\n    const importer = this,\n    pluginLoader = this.context.pluginManager.Loader;\n\n    this.queue.push(path);\n\n    const
fileParsedFunc = function (e, root, fullPath) {\n
importManager.queue.splice(importManager.queue.indexOf(path), 1); // Remove the path from the queue\n\n
const importedEqualsRoot = fullPath === importManager.rootFilename;\n    if (importOptions.optional
&& e) {\n    callback(null, {rules:[]}, false, null);\n    logger.info(`The file ${fullPath} was
skipped because it was not found and the import was marked optional.`);\n    } else {\n
// Inline imports aren't cached here.\n    // If we start to cache them, please make sure they won't conflict
with non-inline imports of the\n    // same name as they used to do before this comment and the condition
below have been added.\n    if (!importManager.files[fullPath] && !importOptions.inline) {\n
importManager.files[fullPath] = { root, options: importOptions }; \n    } else if (e &&
!importManager.error) { importManager.error = e; \n    callback(e, root, importedEqualsRoot,

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fullPath);\n        }\n        };\n        const newFileInfo = {\n            rewriteUrls:
this.context.rewriteUrls,\n            entryPath: currentFileInfo.entryPath,\n            rootpath:
currentFileInfo.rootpath,\n            rootFilename: currentFileInfo.rootFilename\n        };\n        const
fileManager = environment.getFileManager(path, currentFileInfo.currentDirectory, this.context, environment);\n
        if (!fileManager) {\n            fileParsedFunc({ message: `Could not find a file-manager for ${path}` });\n
        return;\n        }\n        const loadFileCallback = function(loadedFile) {\n            let plugin;\n
const resolvedFilename = loadedFile.filename;\n            const contents = loadedFile.contents.replace(/^\uFEFF/,
");\n            // Pass on an updated rootpath if path of imported file is relative and file\n            // is in a
(sub/sup) directory\n            // Examples:\n            // - If path of imported file is
'module/nav/nav.less' and rootpath is 'less',\n            // then rootpath should become 'less/module/nav'\n
// - If path of imported file is './mixins.less' and rootpath is 'less',\n            // then rootpath should become
'less/..'\n            newFileInfo.currentDirectory = fileManager.getPath(resolvedFilename);\n            if
(newFileInfo.rewriteUrls) {\n                newFileInfo.rootpath = fileManager.join(\n
(importManager.context.rootpath || ""),\n                fileManager.pathDiff(newFileInfo.currentDirectory,
newFileInfo.entryPath));\n            if (!fileManager.isPathAbsolute(newFileInfo.rootpath) &&
fileManager.alwaysMakePathsAbsolute()) {\n                newFileInfo.rootpath =
fileManager.join(newFileInfo.entryPath, newFileInfo.rootpath);\n            }\n        }\n
newFileInfo.filename = resolvedFilename;\n        const newEnv = new
contexts.Parse(importManager.context);\n        newEnv.processImports = false;\n
importManager.contents[resolvedFilename] = contents;\n        if (currentFileInfo.reference ||
importOptions.reference) {\n            newFileInfo.reference = true;\n        }\n        if
(importOptions.isPlugin) {\n            plugin = pluginLoader.evalPlugin(contents, newEnv, importManager,
importOptions.pluginArgs, newFileInfo);\n            if (plugin instanceof LessError) {\n
fileParsedFunc(plugin, null, resolvedFilename);\n            }\n            else {\n
fileParsedFunc(null, plugin, resolvedFilename);\n            }\n            } else if (importOptions.inline) {\n
fileParsedFunc(null, contents, resolvedFilename);\n            } else {\n            // import (multiple) parse
trees apparently get altered and can't be cached.\n            // TODO: investigate why this is\n            if
(importManager.files[resolvedFilename])\n                &&
!importManager.files[resolvedFilename].options.multiple\n                && !importOptions.multiple) {\n
fileParsedFunc(null, importManager.files[resolvedFilename].root, resolvedFilename);\n            }\n
        else {\n            new Parser(newEnv, importManager, newFileInfo).parse(contents, function (e, root) {\n
fileParsedFunc(e, root, resolvedFilename);\n            });\n        }\n    }\n
};\n    let loadedFile;\n    let promise;\n    const context = utils.clone(this.context);\n    if
(tryAppendExtension) {\n        context.ext = importOptions.isPlugin ? '.js' : '.less';\n    }\n    if
(importOptions.isPlugin) {\n        context.mime = 'application/javascript';\n    }\n    if (context.syncImport)
{\n        loadedFile = pluginLoader.loadPluginSync(path, currentFileInfo.currentDirectory, context,
environment, fileManager);\n    } else {\n        promise = pluginLoader.loadPlugin(path,
currentFileInfo.currentDirectory, context, environment, fileManager);\n    }\n    }\n    else {\n
        if (context.syncImport) {\n            loadedFile = fileManager.loadFileSync(path,
currentFileInfo.currentDirectory, context, environment);\n        } else {\n            promise =
fileManager.loadFile(path, currentFileInfo.currentDirectory, context, environment,\n            (err, loadedFile)
=> {\n                if (err) {\n                    fileParsedFunc(err);\n                } else {\n
loadFileCallback(loadedFile);\n                }\n            });\n        }\n    }\n    if
(loadedFile) {\n        if (!loadedFile.filename) {\n            fileParsedFunc(loadedFile);\n        } else {\n
loadFileCallback(loadedFile);\n        }\n    } else if (promise) {\n
promise.then(loadFileCallback, fileParsedFunc);\n    }\n    }\n    }\n    }\n    return
ImportManager;\n};\n", "import * as utils from './utils';\n\nexport default function(environment, ParseTree,
ImportManager) {\n    const render = function (input, options, callback) {\n        if (typeof options === 'function')

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    callback = options;\n        options = utils.copyOptions(this.options, {});\n        }\n        else {\n
options = utils.copyOptions(this.options, options || {});\n        }\n        if (!callback) {\n        const self = this;\n
return new Promise(function (resolve, reject) {\n        render.call(self, input, options, function(err, output)
{\n        if (err) {\n        reject(err);\n        } else {\n        resolve(output);\n
}\n        });\n        });\n        } else {\n        this.parse(input, options, function(err, root, imports, options)
{\n        if (err) { return callback(err); }\n        let result;\n        try {\n        const parseTree =
new ParseTree(root, imports);\n        result = parseTree.toCSS(options);\n        }\n        catch (err) {\n
return callback(err); }\n        callback(null, result);\n        });\n        }\n        });\n        return
render;\n};\n\n", "import contexts from './contexts';\nimport Parser from './parser/parser';\nimport PluginManager from
 './plugin-manager';\nimport LessError from './less-error';\nimport * as utils from './utils';\n\nexport default
function(environment, ParseTree, ImportManager) {\n    const parse = function (input, options, callback) {\n\n
if (typeof options === 'function') {\n        callback = options;\n        options = utils.copyOptions(this.options,
{});\n        }\n        else {\n        options = utils.copyOptions(this.options, options || {});\n        }\n        if
(!callback) {\n        const self = this;\n        return new Promise(function (resolve, reject) {\n
parse.call(self, input, options, function(err, output) {\n        if (err) {\n        reject(err);\n
}\n        } else {\n        resolve(output);\n        }\n        });\n        });\n        } else {\n        let
context;\n        let rootFileInfo;\n        const pluginManager = new PluginManager(this,
!options.reUsePluginManager);\n        options.pluginManager = pluginManager;\n        context = new
contexts.Parse(options);\n        if (options.rootFileInfo) {\n        rootFileInfo = options.rootFileInfo;\n
}\n        else {\n        const filename = options.filename || 'input';\n        const entryPath =
filename.replace(/^[^\\|\\|\\|]*$/, "");\n        rootFileInfo = {\n        filename,\n        rewriteUrls:
context.rewriteUrls,\n        rootpath: context.rootpath || "",\n        currentDirectory: entryPath,\n
entryPath,\n        rootFilename: filename\n        };\n        // add in a missing trailing slash\n
if (rootFileInfo.rootpath && rootFileInfo.rootpath.slice(-1) !== '/') {\n        rootFileInfo.rootpath += '/';\n
}\n        }\n        const imports = new ImportManager(this, context, rootFileInfo);\n
this.importManager = imports;\n        // TODO: allow the plugins to be just a list of paths or names\n        //
Do an async plugin queue like lessc\n        if (options.plugins) {\n
options.plugins.forEach(function(plugin) {\n        let evalResult, contents;\n        if
(plugin.fileContent) {\n        contents = plugin.fileContent.replace(/^\\uFEFF/, "");\n
evalResult = pluginManager.Loader.evalPlugin(contents, context, imports, plugin.options, plugin.filename);\n
if (evalResult instanceof LessError) {\n        return callback(evalResult);\n        }\n
}\n        else {\n        pluginManager.addPlugin(plugin);\n        }\n        });\n
}\n        new Parser(context, imports, rootFileInfo)\n        .parse(input, function (e, root) {\n        if
(e) { return callback(e); }\n        callback(null, root, imports, options);\n        }, options);\n        }\n        });\n
return parse;\n};\n\n", "// TODO: Add tests for browser @plugin\n* global window *\n\nimport
AbstractPluginLoader from './less/environment/abstract-plugin-loader.js';\n\n**\n* Browser Plugin Loader\n
*\n\nconst PluginLoader = function(less) {\n    this.less = less;\n    // Should we shim this.require for browser?
Probably not?\n};\n\nPluginLoader.prototype = Object.assign(new AbstractPluginLoader(), {\n
loadPlugin(filename, basePath, context, environment, fileManager) {\n    return new Promise((fulfill, reject) =>
{\n        fileManager.loadFile(filename, basePath, context, environment)\n        .then(fulfill).catch(reject);\n
});\n    });\n\nexport default PluginLoader;\n\n", "import * as utils from './utils';\nimport browser from
 './browser';\n\nexport default (window, less, options) => {\n\n    function errorHTML(e, rootHref) {\n        const id =
`less-error-message:${utils.extractId(rootHref || "")}`;\n        const template = '<li><label>{line}</label><pre
class="{class}</pre></li>';\n        const elem = window.document.createElement('div');\n        let
timer;\n        let content;\n        const errors = [];\n        const filename = e.filename || rootHref;\n        const
filenameNoPath = filename.match(/^[^\\|\\|\\|]*(\\?.*)?$/)[1];\n        elem.id = id;\n        elem.className = 'less-
error-message';\n        content = `<h3>${e.type || 'Syntax'}Error: ${e.message || 'There is an error in your .less
file'}` + \n        `<h3><p>in <a href="\${filename}">${filenameNoPath}</a>`; \n        const errorline = (e, i,

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options.plugins.concat(window.LESS_PLUGINS);\n\nconst less = root(window, options);\nexport default
less;\n\nwindow.less = less;\n\nlet css;\nlet head;\nlet style;\n\n// Always restore page visibility\nfunction
resolveOrReject(data) {\n  if (data.filename) {\n    console.warn(data);\n  }\n  if (!options.async) {\n
head.removeChild(style);\n  }\n}\n\nif (options.onReady) {\n  if (!watch/.test(window.location.hash)) {\n
less.watch();\n  }\n  // Simulate synchronous stylesheet loading by hiding page rendering\n  if (!options.async)
{\n    css = 'body { display: none !important }';\n    head = document.head ||
document.getElementsByTagName('head')[0];\n    style = document.createElement('style');\n\n    style.type =
'text/css';\n    if (style.styleSheet) {\n      style.styleSheet.cssText = css;\n    } else {\n
style.appendChild(document.createTextNode(css));\n    }\n\n    head.appendChild(style);\n  }\n
less.registerStylesheetsImmediately();\n  less.pageLoadFinished = less.refresh(less.env ===
'development').then(resolveOrReject, resolveOrReject);\n}\n\n", "// Export a new default each time\nexport default
function() {\n  return {\n    /* Inline Javascript - @plugin still allowed */\n    javascriptEnabled: false,\n\n
/* Outputs a makefile import dependency list to stdout. */\n    depends: false,\n\n    /* (DEPRECATED)
Compress using less built-in compression. */\n    * This does an okay job but does not utilise all the tricks of\n
* dedicated css compression. */\n    compress: false,\n\n    /* Runs the less parser and just reports errors without
any output. */\n    lint: false,\n\n    /* Sets available include paths. */\n    * If the file in an @import rule does
not exist at that exact location, */\n    * less will look for it at the location(s) passed to this option. */\n    * You
might use this for instance to specify a path to a library which */\n    * you want to be referenced simply and
relatively in the less files. */\n    paths: [],\n\n    /* color output in the terminal */\n    color: true,\n\n    /*
The strictImports controls whether the compiler will allow an @import inside of either */\n    * @media blocks or
(a later addition) other selector blocks. */\n    * See: https://github.com/less/less.js/issues/656 */\n    strictImports:
false,\n\n    /* Allow Imports from Insecure HTTPS Hosts */\n    insecure: false,\n\n    /* Allows you to add a
path to every generated import and url in your css. */\n    * This does not affect less import statements that are
processed, just ones */\n    * that are left in the output css. */\n    rootpath: "",\n\n    /* By default URLs are kept
as-is, so if you import a file in a sub-directory */\n    * that references an image, exactly the same URL will be
output in the css. */\n    * This option allows you to re-write URL's in imported files so that the */\n    * URL is
always relative to the base imported file */\n    rewriteUrls: false,\n\n    /* How to process math */\n    * 0
always - eagerly try to solve all operations\n    * 1 parens-division - require parens for division\n    * 2 parens |
strict - require parens for all operations\n    * 3 strict-legacy - legacy strict behavior (super-strict)\n    */\n    math: 1,\n\n    /* Without this option, less attempts to guess at the output unit when it does
maths. */\n    strictUnits: false,\n\n    /* Effectively the declaration is put at the top of your base Less file, */\n
* meaning it can be used but it also can be overridden if this variable */\n    * is defined in the file. */\n    globalVars: null,\n\n    /* As opposed to the global variable option, this puts the declaration at the */\n    * end of
your base file, meaning it will override anything defined in your Less file. */\n    modifyVars: null,\n\n    /*
This option allows you to specify a argument to go on to every URL. */\n    urlArgs: "{\n  }\n};", "import
{addDataAttr} from './utils';\nimport browser from './browser';\n\nexport default (window, options) => {\n\n  // use
options from the current script tag data attributes\n  addDataAttr(options, browser.currentScript(window));\n\n  if
(options.isFileProtocol === undefined) {\n    options.isFileProtocol = /^(file|(chrome|safari)-
extension)?[resource|qrc|app]:/.test(window.location.protocol);\n  }\n\n  // Load styles asynchronously (default:
false)\n  // This is set to `false` by default, so that the body\n  // doesn't start loading before the stylesheets
are parsed.\n  // Setting this to `true` can result in flickering.\n  //\n  options.async = options.async || false;\n
options.fileAsync = options.fileAsync || false;\n\n  // Interval between watch polls\n  options.poll = options.poll ||
(options.isFileProtocol ? 1000 : 1500);\n\n  options.env = options.env || (window.location.hostname === '127.0.0.1'
||\n  window.location.hostname === '0.0.0.0' ||\n  window.location.hostname === 'localhost' ||\n
(window.location.port &&\n  window.location.port.length > 0) ||\n  options.isFileProtocol\n  ?
'development'\n  : 'production');\n\n  const dumpLineNumbers =
!/dumpLineNumbers:(comments|mediaquery|all)/.exec(window.location.hash);\n  if (dumpLineNumbers) {\n
options.dumpLineNumbers = dumpLineNumbers[1];\n  }\n\n  if (options.useFileCache === undefined) {\n

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options.useFileCache = true;\n  }\n\n  if (options.onReady === undefined) {\n    options.onReady = true;\n  }\n\n  if (options.relativeUrls) {\n    options.rewriteUrls = 'all';\n  }\n};\n\n"/\n// index.js\n// Should expose the additional browser functions on to the less object\n\nimport { addDataAttr } from './utils';\nimport lessRoot from './less';\nimport browser from './browser';\nimport FM from './file-manager';\nimport PluginLoader from './plugin-loader';\nimport LogListener from './log-listener';\nimport ErrorReporting from './error-reporting';\nimport Cache from './cache';\nimport ImageSize from './image-size';\n\nexport default (window, options) => {\n  const document = window.document;\n  const less = lessRoot();\n  less.options = options;\n  const environment = less.environment;\n  const FileManager = FM(options, less.logger);\n  const fileManager = new FileManager();\n  environment.addFileManager(fileManager);\n  less.FileManager = FileManager;\n  less.PluginLoader = PluginLoader;\n\n  LogListener(less, options);\n  const errors = ErrorReporting(window, less, options);\n  const cache = less.cache = options.cache || Cache(window, options, less.logger);\n  ImageSize(less.environment);\n\n  // Setup user functions - Deprecate?\n  if (options.functions) {\n    less.functions.functionRegistry.addMultiple(options.functions);\n  }\n\n  const typePattern = /^text\\/(x-)?less$/;\n\n  function clone(obj) {\n    const cloned = {};\n    for (const prop in obj) {\n      if (obj.hasOwnProperty(prop)) {\n        cloned[prop] = obj[prop];\n      }\n    }\n    return cloned;\n  }\n\n  // only really needed for phantom\n  function bind(func, thisArg) {\n    const curryArgs = Array.prototype.slice.call(arguments, 2);\n    return function() {\n      const args = curryArgs.concat(Array.prototype.slice.call(arguments, 0));\n      return func.apply(thisArg, args);\n    };\n  }\n\n  function loadStyles(modifyVars) {\n    const styles = document.getElementsByTagName('style');\n    let style;\n\n    for (let i = 0; i < styles.length; i++) {\n      style = styles[i];\n      if (style.type.match(typePattern)) {\n        const instanceOptions = clone(options);\n        instanceOptions.modifyVars = modifyVars;\n        const lessText = style.innerHTML || '';\n        instanceOptions.filename = document.location.href.replace(/#.*$/, '');\n        // use closure to store current style\n        less.render(lessText, instanceOptions, bind((style, e, result) => {\n          if (e) {\n            errors.add(e, 'inline');\n          } else {\n            style.type = 'text/css';\n            if (style.styleSheet) {\n              style.styleSheet.cssText = result.css;\n            } else {\n              style.innerHTML = result.css;\n            }\n          }, null, style));\n        }, null, style));\n      }\n    }\n\n    function loadStyleSheet(sheet, callback, reload, remaining, modifyVars) {\n      const instanceOptions = clone(options);\n      addDataAttr(instanceOptions, sheet);\n      instanceOptions.mime = sheet.type;\n\n      if (modifyVars) {\n        instanceOptions.modifyVars = modifyVars;\n      }\n\n      function loadInitialFileCallback(loadedFile) {\n        const data = loadedFile.contents;\n        const path = loadedFile.filename;\n        const webInfo = loadedFile.webInfo;\n\n        const newFileInfo = {\n          currentDirectory: fileManager.getPath(path),\n          filename: path,\n          rootFilename: path,\n          rewriteUrls: instanceOptions.rewriteUrls\n        };\n\n        newFileInfo.entryPath = newFileInfo.currentDirectory;\n        newFileInfo.rootpath = instanceOptions.rootpath || newFileInfo.currentDirectory;\n\n        if (webInfo) {\n          webInfo.remaining = remaining;\n\n          const css = cache.getCSS(path, webInfo, instanceOptions.modifyVars);\n          if (!reload && css) {\n            webInfo.local = true;\n            callback(null, css, data, sheet, webInfo, path);\n            return;\n          }\n        }\n\n        // TODO add tests around how this behaves when reloading\n        errors.remove(path);\n        instanceOptions.rootFileInfo = newFileInfo;\n        less.render(data, instanceOptions, (e, result) => {\n          if (e) {\n            e.href = path;\n            callback(e);\n          } else {\n            cache.setCSS(sheet.href, webInfo.lastModified, instanceOptions.modifyVars, result.css);\n            callback(null, result.css, data, sheet, webInfo, path);\n          }\n        });\n      }\n\n      fileManager.loadFile(sheet.href, null, instanceOptions, environment).then(loadedFile => {\n        loadInitialFileCallback(loadedFile);\n      }).catch(err => {\n        console.log(err);\n        callback(err);\n      });\n    }\n\n    function loadStyleSheets(callback, reload, modifyVars) {\n      for (let i = 0; i < less.sheets.length; i++) {\n        loadStyleSheet(less.sheets[i], callback, reload, less.sheets.length - (i + 1), modifyVars);\n      }\n    }\n\n    function initRunningMode() {\n      if (less.env === 'development') {\n

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less.watchTimer = setInterval(() => {\n      if (less.watchMode) {\n
fileManager.clearFileCache();\n      loadStyleSheets((e, css, _, sheet, webInfo) => {\n      if (e)
{\n      errors.add(e, e.href || sheet.href);\n      } else if (css) {\n
browser.createCSS(window.document, css, sheet);\n      }\n      });\n      },
options.poll);\n      }\n      }\n      /\n      // Watch mode\n      /\n      less.watch = function () {\n      if
(!less.watchMode) {\n      less.env = 'development';\n      initRunningMode();\n      }\n      this.watchMode
= true;\n      return true;\n      };\n      }\n      less.unwatch = function () {clearInterval(less.watchTimer); this.watchMode =
false; return false;};\n      }\n      /\n      // Synchronously get all <link> tags with the 'rel' attribute set to\n      //
\"stylesheet/less\".\n      /\n      less.registerStylesheetsImmediately = () => {\n      const links =
document.getElementsByTagName('link');\n      less.sheets = [];\n      for (let i = 0; i < links.length; i++) {\n
if (links[i].rel === 'stylesheet/less' || (links[i].rel.match(/stylesheet/) &&\n
(links[i].type.match(typePattern)))) {\n      less.sheets.push(links[i]);\n      }\n      }\n      };\n      }\n      /\n      //
Asynchronously get all <link> tags with the 'rel' attribute set to\n      //\"stylesheet/less\", returning a Promise.\n      /\n
less.registerStylesheets = () => new Promise((resolve, reject) => {\n      less.registerStylesheetsImmediately();\n
resolve();\n      });\n      }\n      /\n      // With this function, it's possible to alter variables and re-render\n      // CSS without
reloading less-files\n      /\n      less.modifyVars = record => less.refresh(true, record, false);\n      less.refresh =
(reload, modifyVars, clearFileCache) => {\n      if ((reload || clearFileCache) && clearFileCache !== false) {\n
fileManager.clearFileCache();\n      }\n      return new Promise((resolve, reject) => {\n      let startTime;\n
let endTime;\n      let totalMilliseconds;\n      let remainingSheets;\n      startTime = endTime = new
Date();\n      // Set counter for remaining unprocessed sheets\n      remainingSheets = less.sheets.length;\n
if (remainingSheets === 0) {\n      endTime = new Date();\n      totalMilliseconds = endTime -
startTime;\n      less.logger.info('Less has finished and no sheets were loaded.);\n      resolve({\n
startTime,\n      endTime,\n      totalMilliseconds,\n      sheets: less.sheets.length\n
});\n      } else {\n      // Relies on less.sheets array, callback seems to be guaranteed to be called for
every element of the array\n      loadStyleSheets((e, css, _, sheet, webInfo) => {\n      if (e) {\n
errors.add(e, e.href || sheet.href);\n      reject(e);\n      return;\n      }\n
if (webInfo.local) {\n      less.logger.info(`Loading ${sheet.href} from cache.`);\n      } else {\n
less.logger.info(`Rendered ${sheet.href} successfully.`);\n      }\n
browser.createCSS(window.document, css, sheet);\n      less.logger.info(`CSS for ${sheet.href} generated
in ${new Date() - endTime}ms`);\n      // Count completed sheet\n      remainingSheets--;\n
// Check if the last remaining sheet was processed and then call the promise\n      if (remainingSheets
=== 0) {\n      totalMilliseconds = new Date() - startTime;\n      less.logger.info(`Less has
finished. CSS generated in ${totalMilliseconds}ms`);\n      resolve({\n      startTime,\n
endTime,\n      totalMilliseconds,\n      sheets: less.sheets.length\n
});\n      }\n      endTime = new Date();\n      }, reload, modifyVars);\n      }\n      }\n
loadStyles(modifyVars);\n      });\n      };\n      }\n      less.refreshStyles = loadStyles;\n      return less;\n      };\n      },\"export default
(less, options) => {\n      const logLevel_debug = 4;\n      const logLevel_info = 3;\n      const logLevel_warn = 2;\n
const logLevel_error = 1;\n      // The amount of logging in the javascript console.\n      // 3 - Debug, information and
errors\n      // 2 - Information and errors\n      // 1 - Errors\n      // 0 - None\n      // Defaults to 2\n      options.logLevel =
typeof options.logLevel !== 'undefined' ? options.logLevel : (options.env === 'development' ? logLevel_info :
logLevel_error);\n      if (!options.loggers) {\n      options.loggers = [{\n      debug: function(msg) {\n
if (options.logLevel >= logLevel_debug) {\n      console.log(msg);\n      }\n      },\n      info:
function(msg) {\n      if (options.logLevel >= logLevel_info) {\n      console.log(msg);\n      }\n
},\n      warn: function(msg) {\n      if (options.logLevel >= logLevel_warn) {\n
console.warn(msg);\n      }\n      },\n      error: function(msg) {\n      if (options.logLevel >=
logLevel_error) {\n      console.error(msg);\n      }\n      }\n      }];\n      }\n      for (let i = 0; i <
options.loggers.length; i++) {\n      less.logger.addListener(options.loggers[i]);\n      }\n      };\n      },\"// Cache system is a
bit outdated and could do with work\n\nexport default (window, options, logger) => {\n      let cache = null;\n      if

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match", "map", "c", "parseInt", "alpha", "split", "clamp", "v", "max", "min", "toHex", "round", "toString", "prototype", "assign", "luma", "r", "g", "pow", "toCSS", "doNotCompress", "color", "colorFunction", "compress", "args", "fround", "indexOf", "toHSL", "h", "l", "toRGB", "splitcolor", "operate", "other", "\_operate", "d", "toHSV", "toARGB", "x", "fromKeyword", "keyword", "key", "toLowerCase", "slice", "Paren", "eval", "\_noSpaceCombinators",  
", "|", "Combinator", "emptyOrWhitespace", "trim", "spaceOrEmpty", "Element", "combinator", "isVariable", "currentFileInfo", "visibilityInfo", "copyVisibilityInfo", "setParent", "accept", "clone", "firstSelector", "charAt", "ALWAYS", "PARENTS\_DIVISION", "PARENTS", "RewriteUrls", "getType", "payload", "call", "copy", "target", "constructor", "getPrototypeOf", "il", "arguments", "k", "j", "jl", "\_\_spreadArrays", "getOwnPropertyNames", "getOwnPropertySymbols", "reduce", "carry", "props", "includes", "newVal", "originalObject", "includeNonenumerable", "propType", "propertyIsEnumerable", "defineProperty", "enumerable", "writable", "configurable", "assignProp", "nonenumerable", "getLocation", "inputStream", "n", "line", "column", "copyArray", "arr", "obj", "cloned", "prop", "defaults", "obj1", "obj2", "newObj", "\_defaults", "defaults\_1", "copyOptions", "opts", "strictMath", "math", "Constants.Math", "relativeUrls", "rewriteUrls", "Constants.RewriteUrls", "flattenArray", "result", "length\_1", "anonymousFunc", "LessError", "fileContentMap", "currentFilename", "message", "stack", "input", "contents", "loc", "utils.getLocation", "col", "callLine", "lines", "found", "func", "Function", "lineAdjust", "callExtract", "extract", "create", "F", "stylize", "str", "errorTxt", "substr", "Selector", "elements", "extendList", "condition", "evaldCondition", "getElements", "mixinElements\_", "visitArray", "createDerived", "newSelector", "mediaEmpty", "els", "parseNode", "err", "imports", "createEmptySelectors", "el", "sels", "olen", "len", "mixinElements", "shift", "isJustParentSelector", "extend", "getIsOutput", "Value", "Keyword", "True", "False", "Anonymous", "mapLines", "rulesetLike", "allowRoot", "isRulesetLike", "Boolean", "MATH", "Declaration", "name", "important", "merge", "inline", "variable", "asComment", "ctx", "debugInfo", "lineNumber", "fileName", "asMediaQuery", "filenameWithProtocol", "test", "lineSeparator", "dumpLineNumbers", "lastRule", "prevMath", "evaldValue", "mathBypass", "evalName", "importantScope", "importantResult", "pop", "makeImportant", "Comment", "isLineComment", "getDebugInfo", "isSilent", "isCompressed", "contexts", "copyFromOriginal", "original", "destination", "propertiesToCopy", "parseCopyProperties", "Parse", "paths", "evalCopyProperties", "isPathRelative", "path", "isPathLocalRelative", "Eval", "frames", "enterCalc", "calcStack", "inCalc", "exitCalc", "inParenthesis", "parensStack", "outOfParenthesis", "mathOn", "isMathOn", "pathRequiresRewrite", "rewritePath", "rootpath", "newPath", "normalizePath", "segment", "segments", "reverse", "makeRegistry", "base", "\_data", "addMultiple", "keys", "\_this", "get", "getLocalFunctions", "inherit", "defaultFunc", "value\_", "error\_", "reset", "Ruleset", "selectors", "rules", "strictImports", "\_lookups", "\_variables", "\_properties", "isRuleset", "selCnt", "selector", "hasVariable", "hasOnePassingSelector", "toParseSelectors", "utils.flattenArray", "rule", "subRule", "utils.copyArray", "ruleset", "originalRuleset", "root", "firstRoot", "allowImports", "functionRegistry", "globalFunctionRegistry", "ctxFrames", "unshift", "ctxSelectors", "evalImports", "rsRules", "evalFirst", "mediaBlockCount", "mediaBlocks", "filter", "apply", "resetCache", "bubbleSelectors", "importRules", "matchArgs", "matchCondition", "lastSelector", "\_rulesets", "variables", "hash", "vars", "name\_1", "properties", "name\_2", "decl", "parseValue", "property", "lastDeclaration", "toParse", "transformDeclaration", "nodes\_1", "rulesets", "filtRules", "prependRule", "find", "foundMixins", "ruleNodes", "tabLevel", "sep", "tabRuleStr", "tabSetStr", "charsetNodeIndex", "importNodeIndex", "isCharset", "pathCnt", "pathSubCnt", "currentLastRule", "isVisible", "joinSelectors", "joinSelector", "createParenthesis", "elementsToPak", "originalElement", "replacementParen", "insideParent", "createSelector", "containedElement", "element", "addReplacementIntoPath", "beginningPath", "addPath", "replacedElement", "originalSelector", "newSelectorPath", "newJoinedSelector", "parentEl", "restOfPath", "addAllReplacementsIntoPath", "addPaths", "mergeElementsOnToSelectors", "sel", "deriveSelector", "deriveFrom", "newPaths", "replaceParentSelector", "inSelector", "currentElements", "newSelectors", "selectorsMultiplied", "maybeSelector", "hadParentSelector", "nestedSelector", "replaced", "nestedPaths", "replacedNewSelectors", "concatenated", "AtRule", "isRooted", "outputRuleset", "mediaPathBackup", "mediaBlocksBackup", "mediaPath", "ruleCnt", "DetachedRuleset", "callEval", "Unit", "numerator", "denominator", "backupUnit", "sort", "strictUnits", "returnStr", "is", "unitString", "toUpperCase", "isLength", "RegExp", "isSingular", "callback", "usedUnits", "group", "mapUnit", "groupName", "atomicUnit", "cancel", "counter", "count", "Dimension", "unit", "parseFloat", "isNaN", "toColor", "strValue", "String", "convertTo", "unify", "numericCompare", "conversions", "targetUnit", "applyUnit", "derivedConversions", "Operation", "operands", "isSpaced", "Expression", "noSpacing", "returnValue", "parens", "doubleParen", "parensInOp", "throwAwayComments", "functionCaller", "evalArgs", "commentFilter", "item", "subNodes", "to", "from", "pack", "ar", "Call", "calc", "currentMathContext", "funcCaller", "

FunctionCaller", "isValid", "columnNumber", "Variable", "evaluating", "frame", "fun", "Property", "mergeRules", "less", "visitors", "ToCSSVisitor", "\_mergeRules", "vArr", "Attribute", "cif", "Quoted", "content", "escaped", "quote", "variableRegexp", "propRegex", "containsVariables", "that", "iterativeReplace", "regex", "replacementFnc", "evaluatedValue", "URL", "val", "isEvald", "urlArgs", "Media", "features", "evalTop", "evalNested", "multiMedia", "permute", "fragment", "rest", "Import", "css", "pathValue", "getPath", "isPlugin", "reference", "isVariableImport", "evalForImport", "evalPath", "doEval", "blocksVisibility", "addVisibilityBlock", "registry", "skip", "importedFilename", "newImport", "JsEvalNode", "evaluateJavaScript", "expression", "evalContext", "javascriptEnabled", "jsify", "toJS", "JavaScript", "string", "Assignment", "Condition", "negate", "lvalue", "rvalue", "UnicodeDescriptor", "Negative", "Extend", "option", "object\_id", "next\_id", "parent\_ids", "allowBefore", "allowAfter", "findSelfSelectors", "selectorElements", "selfElements", "selfSelectors", "VariableCall", "detachedRuleset", "NamespaceValue", "ruleCall", "lookups", "substring", "Definition", "params", "variadic", "arity", "optionalParameters", "required", "p", "evalParams", "mixinEnv", "evaldArguments", "varargs", "arg", "isNamedFound", "argIndex", "argsLength", "evalCall", "\_arguments", "mixinFrames", "allArgsCnt", "requiredArgsCnt", "MixinCall", "mixins", "mixin", "mixinPath", "argValue", "f", "isRecursive", "isOneFound", "candidate", "defaultResult", "noArgumentsFilter", "candidates", "conditionResult", "calcDefGroup", "namespace", "expand", "MixinDefinition", "format", "newRules", "\_setVisibilityToReplacement", "replacement", "AbstractFileManager", "lastIndexOf", "ext", "tryAppendExtension", "basePath", "laterPath", "url", "baseUrl", "urlDirectories", "baseUrlDirectories", "urlParts", "extractUrlParts", "baseUrlParts", "diff", "hostPart", "directories", "urlPartsRegex", 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"importCount", "onceFileDetectionMap", "recursionDetector", "\_sequencer", "run", "isFinished", "visitImport", "importNode", "inlineCSS", "importParent", "addVariableImport", "processImportNode", "evalImportNode", "multiple", "importMultiple", "tryAppendLessExtension", "onImported", "sequencedOnImported", "addImport", "importedAtRoot", "fullPath", "importVisitor", "isOptional", "optional", "duplicateImport", "oldContext", "visitDeclaration", "declNode", "visitDeclarationOut", "visitAtRule", "atRuleNode", "visitAtRuleOut", "visitMixinDefinition", "mixinDefinitionNode", "visitMixinDefinitionOut", "visitRuleset", "rulesetNode", "visitRulesetOut", "visitMedia", "mediaNode", "visitMediaOut", "visible", "SetTreeVisibilityVisitor", "ensureVisibility", "ensureInvisibility", "allExtendsStack", "ExtendFinderVisitor", "allExtends", "allSelectorsExtendList", "extendOnEveryPath", "selectorPath", "selExtendList", "allSelectorsExtend", "foundExtends", "firstExtendOnThisSelectorPath", "ProcessExtendsVisitor", "extendFinder", "extendIndices", "doExtendChaining", "newRoot", "checkExtendsForNonMatched", "indices", "hasFoundMatches", "extendsList", "extendsListTarget", "iterationCount", "extendIndex", "targetExtendIndex", "matches", "targetExtend", "newExtend", "extendsToAdd", "extendVisitor", "findMatch", "selfSelector", "extendSelector", "extendChainCount", "selectorOne", "selectorTwo", "ruleNode", "selectorNode", "pathIndex", "selectorsToAdd", "extendedSelectors", "haystackSelectorPath", "haystackSelectorIndex", "hackstackSelector", "hackstackElementIndex", "haystackElement", "targetCombinator", "potentialMatch", "needleElements", "potentialMatches", "matched", "initialCombinator", "isElementValuesEqual", "finished", "endPathIndex", "endPathElementIndex", "elementValue1", "elementValue2", "replacementSelector", "matchIndex", "firstElement", "newElements", "currentSelectorPathIndex", "currentSelectorPathElementIndex", "currentValue", "derived", "newAllExtends", "lastIndex", "JoinSelectorVisitor", "\_context", "CSSVisitorUtils", "bodyRules", "owner", "thing", "originalRules", "containsSilentNonBlockedChild", "compiledRulesBody", "keepOnlyVisibleChilds", "removeVisibilityBlock", "hasVisibleSelector", "utils", "mixinNode", "visitExtend", "extendNode", "visitComment", "commentNode", "resolveVisibility", "visitAtRuleWithBody", "visitAtRuleWithoutBody", "visitAnonymous", "anonymousNode", "nodeRules", "hasFakeRuleset", "getBodyRules", "charset", "comment", "checkValidNodes", "isRoot", "\_compileRulesetPaths", "nodeRuleCnt", "\_removeDuplicateRules", "isVisibleRuleset", "ruleList", "ruleCache", "ruleCSS", "groups", "groupsArr", "result\_1", "space\_1", "comma\_1", "MarkVisibleSelect

orsVisitor", "ExtendVisitor", "furthest", "furthestPossibleErrorMessage", "chunks", "current", "currentPos", "saveStack", "parserInput", "skipWhitespace", "nextChar", "oldi", "oldj", "curr", "endIndex", "mem", "inp", "charCodeAt", "autoCommentAbsorb", "nextNewLine", "text", "commentStore", "nextStarSlash", "save", "restore", "possibleErrorMessage", "state", "forget", "isWhitespace", "offset", "pos", "code", "\$re", "tok", "exec", "\$char", "\$str", "tokLength", "\$quoted", "startChar", "currentPosition", "\$parseUntil", "testChar", "returnVal", "inComment", "blockDepth", "blockStack", "parseGroups", "startPos", "lastPos", "loop", "char", "expected", "peek", "peekChar", "currentChar", "prevChar", "getInput", "peekNotNumeric", "start", "chunkInput", "failFunction", "fail", "lastOpening", "lastOpeningParen", "lastMultiComment", "lastMultiCommentEndBrace", "chunkerCurrentIndex", "currentChunkStartIndex", "cc", "cc2", "level", "parenLevel", "emitFrom", "emitChunk", "force", "fromCharCode", "chunker", "end", "furthestReachedEnd", "furthestChar", "Parser", "parsers", "getParserInput", "expect", "expectChar", "parseList", "currentIndex", "returnNodes", "parser", "additionalData", "globalVars", "modifyVars", "ignored", "preText", "disablePluginRule", "serializeVars", "preProcessors", "getPreProcessors", "process", "banner", "contentsIgnoredChars", "primary", "endInfo", "processImports", "extendRule", "definition", "declaration", "variableCall", "entities", "atrule", "foundSemiColon", "mixinLookup", "quoted", "forceEscaped", "isEscaped", "customFuncCall", "stop", "ieAlpha", "boolean", "if", "prevArgs", "isSemiColonSeparated", "argsComma", "argsSemiColon", "assignment", "literal", "dimension", "unicodeDescriptor", "entity", "ch", "variableCurly", "curly", "propertyCurly", "colorKeyword", "ud", "javascript", "js", "escape", "parsedName", "inValue", "ruleLookups", "isRule", "getLookup", "hasParens", "elem", "elemIndex", "re", "isCall", "expressionContainsNamed", "nameLoop", "expressions", "hasSep", "cond", "argInfo", "conditions", "block", "lookupValue", "attribute", "slashedCombinator", "isLess", "when", "blockRuleset", "hasDR", "ruleProperty", "permissiveValue", "anonymousValue", "untilTokens", "done", "testCurrentChar", "import", "dir", "importOptions", "mediaFeatures", "o", "optionName", "importOption", "mediaFeature", "pluginArgs", "nonVendorSpecificName", "hasIdentifier", "hasExpression", "hasUnknown", "hasBlock", "sub", "addition", "multiplication", "operation", "operand", "needsParens", "logical", "next", "conditionAnd", "negatedCondition", "parenthesisCondition", "atomicCondition", "body", "me", "tryConditionFollowedByParenthesis", "delim", "simpleProperty", "If", "trueValue", "falseValue", "isdefined", "colorFunctions", "hsla", "origColor", "hsl", "number", "rgba", "size", "m1\_1", "m2\_1", "hue", "hsv", "hsva", "vs", "floor", "perm", "saturation", "lightness", "hsvhue", "hsvsaturation", "hsvvalue", "luminance", "saturate", "amount", "method", 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\* /opt/cola/permits/1550489314\_1675273249.1374285/0/less-4-1-3-2-tgz/package/dist/less.min.js.map

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\* Less - Leaner CSS v4.1.3

\* <http://lesscss.org>

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\* /opt/cola/permits/1550489314\_1675273249.1374285/0/less-4-1-3-2-tgz/package/dist/less.min.js

## 1.74 bridgeutils 1.7.1

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## 1.76 glibc 2.32

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```

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```
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# * SHA-512
# * Implementation derived from LibTomCrypt (Tom St Denis)
# *
# * LibTomCrypt is a library that provides various cryptographic
# * algorithms in a highly modular and flexible manner.
# *
# * The library is free for all purposes without any express
# * guarantee it works.
# *
# * Tom St Denis, tomstdenis@gmail.com, http://libtomcrypt.org
# */
```

## 1.78 ncurses 6.2

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## 1.90 pciutils 3.9.0

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```

```
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## 1.94 pam 1.3.1-14.el8

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```

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