# ISM (Integrated Service Module) Line Card Software Installation Overview

This appendix describes the required steps to install Cisco IOS XR software in support of the ISM (Integrated Service Module) line card on the Cisco ASR 9000 Series Aggregation Services Router. It includes the following sections:

- Upgrading Field-Programmable Devices
- Entering System Recovery Mode
- Configuring the ISM Service-Management Interface
- Copying and Extracting the Image Files
- Reloading the ISM Line Card (CDS-TV Example Shown)
- Installing the ISO Image File
- Configuring the Service Engine Interfaces to the ISM (CDS Only)
- Running the cdsconfig Script
- Single Hardware PID (Role Based Installation)

## Upgrading Field-Programmable Devices

Follow the set of steps below to upgrade field-programmable devices on the ISM (Integrated Service Module) line card.

### Step 1

Check if the FPD upgrade is required by executing the `show hw-module fpd location` command:

```
RP/0/RSP1/CPU0:VKG-2#show hw-module fpd location 0/4/CPU0
```

<table>
<thead>
<tr>
<th>Location</th>
<th>Card Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>0/4/CPU0</td>
<td>A9K-ISM-100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HW</th>
<th>Version</th>
<th>Description</th>
<th>Type</th>
<th>Subtype</th>
<th>Inst</th>
<th>Current SW</th>
<th>Upg/ Dng?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.32</td>
<td>Amistad LC6</td>
<td>lc</td>
<td>fpga1</td>
<td>0</td>
<td>0.25</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>Can Bus Ctrl (CBC) LC6</td>
<td>lc</td>
<td>cbc</td>
<td>0</td>
<td>18.05</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>0.32</td>
<td>CPUCtrl LC6</td>
<td>lc</td>
<td>cpld1</td>
<td>0</td>
<td>0.01</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>0.32</td>
<td>ROMMONB LC6</td>
<td>lc</td>
<td>rommon</td>
<td>0</td>
<td>1.02</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>0.32</td>
<td>ISM BIOS</td>
<td>lc</td>
<td>fpga7</td>
<td>0</td>
<td>0.17</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>0.32</td>
<td>ISM WESSON CPLD</td>
<td>lc</td>
<td>cpld3</td>
<td>0</td>
<td>0.16</td>
<td>No</td>
</tr>
</tbody>
</table>
0.1 Maintenance LC6 lc fpga2 0 0.04 Yes

---

NOTES:

1. One or more FPD needs an upgrade or a downgrade. This can be accomplished using the "admin upgrade hw-module fpd" CLI.

---

**Note**

An auto upgrade is performed on ISM BIOS and ISM Wesson CPLD field-programmable devices during the ISM line card boot up. This auto upgrade process causes a reload of the ISM line card. A manual upgrade may be needed on the other field-programmable devices.

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**Step 2**

In the example shown in Step 1, FPGA2 needs an upgrade. Enter the following command to upgrade FPGA2:

```plaintext
RP/0/RSP1/CPU0:VKG-2(admin)#upgrade hw-module fpd fpga2 force location 0/4/CPU0
```

***** UPGRADE WARNING MESSAGE: *****
* This upgrade operation has a maximum timeout of 90 minutes. *
* If you are executing the cmd for one specific location and *
* card in that location reloads or goes down for some reason *
* you can press CTRL-C to get back the RP's prompt. *
* If you are executing the cmd for _all_ locations and a node *
* reloads or is down please allow other nodes to finish the *
* upgrade process before pressing CTRL-C. *

% RELOAD REMINDER:
- The upgrade operation of the target module will not interrupt its normal operation. However, for the changes to take effect, the target module will need to be manually reloaded after the upgrade operation. This can be accomplished with the use of "hw-module <target> reload" command.
- If automatic reload operation is desired after the upgrade, please use the "reload" option at the end of the upgrade command.
- The output of "show hw-module fpd location" command will not display correct version information after the upgrade if the target module is not reloaded.

**NOTE:** Chassis CLI will not be accessible while upgrade is in progress. Continue? [confirm] Y

FPD upgrade in progress on some hardware, reload/configuration change on those is not recommended as it might cause HW programming failure and result in RMA of the hardware.

Starting the upgrade/download of following FPD:

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
<th>Subtype</th>
<th>Upg/Dng</th>
<th>Version</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>0/4/CPU0</td>
<td>lc</td>
<td>fpga2</td>
<td>upg</td>
<td>0.04</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Successfully upgraded fpga2 for A9K-ISM-100 on location 0/4/CPU0 from 0.04 to 0.06

FPD upgrade has ended.
Entering System Recovery Mode

**Step 1** Enter the following command to place the system into recovery mode:

```
RP/0/RSP1/CPU0:VKG-2#admin download recovery-image location 0/4/CPU0
```

ERROR: Failed to get SE node state (No error)

WARNING: 0/4/CPU1 reloading while in the current state is not recommended and may result in having to reinstall the service application. Use 'show platform' to ensure that the module is not in 'CHECKING DISK', 'SEOS-BOOTING', 'UPDATING FPD', 'SEOS-INIT' state before executing this command.

Do you want to proceed anyway?[confirm] Y

<<< This will cause CPU1 alone to reload, not the entire LC.

```
RP/0/RSP1/CPU0:VKG-2#LC/0/4/CPU0:May 3 08:39:24.739 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/4/0/0, changed state to Down
LC/0/4/CPU0:May 3 08:39:24.740 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Mgmt0/4/0/0, changed state to Down
LC/0/4/CPU0:May 3 08:39:24.740 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/4/0/1, changed state to Down
LC/0/4/CPU0:May 3 08:39:24.741 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Mgmt0/4/0/2, changed state to Down
LC/0/4/CPU0:May 3 08:39:24.742 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/4/0/2, changed state to Down
LC/0/4/CPU0:May 3 08:39:24.743 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Mgmt0/4/0/3, changed state to Down
LC/0/4/CPU0:May 3 08:39:24.743 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/4/0/3, changed state to Down
```

ISM LOG:

```
<7>(ixgbe_request_msix_irqs) Requesting MSI-X lsc irq 116
ixgbe: eth7: ixgbe_watchdog_task: NIC Link is Up 10 Gbps, Flow Control: None
ixgbe: eth3: ixgbe_watchdog_task: NIC Link is Up 10 Gbps, Flow Control: None
ixgbe: eth1: ixgbe_watchdog_task: NIC Link is Up 10 Gbps, Flow Control: None
ixgbe: eth5: ixgbe_watchdog_task: NIC Link is Up 10 Gbps, Flow Control: None
```

**Step 2** From the Cisco ASR 9000 Series Aggregation Services Router console or vt session execute the following command:

```
RP/0/RSP1/CPU0:VKG-2#run attachCon 0/ISM slot number on ASR9000/CPU1 115200
```

For example, to access the Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) line card in slot 4 use the following command:
Configuring the ISM Service-Management Interface

Step 1  Configure the ISM service-management interface by executing the `interface service-mgmt` command:

```
RP/0/RSP1/CPU0:VKG-2# interface service-mgmt 0/4/0/0
RP/0/RSP1/CPU0:VKG-2(config)# interface service-mgmt 0/4/0/0
RP/0/RSP1/CPU0:VKG-2(config)# interface service-mgmt 0/4/0/0
RP/0/RSP1/CPU0:VKG-2(config)# interface service-mgmt 0/4/0/0
RP/0/RSP1/CPU0:VKG-2(config)# interface service-mgmt 0/4/0/0
```

Step 2  The next step is to attach to the ISM console or SSH directly to the ISM service-management interface. Once again, from the Cisco ASR 9000 Series Aggregation Services Router console or vty session execute the following command:

```
RP/0/RSP1/CPU0:VKG-2# run attachCon 0/4/CPU1 115200
```

For example, to access the Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) line card in slot 4 use the following command:

```
Sat June 18 17:45:03.373 UTC
attachCon: Starting console session to node 0/6/CPU1
attachCon: To quit console session type 'detach'
Current Baud 115200
Setting Baud to 115200
Note that the prompt changes to rescue:
[root@sim100-rescue-linux /]#
```

Step 3  Verify that the ISM is in recovery mode by entering the `show platform` command:
RP/0/RSP1/CPU0:VKG-2# run attachCon 0/4/CPU1 115200

Sat June 18 17:45:03.373 UTC

    attachCon: Starting console session to node 0/6/CPU1
    attachCon: To quit console session type ‘detach’
    Current Baud 115200
    Setting Baud to 115200

The ISM (Integrated Service Module) line card may not be able to reach external routes unless a static route is added in the ISM (Integrated Service Module) line card.

**Step 3** Add a static route by executing the `ip route add` command as shown here:

```
[root@ISM-2 ~]# ip route add 223.255.254.245/32 via 10.20.0.1
```

Note that the via must be your gateway.

---

**Copying and Extracting the Image Files**

The next step is to copy files to the Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) line card. SCP or FTP are the only supported options. The Cisco ASR 9000 Series Aggregation Services Router cannot be used as a TFTP server. For systems running Cisco IOS XR Release 4.2.1 or later, use the `download-image` command as described in Single Hardware PID (Role Based Installation), page B-24.

**Step 1** To copy the files using SCP, execute the following command:

```
[root@ISM-2 ~]# scp user@223.255.254.245:/<folder>/<image install kit> /root/
```

**Step 2** Now that the image files have been copied down, the next step to perform is the actual install kit installation.

**Step 3** Execute the `cd` command to get to the root directory:

```
[root@ISM-2 ~]# cd /root/
```

**Step 4** Execute the `chmod` command to ensure you have execute privileges for the `avsm-5.3-x86_64-install-kit.sh` command file:

```
[root@ISM-2 ~]# chmod 755 avsm-5.3-x86_64-install-kit.sh
```

**Step 5** Now execute the `avsm-5.3-x86_64-install-kit.sh` command file:

```
[root@ISM-2 ~]# ./avsm-5.3-x86_64-install-kit.sh
```

**Step 6** Execute the `cd` command to get to the `avsm_install` directory:

```
[root@ISM-2 ~]# cd avsm_install
```

**Step 7** Now execute the `avsm_install.sh` command file to extract the `avsm-5.3-x86_64-full-image.iso` files:

```
[root@ISM-2 ~]# ./avsm_install.sh
```

Extracting files into /root (extracting the ISO file may take a few minutes):

```
avsm_install/
avsm_install/./avsm_install.sh
avsm_install/./backup_cfg.sh
```
Reloading the ISM Line Card (CDS-TV Example Shown)

To complete the installation, you have to reload the Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) line card. This needs to be performed from the Cisco ASR 9000 Series Aggregation Services Router RSP console. To reload the ISM (Integrated Service Module) line card, either remove and then physically reinsert it or, if you haven’t removed the ISM (Integrated Service Module) line card, execute the `hw-module location reload` command in admin mode to perform a soft reinsert.

**Step 1**  
Reload the Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) line card by executing the `hw-module location reload` command in admin mode.

The syntax is `hw-module location 0/x/CPU0 reload` or `hw-module location 0/x/CPU1 reload`, where `x` is the slot number.

Here is the example output from executing the `hw-module location 0/1/CPU0 reload` command:

```
RP/0/RSP0/CPU0:VKG-2# hw-module location 0/1/CPU0 reload
WARNING: This will take the requested node out of service.
Do you wish to continue?[confirm(y/n)] y
```

**Step 2**  
After configuring an interface to the Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) line card, for a CDS-TV reload, use the `scp` command to copy the CDS-TV-2.4.1.iso and cdsinstall software files. For example, if the remote server that you downloaded the software files to has an IP address of 172.22.97.109 and the files are stored in the CDSdownloads directory, use the following commands to copy down the files:

```
# scp -p 172.22.97.109:/CDSdownloads/CDS-TV-2.4.1.iso /
# scp -p 172.22.97.109:/CDSdownloads/cdsinstall /root
```

**Step 3**  
Run the cdsinstall script to upgrade the ISO image to Release 2.4.1.

```
# /root
# ./cdsinstall /CDS-TV-2.4.1.iso
```

**Step 4**  
To complete upgrading the ISO image to Release 2.4.1, you have to reload the Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) line card once again. This needs to be performed from the Cisco ASR 9000 Series Aggregation Services Router RSP console. To reload the ISM (Integrated Service Module) line card, either remove and then physically reinsert it or, if you haven’t removed the ISM (Integrated Service Module) line card, execute the `hw-module location reload` command in admin mode to perform a soft reinsert.

The syntax is `hw-module location 0/x/CPU0 reload` or `hw-module location 0/x/CPU1 reload`, where `x` is the slot number.

Here is the example output from executing the `hw-module location 0/1/CPU0 reload` command:

```
RP/0/RSP0/CPU0:VKG-2# hw-module location 0/1/CPU0 reload
```
WARNING: This will take the requested node out of service.
Do you wish to continue? [confirm(y/n)] y

Installing the ISO Image File

Step 1  Run the cdsinstall script to upgrade the ISO image to Release 2.4.1.

    # /root
    # ./cdsinstall /CDS-TV-2.4.1.iso

Select Deployment Type (ctrl-c to quit):
1) ISA
2) RTSP/FSI
2
RTSP Selected
Mounting /CDS-TV.iso at /mnt/cdrom
Calling inst.sh for common files
Killing running processes: statsd

Starting cdsupgrade.sh
  WARNING: No existing version found on this server. Cannot backup existing files
Un-taring common-base.tgz
Fixing modprobe.conf
Loading File List
...done

Processing File List
...done

Moving modprobe.conf into place
...done

Installing kernel rpm
Installing cserver production rpm
Disabled various startup scripts in /etc/init.d
Installing busybox
warning: /home/packages/busybox-1.2.0-4.el5.i386.rpm: Header V3 DSA signature: NOKEY, key ID 37017186
Installing kdump
warning: /home/packages/kgexec-tools-1.101-194.4.el5.x86_64.rpm: Header V3 DSA signature: NOKEY, key ID 37017186
Configuring kdump...
Starting kdump service...
No kdump initial ramdisk found.[WARNING]
Rebuilding /boot/initrd-2.6.18-53.el5kdump.img
kernel-debuginfo-2.6.18-53.el5 is not installed. You need this to use makedumpfile!
please install it and restart the kdump service
Failed to run mkdump
Installing logrotate
warning: /home/packages/logrotate-3.7.4-8.1386.rpm: Header V3 DSA signature: NOKEY, key ID 37017186
Installing CmdTool2

Set Write Policy to WriteBack on Adapter 0, VD 0 (target id: 0) success
Installing the ISO Image File

Set Write Cache OK if bad BBU on Adapter 0, VD 0 (target id: 0) success
Set Disk Cache Policy to Enabled on Adapter 0, VD 0 (target id: 0) success

Starting fixperms.sh
  Loading File List
  Processing File List
Ending fixperms.sh
Calling inst.sh for rtsp
Killing running processes: statsd
Un-taring rtsp-base.tgz
Calling forprod.sh
Removing ISA-specific files
Installing RTSP-specific files (existing files backed up to .file)
mv: `/home/isa/bss/database/avsdb' and `/arroyo/db/avsdb' are the same file
mv: `/home/isa/bss/database/AVSDBUtil' and `/arroyo/db/AVSDBUtil' are the same file
mv: `/home/isa/bss/database/DATADIR' and `/arroyo/db/DATADIR' are the same file
mv: `/home/isa/bss/database/lost+found' and `/arroyo/db/lost+found' are the same file
RTSP installation complete
Starting fixperms.sh
  Loading File List
  Processing File List
Ending fixperms.sh
Unmounting /mnt/cdrom
cdsinstall completed. Please reboot the device.

Note
The warning, “Failed to run,” and the move messages are known, benign errors, and can be ignored.

---

Step 2
Reboot the Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) Line Card from your terminal connection to the Cisco ASR 9000 Series Aggregation Services Router Route Processor card.

# hw-module location 0/ISM slot number on ASR9K/CPU0 reload

Here is the example output from executing the hw-module location 0/1/CPU0 reload command:

RP/0/RSP0/CPU0:VKG-2# hw-module location 0/1/CPU0 reload
WARNING: This will take the requested node out of service.
Do you wish to continue?[confirm(y/n)] y

RP/0/RSP0/CPU0:Apr 13 13:21:01.329 EST: shelfmgr[357]: %PLATFORM-SHELFMGR-6-USER_RESET : Node 0/1/CPU0 is reset due to user reload request
RP/0/RSP0/CPU0:Apr 13 13:21:01.335 EST: shelfmgr[357]: %PLATFORM-SHELFMGR-6-NODB_STATE_CHANGE : 0/1/CPU0 A9K-ISM-100 state:IOS XR FAILURE
LC/0/1/CPU0:Apr 13 13:21:01.338 EST: vkg_sis[293]: Received SYSDB_EVENT_SET Notification....
LC/0/1/CPU0:Apr 13 13:21:01.338 EST: avsm_se_sm[127]: %PLATFORM-SIM_SE-5-STATE_CHANGE : Service Engine is in shutting down state.
LC/0/1/CPU0:Apr 13 13:21:01.340 EST: ipv4_mfwd_partner[224]: Deactivating MCAST APIV ...
LC/0/1/CPU0:Apr 13 13:21:01.340 EST: 12fib[231]: Deactivating APIV module MOD_ID_AVSM_L2FIB...
LC/0/1/CPU0:Apr 13 13:21:01.340 EST: vkg_sis[293]: Starting of SI APIV Deletion ...
RP/0/RSP0/CPU0:Apr 13 13:21:01.417 EST: invmgr[235]: %PLATFORM-INV-6-OIROUT : OIR: Node 0/1/SAM0 removed
RP/0/RSP0/CPU0:Apr 13 13:21:01.419 EST: eem_ed_oir[185]: Message received content : Event 1 NodeId: 0x81c
RP/0/RSP0/CPU0:Apr 13 13:21:01.434 EST: invmgr[235]: %PLATFORM-INV-6-OIROUT : OIR: Node 0/1/SAM1 removed
Installing the ISO Image File

RP/0/RSP0/CPU0:Apr 13 13:21:01.435 EST: eem_ed_oir[185]: Message received content : Event 1
NodeId: 0x81d

LC/0/1/CPU0:Apr 13 13:21:03.003 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/0, changed state to Down

LC/0/1/CPU0:Apr 13 13:21:03.003 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN : Line protocol on Interface Service-Engine0/1/0/0, changed state to Down

LC/0/1/CPU0:Apr 13 13:21:03.004 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Mgmt0/1/0/0, changed state to Down

LC/0/1/CPU0:Apr 13 13:21:03.004 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN : Line protocol on Interface Service-Mgmt0/1/0/0, changed state to Down

LC/0/1/CPU0:Apr 13 13:21:03.005 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/1, changed state to Down

LC/0/1/CPU0:Apr 13 13:21:03.005 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN : Line protocol on Interface Service-Engine0/1/0/1, changed state to Down

LC/0/1/CPU0:Apr 13 13:21:03.005 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Mgmt0/1/0/1, changed state to Down

LC/0/1/CPU0:Apr 13 13:21:03.005 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN : Line protocol on Interface Service-Mgmt0/1/0/1, changed state to Down

LC/0/1/CPU0:Apr 13 13:21:03.006 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/2, changed state to Down

LC/0/1/CPU0:Apr 13 13:21:03.006 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN : Line protocol on Interface Service-Engine0/1/0/2, changed state to Down

LC/0/1/CPU0:Apr 13 13:21:03.007 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Mgmt0/1/0/2, changed state to Down

LC/0/1/CPU0:Apr 13 13:21:03.007 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN : Line protocol on Interface Service-Mgmt0/1/0/2, changed state to Down

RP/0/RSP0/CPU0:Apr 13 13:21:08.968 EST: invmgr[235]: %PLATFORM-INV-6-NODE_STATE_CHANGE : Node: 0/1/SAM1, state: BRINGDOWN

RP/0/RSP0/CPU0:Apr 13 13:21:08.979 EST: invmgr[235]: %PLATFORM-INV-6-NODE_STATE_CHANGE : Node: 0/1/SAM0, state: BRINGDOWN

RP/0/RSP0/CPU0:Apr 13 13:22:01.474 EST: shelfmgr[357]: %PLATFORM-SHELFMGR-6-NODE_STATE_CHANGE : 0/1/CPU0 A9K-ISM-100 state: BRINGDOWN

RP/0/RSP0/CPU0:Apr 13 13:22:01.541 EST: invmgr[235]: %PLATFORM-INV-6-OIROUT : OIR: Node 0/1/SAM0 removed

RP/0/RSP0/CPU0:Apr 13 13:22:01.572 EST: invmgr[235]: %PLATFORM-INV-6-OIROUT : OIR: Node 0/1/SAM1 removed

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: eem_ed_oir[185]: Message received content : Event 1
NodeId: 0x81c

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: invmgr[235]: %PLATFORM-INV-6-NODE_STATE_CHANGE : Node: 0/1/CPU0, state: BRINGDOWN

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: invmgr[235]: %PLATFORM-INV-6-OIROUT : OIR: Node 0/1/CPU0: Removed

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: invmgr[235]: %PLATFORM-INV-6-OIROUT : OIR: Node 0/1/CPU0: Removed

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: invmgr[235]: %PLATFORM-INV-6-OIROUT : OIR: Node 0/1/CPU0: Removed

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: invmgr[235]: %PLATFORM-INV-6-OIROUT : OIR: Node 0/1/CPU0: Removed

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: invmgr[235]: %PLATFORM-INV-6-OIROUT : OIR: Node 0/1/CPU0: Removed

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: invmgr[235]: %PLATFORM-INV-6-OIROUT : OIR: Node 0/1/CPU0: Removed

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: invmgr[235]: %PLATFORM-INV-6-OIROUT : OIR: Node 0/1/CPU0: Removed

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: invmgr[235]: %PLATFORM-INV-6-OIROUT : OIR: Node 0/1/CPU0: Removed

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: insthelper[61]: %INSTALL-INSTHELPER-7-PKG_DOWNLOAD : Boot Request from 0/1/CPU0, RomMon Version: 1.2

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: insthelper[61]: %INSTALL-INSTHELPER-7-PKG_DOWNLOAD : Boot Request from 0/1/CPU0, RomMon Version: 1.2

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: insthelper[61]: %INSTALL-INSTHELPER-7-PKG_DOWNLOAD : Boot Request from 0/1/CPU0, RomMon Version: 1.2

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: insthelper[61]: %INSTALL-INSTHELPER-7-PKG_DOWNLOAD : Boot Request from 0/1/CPU0, RomMon Version: 1.2

RP/0/RSP0/CPU0:Apr 13 13:22:01.546 EST: insthelper[61]: %INSTALL-INSTHELPER-7-PKG_DOWNLOAD : Boot Request from 0/1/CPU0, RomMon Version: 1.2
Installing the ISO Image File

LC/0/1/CPU0:Apr 13 13:23:53.490 EST: init[65540]: %OS-INIT-7-INSTALL_READY : total time 28.024 seconds
LC/0/1/CPU0:Apr 13 13:23:54.820 EST: syslog_dev[87]: dumper_config[153]: The node id is 2065
LC/0/1/CPU0:Apr 13 13:23:58.631 EST: linux_maint_fpd_agent[236]: linux_maint_fpd_agent: Registering the handlers
LC/0/1/CPU0:Apr 13 13:23:58.645 EST: linux_maint_fpd_agent[236]: update_linux_maint_sw_version Updated the sw_ver 6
LC/0/1/CPU0:Apr 13 13:23:58.878 EST: vkg_sis[293]: Initializing APIV modules ... Notification.....
LC/0/1/CPU0:Apr 13 13:24:03.156 EST: fca_server[165]: bridge_asic_get_ver: msg send problem: Invalid argument
LC/0/1/CPU0:Apr 13 13:24:03.156 EST: fca_server[165]: bridge_asic_get_ver: msg send problem: Invalid argument
LC/0/1/CPU0:Apr 13 13:24:03.156 EST: fca_server[165]: Received SYSDB_EVENT_SET Notification.....
LC/0/1/CPU0:Apr 13 13:24:16.422 EST: canb_upg_agt[134]: %PLATFORM-UPGRADE_FPD-4-DOWN_REV : CBC instance 0 is down-rev (V18.04), upgrade to (V18.05). Use the "upgrade hw-module fpd" CLI in admin mode.
Installing the ISO Image File

LC/0/1/CPU0:Apr 13 13:24:22.754 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Mgmt0/1/0/2, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:22.755 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Mgmt0/1/0/1, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:22.755 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Mgmt0/1/0/0, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:22.758 EST: ifmgr[189]: %PKT_INFRA-LINPROT-5-UPDOWN : Line protocol on Interface Service-Mgmt0/1/0/2, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:22.764 EST: ifmgr[189]: %PKT_INFRA-LINPROT-5-UPDOWN : Line protocol on Interface Service-Mgmt0/1/0/1, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:22.767 EST: ifmgr[189]: %PKT_INFRA-LINPROT-5-UPDOWN : Line protocol on Interface Service-Mgmt0/1/0/0, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:25.046 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/3, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:25.046 EST: ifmgr[189]: %PKT_INFRA-LINPROT-5-UPDOWN : Line protocol on Interface Service-Engine0/1/0/3, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:25.046 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/2, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:25.046 EST: ifmgr[189]: %PKT_INFRA-LINPROT-5-UPDOWN : Line protocol on Interface Service-Engine0/1/0/2, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:25.046 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/1, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:25.046 EST: ifmgr[189]: %PKT_INFRA-LINPROT-5-UPDOWN : Line protocol on Interface Service-Engine0/1/0/1, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:25.046 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/0, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:25.046 EST: ifmgr[189]: %PKT_INFRA-LINPROT-5-UPDOWN : Line protocol on Interface Service-Engine0/1/0/0, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:25.052 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/3, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:25.053 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/2, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:25.053 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/1, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:25.053 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/0, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:25.054 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/3, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:25.054 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/2, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:25.054 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/1, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:25.054 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/0, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:25.055 EST: ifmgr[189]: %PKT_INFRA-LINPROT-5-UPDOWN : Line protocol on Interface Service-Engine0/1/0/3, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:25.058 EST: ifmgr[189]: %PKT_INFRA-LINPROT-5-UPDOWN : Line protocol on Interface Service-Engine0/1/0/2, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:25.061 EST: ifmgr[189]: %PKT_INFRA-LINPROT-5-UPDOWN : Line protocol on Interface Service-Engine0/1/0/1, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:25.061 EST: ifmgr[189]: %PKT_INFRA-LINPROT-5-UPDOWN : Line protocol on Interface Service-Engine0/1/0/0, changed state to Up
LC/0/1/CPU0:Apr 13 13:24:26.107 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/3, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:26.107 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/2, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:26.108 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/1, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:26.108 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/0, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:26.110 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/3, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:26.110 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/2, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:26.110 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/1, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:26.110 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Engine0/1/0/0, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:26.112 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Mgmt0/1/0/2, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:26.115 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Mgmt0/1/0/1, changed state to Down
LC/0/1/CPU0:Apr 13 13:24:26.115 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN : Interface Service-Mgmt0/1/0/0, changed state to Down
Appendix B  ISM (Integrated Service Module) Line Card Software Installation Overview

Installing the ISO Image File

LC/0/1/CPU0: Apr 13 13:24:26.116 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN: Line protocol on Interface Service-Mgmt0/1/0/0, changed state to Down
LC/0/1/CPU0: Apr 13 13:24:26.117 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN: Interface Service-Mgmt0/1/0/1, changed state to Down
LC/0/1/CPU0: Apr 13 13:24:26.118 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN: Line protocol on Interface Service-Mgmt0/1/0/1, changed state to Down
LC/0/1/CPU0: Apr 13 13:24:26.119 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN: Interface Service-Mgmt0/1/0/2, changed state to Down
LC/0/1/CPU0: Apr 13 13:24:26.120 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN: Line protocol on Interface Service-Mgmt0/1/0/2, changed state to Down
LC/0/1/CPU0: Apr 13 13:24:50.648 EST: vkg_sis[293]: Received SYSDB_EVENT_SET Notification.....
LC/0/1/CPU0: Apr 13 13:24:50.648 EST: vkg_sis[293]: Received SYSDB_EVENT_SET Notification.....
LC/0/1/CPU0: Apr 13 13:25:04.333 EST: ipv4_mfwd_partner[224]: Registering for SysDB notifications...
LC/0/1/CPU0: Apr 13 13:25:07.458 EST: ipv4_mfwd_partner[224]: Initializing APIV modules...
LC/0/1/CPU0: Apr 13 13:25:07.458 EST: l2fib[231]: Starting of APIV version negotiation...
LC/0/1/CPU0: Apr 13 13:25:07.458 EST: fib_mgr[167]: Starting of APIV version negotiation...
LC/0/1/CPU0: Apr 13 13:25:07.458 EST: BM-ADJ[129]: Starting of APIV version negotiation (CREATE)...
LC/0/1/CPU0: Apr 13 13:25:08.094 EST: inv_agent[196]: %PLATFORM-INV_AGENT-7-INFO: Sending SIM x86 inventory info
LC/0/1/CPU0: Apr 13 13:25:09.634 EST: vkg_sis[293]: SIS APIV is up
LC/0/1/CPU0: Apr 13 13:25:10.489 EST: fib_mgr[167]: Starting of APIV version negotiation...
LC/0/1/CPU0: Apr 13 13:25:10.489 EST: l2fib[231]: IPCP is up fd:5009c58, stats_fd:0
LC/0/1/CPU0: Apr 13 13:25:11.624 EST: vkg_sis[293]: Received SYSDB_EVENT_SET Notification.....
LC/0/1/CPU0: Apr 13 13:25:11.624 EST: vkg_sis[293]: Received SYSDB_EVENT_SET Notification.....
LC/0/1/CPU0: Apr 13 13:25:16.737 EST: vkg_sis[293]: Received SysDB EVENT_SET Notification.....
LC/0/1/CPU0: Apr 13 13:25:16.737 EST: vkg_sis[293]: Received SE Operation Ready Notification.....
LC/0/1/CPU0: Apr 13 13:25:16.740 EST: avsm_se_sm[127]: %PLATFORM-SIM_SE-5-SW_INFO: Service Engine is in ready state.
LC/0/1/CPU0: Apr 13 13:25:16.742 EST: avsm_se_sm[127]: %PLATFORM-SIM_SE-5-SW_INFO: Service Engine heartbeat started on A9K-ISM-100
LC/0/1/CPU0: Apr 13 13:25:26.744 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN: Line protocol on Interface Service-Engine0/1/0/0, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.745 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN: Interface Service-Engine0/1/0/0, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.745 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN: Line protocol on Interface Service-Engine0/1/0/1, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.745 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN: Interface Service-Engine0/1/0/1, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.746 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN: Line protocol on Interface Service-Engine0/1/0/0, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.746 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN: Interface Service-Engine0/1/0/0, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.746 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN: Line protocol on Interface Service-Engine0/1/0/1, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.747 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN: Interface Service-Engine0/1/0/1, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.747 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN: Line protocol on Interface Service-Engine0/1/0/3, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.750 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN: Interface Service-Engine0/1/0/3, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.750 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN: Line protocol on Interface Service-Engine0/1/0/0, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.758 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN: Line protocol on Interface Service-Engine0/1/0/1, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.760 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN: Interface Service-Engine0/1/0/0, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.763 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN: Line protocol on Interface Service-Engine0/1/0/1, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.763 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN: Interface Service-Engine0/1/0/1, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.763 EST: ifmgr[189]: %PKT_INFRA-LINEPROTO-5-UPDOWN: Line protocol on Interface Service-Engine0/1/0/3, changed state to Up
LC/0/1/CPU0: Apr 13 13:25:26.763 EST: ifmgr[189]: %PKT_INFRA-LINK-3-UPDOWN: Interface Service-Engine0/1/0/3, changed state to Up
Configuring the Service Engine Interfaces to the ISM (CDS Only)

The Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) line card now has the Release 2.4.1 TV CDS software installed.

The next step is configuring the Service Engine interfaces to the ISM (Integrated Service Module) line card using the Cisco ASR 9000 Series Aggregation Services Router IOS XR Software Command Line Interface.

**Step 1**

Execute the `interface Service-Engine` command as shown below. This command enters interface configuration mode to allow you to configure interfaces which emulate 10-Gigabit Ethernet interfaces which can be used to carry video streaming/cache-fill traffic.

```
! interface Service-Engine0/4/0/0
  service-module ipv4 address 10.4.1.2 255.255.255.0
  ipv4 address 10.4.1.1 255.255.255.0
!
```

```
interface Service-Mgmt0/4/0/1
shutdown
!```
Running the *cdsconfig* Script

The next step is to initially configure the Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) line card, which requires that you run the *cdsconfig* script and answer the prompts appropriately for your deployment.

To initially configure the Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) line card, do the following:

**Step 1**  Log in to the Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) line card as *root*.

**Step 2**  Run the *cdsconfig* script. The script displays prompts with the default values in brackets. If a default value is correct, press *Enter* to accept the value; otherwise, enter the correct value and press *Enter*. Note that the following example is for adding a Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) line card into an existing deployment

```
[root@ism ~]# cdsconfig

ATTENTION!!!
If a new image is installed on this server, a reboot is required before running cdsconfig.
If a reboot is already performed, please continue.
Otherwise, please exit and execute cdsconfig after rebooting the server

Do you want to continue ? (yes/no) [y]: y
Enter management interface [eth0]:
Please ensure an IP address and netmask are configured for
management interface eth0:

Enter a hostname [ism]:
Backing up /etc/sysconfig/network
Writing new /etc/sysconfig/network
Backing up /etc/hosts
Writing new /etc/hosts
Skipping network restart for AVSM
Network configuration complete
Use detected platform: A9K-ISM-100 ? (yes/no) [y]: yes
```
Please select a device role:
   1. streamer
Choice: 1
Is this Server going to get added to a Stream Domain in a CDN Split Domain Management Environment? (yes/no) [y]: no
Please enter a Group ID (Array ID): 6147
Please enter a server ID [3]: 1232
Enter Stream Control interface (Hit 'Enter' to skip):
Writing new configuration to /home/isa/.arroyorc
No existing replication group information found
Do you want to configure replication group members now? (yes/no) [y]:
There are currently no replication group members.
Do you want to add another replication group member? (yes/no) [y]:
Select a role for the new replication group member. Select 'exit' to exit this menu:
   1. ssv
   2. vault
   3. streamer
   4. cache
   5. controller
   6. exit
Choice: 5
Enter an IP address for new controller: 10.10.19.2
Current replication group members:
   controller    10.10.19.2
Do you want to add another replication group member? (yes/no) [n]: yes
Select a role for the new replication group member. Select 'exit' to exit this menu:
   1. ssv
   2. vault
   3. streamer
   4. cache
   5. controller
   6. exit
Choice: 2
Enter an IP address for new vault: 10.10.30.2
Current replication group members:
   controller    10.10.19.2
   vault         10.10.30.2
Do you want to add another replication group member? (yes/no) [n]:
Configuring ISA ecosystem
Is this node getting added to an existing deployment? (yes/no) [y]:
Starting database sync...
./start_db: Command not found.
1 size: 4180
2 size: 3148
3 size: 2136
4 size: 11412
5 size: 4180
6 size: 3148
7 size: 17628
8 size: 5208
10 size: 60
11 size: 1108
12 size: 52
14 size: 60
Running the cdsconfig Script

15 size: 2492
16 size: 156
17 size: 3164
18 size: 144
19 size: 180
20 size: 160
21 size: 1164
22 size: 16
23 size: 4228
24 size: 164
25 size: 14800
27 size: 1108
28 size: 3508
29 size: 156
30 size: 1108
31 size: 276
32 size: 1916
33 size: 1496
34 size: 1880
35 size: 3672
36 size: 6676
37 size: 1548
38 size: 184
39 size: 1748
40 size: 1492
41 size: 212
42 size: 212
43 size: 244
44 size: 144
45 size: 280
46 size: 156
48 size: 1024
49 size: 224
50 size: 660
51 size: 340
52 size: 2132
53 size: 1816
54 size: 440
56 size: 1440
57 size: 4244
58 size: 7468
59 size: 336
60 size: 204
63 size: 5336
64 size: 204
65 size: 24
66 size: 17732
70 size: 164
71 size: 1236
72 size: 5336
74 size: 3348
75 size: 2140
76 size: 5260
77 size: 12436
78 size: 6240
79 size: 340
80 size: 11412
81 size: 228
82 size: 24
83 size: 2208
84 size: 2128
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88 size: 4180
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Appendix B  ISM (Integrated Service Module) Line Card Software Installation Overview

Running the cdsconfig Script

192 size: 6228
195 size: 120
200 size: 21772
204 size: 60
205 size: 16
206 size: 6292
207 size: 108
208 size: 1140
210 size: 2548
211 size: 2548
212 size: 240
213 size: 2732
214 size: 216
215 size: 104
220 size: 92
230 size: 1288
231 size: 1500
250 size: 80
266 size: 24656
267 size: 80
270 size: 660
271 size: 156
272 size: 144
273 size: 88
274 size: 28
275 size: 32
276 size: 32
trickle thread starting: tid: 4131216272
deadlock thread starting: tid: 4130163600
checkpoint thread starting: tid: 4129110928
trigger_worker thread starting: tid: 4128058256
10.10.19.2: Performing full resync for node addition with 10.10.19.2
10.10.19.2: Full Resync SUCCESS
10.10.30.2: Performing full resync for node addition with 10.10.30.2
10.10.30.2: db_resync_content_object: still processing remote getall, 1000 contents processed so far
10.10.30.2: db_resync_content_object: still processing remote getall, 2000 contents processed so far
10.10.30.2: db_resync_content_object: still processing remote getall, 3000 contents processed so far
10.10.30.2: db_resync_content_object: still processing remote getall, 4000 contents processed so far
10.10.30.2: db_resync_content_object: still processing remote getall, 5000 contents processed so far
10.10.30.2: db_resync_content_object: still processing remote getall, 6000 contents processed so far
10.10.30.2: db_resync_content_object: still processing remote getall, 7000 contents processed so far
10.10.30.2: db_resync_content_object: still processing remote getall, 8000 contents processed so far
10.10.30.2: db_resync_content_object: Finished with 8005 new records found and 0 records deleted, 8005 processed in getall
10.10.30.2: Full Resync SUCCESS
serverid: 1232 servertype: 2 ipaddr: 353698051
controller archiving thread starting: tid: 4042255248
rep_mgr thread starting: tid: 4041202576 rthreads: 2
pthread created: 4131216272
pthread created: 4130163600
pthread created: 4129110928
pthread created: 4128058256
pthread created: 4127001488
pthread created: 4125948816
pthread created: 4043307920
pthread created: 4042255248
pthread created: 4041202576
pthread created: 4040149904
replication threads: 2
trigger manager thread starting: tid: 4040149904

Database sync completed.

Run svrinit to seed database? (yes/no) [n]: yes
Please enter an IP address for svrinit [21.21.1.3]:
Please enter a netmask for svrinit [255.255.255.0]:
Please enter a hostname for svrinit [ism]:
Please enter a gateway for svrinit: 21.21.1.1
21.21.1.3 (ism) ASM tables initialized!

Starting statsd

Is this an IPTV deployment with Dual CAS? (yes/no) [n]:
Writing rc.local
ISA ecosystem configuration finished
cdsconfig finished, please use CDSM to complete configuration

Step 3  To verify that the CDS manager (VVIM, Stream Manager, or CDSM) is operational, using your web browser, enter the IP address of your CDS manager.

For example, if the IP address of your CDSM is 192.168.0.236, you can access it by entering http://192.168.0.236 in the address or location text box of your browser program.

The System Login page is displayed (see Figure B-1).

Figure B-1  CDSM Login Page

Step 4  Log in to the CDS manager GUI. Enter admin as the user name and admin as the password and click Login.

If you are unable to log in with the user name admin and the password admin, log in to the Cisco ASR 9000 Series Aggregation Services Router ISM (Integrated Service Module) line card Linux command line and run the /home/stats/runonce command, then log in to the CDS manager GUI again.

The VVIM Setup page or CDSM Setup page is displayed.

Step 5  Use the VVIM or CDSM GUI to complete the configuration.

For more information, see one of the following:

- For an ISA deployment, see the “Getting Started” chapter in the Cisco TV CDS 2.4 ISA Software Configuration Guide.
- For an RTSP deployment, see the “Getting Started” chapter in the *Cisco TV CDS 2.4 RTSP Software Configuration Guide*. 
interface Service-Engine

To configure an interface which emulates a 10-Gigabit Ethernet interface to carry video streaming/cache-fill traffic, use the `interface Service-Engine` command in global configuration mode. To delete the `interface Service-Engine` configuration, use the `no` form of this command.

```
interface Service-Engine interface-path-id

no interface Service-Engine interface-path-id
```

### Syntax Description

- **Service-Engine**
  
  The `Service-Engine` keyword signifies an interface which emulates a 10-Gigabit Ethernet interface which can be used to carry video streaming/cache-fill traffic.

- **interface-path-id**
  
  - Physical interface interface-path-id. The naming notation is `rack/slot/module/port`, and a slash between values is required as part of the notation.
    - `rack`—Chassis number of the rack.
    - `slot`—Physical slot number of the line card or modular services card.
    - `module`—Module number. A physical layer interface module (PLIM) is always 0.
    - `port`—Physical port number of the interface.

  For more information about the syntax for the router, use the question mark (`?`) online help function.

### Defaults

No interfaces are configured

### Command Modes

Global configuration (config)

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 4.1.0</td>
<td>This command was introduced on the ISM line card on the Cisco ASR 9000 Series Router.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

The `interface Service-Engine` command enters interface configuration mode to allow you to configure interfaces which emulate 10-Gigabit Ethernet interfaces which can be used to carry video streaming/cache-fill traffic.

The `no` form of this command applies only to virtual interfaces or to subinterfaces (that is, interfaces that have been created in global configuration mode).
### Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface</td>
<td>read, write</td>
</tr>
</tbody>
</table>

### Examples

In the following example, the `interface Service-Engine` command is given for the Service Engine interface-path-id tied to the ISM card in location 0/0/0/0, and interface configuration mode is entered for that interface:

```
RSP/0/RSP0/CPU0:router(config)# interface Service-Engine 0/0/0/0
RSP/0/RSP0/CPU0:router(config-if)# ipv4 address 10.20.1.1/30
RSP/0/RSP0/CPU0:router(config-if)# service-module ipv4 address 10.20.1.2/30
```

Service Engine interfaces are for data traffic – cache-fill traffic (from the system to the ISM) & streaming traffic (from the ISM to the system).

The service-module IPv4 address corresponds to the X86 Linux machine which provides network connectivity to the X86 Linux CDS application.

To check host reachability and network connectivity on IP networks, use the `ping` command in EXEC mode.

### Related Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clear interface</td>
<td>Clears interface statistics or packet counters.</td>
</tr>
<tr>
<td>show interfaces</td>
<td>Displays statistics for all interfaces configured on the router or on a specific node.</td>
</tr>
</tbody>
</table>
interface Service-mgmt

To configure an interface which emulates a 100MB Ethernet interface to carry video management traffic, use the `interface Service-mgmt` command in global configuration mode. To delete the `interface Service-mgmt` configuration, use the `no` form of this command.

```
interface Service-mgmt interface-path-id

no interface Service-mgmt interface-path-id
```

**Syntax Description**

- **Service-mgmt**
  
  The `Service-mgmt` keyword signifies an interface which emulates a 100MB Ethernet interface which can be used to carry video management traffic.

- **interface-path-id**
  
  - Physical interface interface-path-id. The naming notation is `rack/slot/module/port`, and a slash between values is required as part of the notation.
    - `rack`—Chassis number of the rack.
    - `slot`—Physical slot number of the line card or modular services card.
    - `module`—Module number. A physical layer interface module (PLIM) is always 0.
    - `port`—Physical port number of the interface.

  For more information about the syntax for the router, use the question mark (`?`) online help function.

**Defaults**

No interfaces are configured

**Command Modes**

Global configuration (config)

**Command History**

<table>
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<th>Release</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Release 4.1.0</td>
<td>This command was introduced on the ISM line card on the Cisco ASR 9000 Series Router.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the Configuring AAA Services on Cisco IOS XR Software module of the Cisco IOS XR System Security Configuration Guide.

The `interface Service-mgmt` command enters interface configuration mode to allow you to configure interfaces which emulate 100MB Ethernet interfaces which can be used to carry video management traffic.

The `no` form of this command applies only to virtual interfaces or to subinterfaces (that is, interfaces that have been created in global configuration mode).
## Single Hardware PID (Role Based Installation)

Cisco IOS XR Software Release 4.2.1 introduces the single hardware PID solution on the ISM (Integrated Service Module) line card. This feature provides role based installation of the following different service applications

- CDS TV
- CDS IS
- CGv6

Previously, you installed these appropriate services applications manually.

Use the following newly-introduced Cisco IOS XR Software Release 4.2.1 commands to select which service application to run (e.g. CGN):

```
(config)#hw-module service <role> loc <ISM_node>
```
(admin)# download install-image <install-file-name> location <ISM_node>

First, enter global configuration mode by executing the config command:

```
RP/0/RSP0/CPU0#config
```

Next, change the existing role by executing the hw-module service <role> location <ISM_node> command:

```
RP/0/RSP0/CPU0(config)#hw-module service <role> location <ISM_node>
```

Finally, enter the end or commit commands.

When you issue the end command, the system prompts you to commit changes:

```
Uncommitted changes found, commit them before exiting (yes/no/cancel)?
[cancel]:
```

Entering **yes** saves configuration changes to the running configuration file, exits the configuration session, and returns the router to EXEC mode.

Entering **no** exits the configuration session and returns the router to EXEC mode without committing the configuration changes.

Entering **cancel** leaves the router in the current configuration session without exiting or committing the configuration changes.

Execute the **commit** command to save the configuration changes to the running configuration file and remain within the configuration session.

Execute the **end** command and respond to the question with **yes**, saving your configuration changes to the running configuration file, exiting the configuration session, and returning the router to EXEC mode.

Now that you've changed the role the next step is to install your chosen service application image.

Firstly, enter administration mode by executing the admin command:

```
RP/0/RSP0/CPU0#admin
```

Next, install your chosen <install-file-name> by executing the download install-image <install-file-name> location <ISM_node> command:

```
RP/0/RSP0/CPU0 (admin)#download install-image <install-file-name> location <ISM_node>
```

Where the <install-file-name> variable contains the name of the service application image file to be installed on the linux filesystem tied to the node named by the <ISM_node> variable.

Once you execute the download install-image <install-file-name> location <ISM_node> command the following warning message will be displayed:

```
You are going to install new application on LC. Card will be reloaded automatically once installation is completed. Do you want to proceed with the installation?[confirm]
```

Respond to the question with **yes**. The system begins downloading the selected image file.