# Recover from Corrupt or Missing File Image or in ROMmon Mode


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# Introduction

This section explains how to recover a Catalyst 9400 Series Supervisor from a missing or corrupted system image, or an incorrect boot variable. The Supervisor module image can sometimes be corrupted during a Trivial File Transfer Protocol (TFTP) download, or when manually deleted by the user. The switch provides a number of ways to recover should any of these events occur on the Supervisor Engine.

When the Supervisor-equipped switch boots up or resets, there are these two possibilities:

1. The switch starts up normally and displays the Hostname> prompt or the default Switch> prompt.
2. The switch cannot find the image, the image is corrupt, no image is present in the bootflash device, or the boot variable is set incorrectly and therefore winds up in ROM monitor (ROMmon) mode. It displays the rommon> prompt. In ROMmon mode, the switch must be able to locate a valid system image from either the bootflash device. These Supervisor Engine also provides an Ethernet Management port (10/100 Base T), which is available only from ROMmon mode and can be configured to download a new valid image through TFTP from a TFTP process. There is no option for Xmodem or Ymodem which allows you to copy an image through the console port.

### Normal Operation

When the switch operates normally, it is at the hostname> prompt or the default Switch> prompt. You can issue the dir bootflash: command to view the contents of the Supervisor Flash device, as this example shows. Issue the verify command to determine if the image has a valid checksum, as this example shows:

```
Switch#dir bootflash:
Directory of bootflash:/

    1  -rw-     6516904   Jul 11 2000 02:14:10  packages.conf

61341696 bytes total (54824664 bytes free)
```

```
Switch#verify bootflash:packages.conf
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Verified bootflash:packages.conf
```

Since the switch recognizes all Flash devices in ROMmon mode, you can issue the **dir** *device-name* commands to show the Flash contents, as is demonstrated in the remaining sections of this document

Notice in the previous example, there is only a single boot image in bootflash. You can have as many system images as you can fit in the bootflash:. Bootflash size is fixed at 64 MB.

The following are the ROMmon variables that Catalyt 9400 supports and examples to set them:

- MANUAL_BOOT=yes

  A value of "yes" disables auto boot and enables manual booting. A value of "no" enables auto boot.

- DEFAULT_GATEWAY=172.27.74.1
- IP_ADDRESS=172.27.74.111
- IP_SUBNET_MASK=255.255.255.0
- TFTP_SERVER=172.19.64.31

# Recover Switch from a Corrupt or Missing Image in ROMmon Mode

The switch could wind up in ROMmon mode due to these reasons:

1. A switch reload or crash after the image was corrupted or deleted. See the *Recover from a Corrupt or Missing Image* section of this document for more information..
2. See the Recover from a Continuous Reboot section of this document to determine if a valid system image is present in the bootflash:. If there is no file present, see the *Recover from a Corrupt or Missing Image* section of this document.
3. The boot variable is incorrect, but a valid image is still present. See the *Recover from a Continuous Reboot* section of this document for more information.

These primary symptoms occur in your network if the switch is in ROMmon mode:

- Routing failures occur because ROMmon mode cannot route between VLAN interfaces, and is only designed to recover the switch.
- If you try to Telnet to any of the interfaces it fails, and if you are connected to the console port of the Supervisor, you see this prompt:

  rommon 1>

# Recover Switch from a Continous Reboot

The switch might end up in a continuous reboot sequence if the boot variable is not set to the correct system image file and proper destination device.

You can recover the switch with the following steps:

1. You should already have a console connection to the Supervisor to see the previous output and perform the recovery. On a standard Windows operating system platform, configure a HyperTerminal connection directly to COM1 with these settings:
   - 9600 bps
   - Eight data bits
   - No parity
   - One stop bit
   - Flow control = none

   Use a rolled male RJ-45 cable to connect from COM1 on the PC to the console port on the Supervisor module. Use a DB-9 connector on the PC.
2. The reboot continues until autoboot is prevented when you press Control-C and go into ROMmon mode. This is shown in this example:

```
**********************************************************
 *                                                        *
 * Welcome to ROM Monitor for WS-X4014 System.            *
 * Copyright (c) 2002 by Cisco Systems, Inc.              *
 * All rights reserved.                                   *
 *                                                        *
 **********************************************************

 ROM Monitor Program Version 12.1(11br)EW

 Board type 1, Board revision 5
 Swamp FPGA revision 14, Dagobah FPGA revision 48


 MAC Address  : 00-01-96-d9-f6-fe
 Ip Address   : Not set.
 Netmask      : Not set.
 Gateway      : Not set.
 TftpServer   : Not set.
 Main Memory  : 256 Mbytes



 ***** The system will autoboot in 5 seconds *****


 Type control-C to prevent autobooting.

!--- Press Control-C.

 Autoboot cancelled......... please wait!!!
rommon 1 > [interrupt]
```

3. Enter the **dir bootflash:** command to list the files present in the bootflash.

```
rommon 1 >dir bootflash:

 Size       Attributes Name
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
74871940     -rw-     sdX86.170607
46858696     -rw-     mcln_x86_kernel_20170525.SSA
4096         drw-     .installer
1295         -rw-     bootloader_evt_handle.log
4096         drw-     .ssh
8192         drw-     core
4096         drw-     .prst_sync
4096         drw-     .rollback_timer
4096         drw-     gs_script
252          -rw-     boothelper.log
33554432     -rw-     nvram_config
35           -rw-     pnp-tech-time
45045        -rw-     pnp-tech-discovery-summary
1036         -rw-     vlan.dat
67587176     -rw-     mcln_x86_kernel_20170628.SSA
89423547     -rw-     sdX86.170703
89401770     -rw-     sdX86.170606
54034568     -rw-     upg_NSB2SB_rom133sb_fpga170505.SSA
98869        -rw-     memleak.tcl
4096         drw-     onep
15           -rw-     dope_hist
8314         -rw-     packages.conf
47           -rw-     DHCP-snooping
5514216     -rw-    cat9k-cc_srdriver.BLD_V166_THROTTLE_LATEST_20170820_090650.SSA.pkg
76571620     -rw-     cat9k-espbase.BLD_V166_THROTTLE_LATEST_20170820_090650.SSA.pkg
1536996     -rw-    cat9k-guestshell.BLD_V166_THROTTLE_LATEST_20170820_090650.SSA.pkg
373478368    -rw-     cat9k-rpbase.BLD_V166_THROTTLE_LATEST_20170820_090650.SSA.pkg
29546198     -rw-     cat9k-rpboot.BLD_V166_THROTTLE_LATEST_20170820_090650.SSA.pkg
27648996     -rw-     cat9k-sipbase.BLD_V166_THROTTLE_LATEST_20170820_090650.SSA.pkg
54924256     -rw-     cat9k-sipspa.BLD_V166_THROTTLE_LATEST_20170820_090650.SSA.pkg
6767588      -rw-     cat9k-srdriver.BLD_V166_THROTTLE_LATEST_20170820_090650.SSA.pkg
12256224     -rw-     cat9k-webui.BLD_V166_THROTTLE_LATEST_20170820_090650.SSA.pkg
5510104      -rw-     cat9k-cc_srdriver.2017-08-25_09.41_srchanna.SSA.pkg
76563412     -rw-     cat9k-espbase.2017-08-25_09.41_srchanna.SSA.pkg
1536984      -rw-     cat9k-guestshell.2017-08-25_09.41_srchanna.SSA.pkg
373449684    -rw-     cat9k-rpbase.2017-08-25_09.41_srchanna.SSA.pkg
29547297     -rw-     cat9k-rpboot.2017-08-25_09.41_srchanna.SSA.pkg
27644884     -rw-     cat9k-sipbase.2017-08-25_09.41_srchanna.SSA.pkg
54916052     -rw-     cat9k-sipspa.2017-08-25_09.41_srchanna.SSA.pkg
6767572      -rw-     cat9k-srdriver.2017-08-25_09.41_srchanna.SSA.pkg
12256208     -rw-     cat9k-webui.2017-08-25_09.41_srchanna.SSA.pkg
8266         -rw-     cat9k_iosxe.2017-08-25_09.41_srchanna_iso1.SSA.conf
5510104      -rw-     cat9k-cc_srdriver.2017-08-25_09.08_srchanna.SSA.pkg
76563412     -rw-     cat9k-espbase.2017-08-25_09.08_srchanna.SSA.pkg
1536984      -rw-     cat9k-guestshell.2017-08-25_09.08_srchanna.SSA.pkg
373445588    -rw-     cat9k-rpbase.2017-08-25_09.08_srchanna.SSA.pkg
29547259     -rw-     cat9k-rpboot.2017-08-25_09.08_srchanna.SSA.pkg
27644884     -rw-     cat9k-sipbase.2017-08-25_09.08_srchanna.SSA.pkg
54916052     -rw-     cat9k-sipspa.2017-08-25_09.08_srchanna.SSA.pkg
6767572      -rw-     cat9k-srdriver.2017-08-25_09.08_srchanna.SSA.pkg
12256208     -rw-     cat9k-webui.2017-08-25_09.08_srchanna.SSA.pkg
8266         -rw-     cat9k_iosxe.2017-08-25_09.08_srchanna_iso2.SSA.conf
9079         -rw-     packages.conf.02-
47160612     -rw-     dope-A0-300817-143021.csv.gz
11414692     -rw-     dope-LC1-A0-300817-173015.csv.gz
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

**Note** The reason the switch reboots continuously is because the system image file name specified does not exist, but there is a valid file in the bootflash. Also, the system image file name specified is case sensitive. If it is not specified correctly, it causes a continuous reboot.

4. Since you have the required system image file present in the bootflash:, you can issue the boot bootflash:<filename> command to boot the switch. The system is booted with that specified image. If the switch fails to load due to the specified system image being corrupt, or the valid system file is not present, see the *Recover from a Corrupt or Missing Image* section of this document.

5. Issue the **enable** command to enter into EXEC mode, as this example shows:

```
Switch>enable
Password:
Switch#
```

6. The system is back up. Issue the **dir bootflash:** command to note the file in the bootflash:.

7. Issue the **show bootvar** command to check the current boot variable.

```
Switch#show bootvar
BOOT variable = bootflash:packages.conf;
Configuration Register is 0x1822
MANUAL_BOOT variable = yes
BAUD variable = 115200
ENABLE_BREAK variable =
CONFIG_FILE variable =
```

8. Remove the existing incorrect boot variable and add the correct one. Issue the **configure terminal** command in order to do this.

```
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#no boot system flash bootflash:packages.conf
Switch(config)#boot system flash bootflash:cat9400packages.conf
Switch(config)#end

00:01:31: %SYS-5-CONFIG_I: Configured from console by console
```

9. Save the configuration from running to startup, by issuing the **write memory** command.

```
Switch#write memory
Building configuration...
Compressed configuration from 4359 bytes to 1730 bytes[OK]
Switch#
```

10. Check the boot variable again to make sure it is set properly so that the switch boots up the correct system file on the next reboot. Issue the **show bootvar** command in order to do this.

```
Switch#show bootvar
BOOT variable = bootflash:cat9400packages.conf
Configuration Register is 0x1822
MANUAL_BOOT variable = yes
BAUD variable = 115200
ENABLE_BREAK variable =
CONFIG_FILE variable =
```

# Recover from a Corrupt or Missing Image

The Supervisor boots into ROMmon mode if the image specified is corrupt or no image file exists. Typically, you should have more than one image in the bootflash: device so that the switch can be recovered.

Complete these steps, in the order given, to facilitate a successful image recovery from ROMmon mode without any valid image.

1. Make a console connection to the Supervisor. Typically on a standard Windows operating system platform, configure a HyperTerminal connection directly to COM1 with these settings:
   - 9600 bps
   - Eight data bits
   - No parity
   - One stop bit

   Use a rolled male RJ-45 cable to connect from COM1 on the PC to the console port on the Supervisor module. Use a DB-9 connector on the PC, and a HyperTerminal connect window to connect to the Supervisor.

2. Press Enter. If you get the **rommon >** prompt, skip to Step 3. If the switch continuously reboots, press Control-C to prevent autoboot and to get into ROMmon mode.

```
************************************************************
 *                                                          *
 * Welcome to ROM Monitor for WS-X4014 System.              *
 * Copyright (c) 2002 by Cisco Systems, Inc.                *
 * All rights reserved.                                     *
 *                                                          *
 ************************************************************

 ROM Monitor Program Version 12.1(11br)EW

 Board type 1, Board revision 5
 Swamp FPGA revision 14, Dagobah FPGA revision 48


 MAC Address  : 00-01-96-d9-f6-fe
 Ip Address   : Not set.
 Netmask      : Not set.
 Gateway      : Not set.
 TftpServer   : Not set.
 Main Memory  : 256 Mbytes



 ***** The system will autoboot in 5 seconds *****


 Type control-C to prevent autobooting.
 !--- Press Control-C.
 Autoboot cancelled......... please wait!!!
rommon 1 > [interrupt]
```

3. Verify that there is a valid file present in the bootflash: by issuing the **dir bootflash:** command, as this example shows. If you do have any valid file, see the *Recovering from a Continuous Reboot* section of this document for the recovery. Otherwise, continue to the next step.

```
rommon 1 >dir bootflash:

File size Checksum File name
-----------------------------------------------

Total space = 61341696 bytes, Available = 61341696 bytes
```

Issue the set command to display the current environment variables.

```
rommon 3 >set
PS1=rommon ! >
RommonBuild=5
ConfigReg=0x2102
BOOT=bootflash:packages.conf
SkipDiags=0
BSI=0
RET_2_RTS=13:36:46 UTC Tue Aug 15 2000
RET_2_RUTC=966346606
BootStatus=Failure
BootedFileName=bootflash:packages.conf
RommonVer=12.1(11br)EW
```

4. Issue the **unset BOOT** command to clear the current invalid boot variable, which defines the file to load.

```
rommon 6 >unset BOOT
```

5. Connect the management port on the Supervisor to the network to access a TFTP server. The Fast Ethernet port (10/100 MGT) on the Supervisor Engine is inoperative in normal operation in current software release. An Ethernet cable plugged into the 10/100 MGT is active only in ROMmon mode

   As this example shows, if you plan to connect the 10/100 MGT port to the PC/Router directly, use a straight cable. If you connect to another switch, use a crossover cable.

```
rommon 7 >

!--- Connect the appropriate cable to connect to the network.


Established physical link 100MB Full Duplex
Network layer connectivity may take a few seconds
```

   The Management port auto-negotiates speed and duplex with the connected device. Currently, you can not hardcode speed and duplex settings. Since this port is available only in ROMmon mode and for TFTP only, it is not a major concern if the speed and duplex are mismatched due to any potential auto-negotiating problem. The TFTP application has an internal packet loss mechanism to prevent any corruption of the system image being downloaded.

6. Enter the **set** commands to configure an IP address for the 10/100 MGT port, as this example shows. If the subnet mask is not specified, the IP address would take the default classful mask.

```
rommon 7> set IP_ADDRESS=192.168.247.10
rommon 8> set IP_SUBNET_MASK=255.255.255.0
```

7. Enter the **set DEFAULT_GATEWAY** command to configure the default gateway for the switch to use to get to the TFTP server, as this example shows. The default gateway should be a routing device in the same subnet as the IP address configured in Step 6.

```
rommon 8> set DEFAULT_GATEWAY=192.168.0.1
```

8. Enter the set command to verify the configurations which have been made.

```
switch: set
BAUD=9600
```

```
BOOT=bootflash:cat9k_iosxe.16.06.01.SPA.bin;
BOOTLDR=
BSI=0
CALL_HOME_DEBUG=0000000000000
CONFIG_FILE=
CRASHINFO=bootflash:crashinfo_RP_01_00_20170907-054557-UTC
DEFAULT_GATEWAY=172.16.94.193
DEFAULT_ROUTER=172.16.94.193
DISABLE_AUTH=
ENABLE_BREAK=yes
EULA_ACCEPTED=TRUE
IP_ADDRESS=172.16.94.221
IP_SUBNET_MASK=255.255.255.224
LICENSE_BOOT_LEVEL=network-advantage+dna-advantage,all:MACALLAN-CHASSIS;
MAC_ADDR=E4:AA:5D:59:7A:FC
MANUAL_BOOT=no
MODEL_NUM=C9400-SUP-1
MOTHERBOARD_SERIAL_NUM=JAE2124023Z
RANDOM_NUM=808994625
RET_2_RCALTS=1504781417
RET_2_RTS=
ROMMON>DISABLE_AUTH=
ROMMON_AUTOBOOT_ATTEMPT=3
SWITCH_IGNORE_STARTUP_CFG=0
SWITCH_NUMBER=1
SYSTEM_SERIAL_NUM=
TEMPLATE=access
TFTP=SERVER=172.16.53.46
```

**9.** Ping the TFTP server to ensure that there is connectivity to the server from the MGT port on the Supervisor Engine. Enter the **ping** *tftp_server_ip_address* command, as this example shows:

```
rommon 9 >ping 192.168.0.1

Host 192.168.0.1 is alive
```

If the ping is not successful, troubleshoot the IP connectivity issue from the default gateway to the TFTP server. If the TFTP server is the same subnet, make sure it is configured with the IP address you are pinging.

**10.** Once the ping to the TFTP server is successful, you can issue the **boot tftp://***tftp_server_ip_address/image_path_and_file_name* command to specify the system image which is available in the TFTP server to boot the Supervisor.

```
rommon 1>boot tftp://192.168.0.1/cat9k/cat9k_iosxe.2017-08-25_09.41.bin
attempting to boot from [tftp://192.168.0.1/cat9k/cat9k_iosxe.2017-08-25_09.41.SSA.bin]


 interface : eth0
 macaddr   : E4:AA:5D:59:7B:44
 ip        : 192.168.247.10
 netmask   : 255.255.0.0
 gateway   : 192.168.0.1
 server    : 192.168.0.1
 file      : cat9k/cat9k_iosxe.2017-08-25_09.41.bin
```

```
Restricted Rights Legend
```

```
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           San Jose, California 95134-1706



Cisco IOS Software [Everest], Catalyst L3 Switch Software (CAT9K_IOSXE), Experimental
 Version 16.6.20170824:202043 [v166_throttle-/nobackup/srchanna/lock_166 104]
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software.



FIPS: Flash Key Check : Begin
FIPS: Flash Key Check : End, Not Found, FIPS Mode Not Enabled

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cisco C9407R (X86) processor (revision V00) with 869398K/6147K bytes of memory.
Processor board ID FXS1939Q3LZ
144 Gigabit Ethernet interfaces
16 Ten Gigabit Ethernet interfaces
4 Forty Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
15958516K bytes of physical memory.
11161600K bytes of Bootflash at bootflash:.
1638400K bytes of Crash Files at crashinfo:.
0K bytes of WebUI ODM Files at webui:.

%INIT: waited 0 seconds for NVRAM to be available
```

```
Press RETURN to get started!


*Sep  1 13:20:31.770: %SMART_LIC-6-AGENT_READY: Smart Agent for Licensing is initialized
*Sep  1 13:20:37.460: NGWC: not crashing for mcprp_get_ecfm_brain_mac_addr
*Sep  1 13:20:39.084: %CRYPTO-4-AUDITWARN: Encryption audit check could not be performed
*Sep  1 13:20:39.125: %SPANTREE-5-EXTENDED_SYSID: Extended SysId enabled for type vlan
*Sep  1 13:20:39.350: %LINK-3-UPDOWN: Interface Lsmpi12/3, changed state to up
*Sep  1 13:20:39.351: %LINK-3-UPDOWN: Interface EOBC12/1, changed state to up
*Sep  1 13:20:39.351: %LINEPROTO-5-UPDOWN: Line protocol on Interface LI-Null0, changed
 state to up
*Sep  1 13:20:39.351: %LINK-3-UPDOWN: Interface GigabitEthernet0/0, changed state to
down
*Sep  1 13:20:39.351: %LINK-3-UPDOWN: Interface LIIN12/2, changed state to up
*Sep  1 13:20:39.418: %SYS-3-HARIKARI: Process pki_app top-level routine exited
*Sep  1 13:20:39.431: %PNP-6-PNP_DISCOVERY_STOPPED: PnP Discovery stopped (Startup
Config Present)
*Sep  1 13:20:39.441: %ILPOWER-6-SET_ILPOWER: Set power allocated to POE to 2780 for
slot 0
*Sep  1 13:20:40.292: %IOSXE_MGMTVRF-6-CREATE_SUCCESS_INFO: Management vrf Mgmt-vrf
created with ID 1, ipv4 table-id 0x1, ipv6 table-id 0x1E000001
*Sep  1 13:20:00.189: %HW_PFU-3-PFU_IDPROM_CORRUPT:  R1/0: cmand:  The PEM/FM idprom
could be read, but is corrupt in slot P17 The system will run without environmental
monitoring for this component
*Sep  1 13:20:11.565: %CMRP_PFU-6-PWR_MGMT_OK:  R1/0: cmand:  Sufficient number of
power supplies (4) are installed for power redundancy mode none (excess power 3150
watts).
*Sep  1 13:20:24.203: %CMRP_PFU-6-PWR_MGMT_OK:  R1/0: cmand:  Sufficient number of
power supplies (4) are installed for power redundancy mode none (excess power 1685
watts).
*Sep  1 13:20:35.524: %IOSXE-4-PLATFORM:  R1/0: kernel: pci 0000:15:00.1: BAR 2: [???
 0x00000000 flags 0x102000] has bogus alignment
*Sep  1 13:20:35.524: %IOSXE-4-PLATFORM:  R1/0: kernel: pci 0000:15:00.1: BAR 4: [???
 0x00000000 flags 0x102000] has bogus alignment
*Sep  1 13:20:35.524: %IOSXE-3-PLATFORM:  R1/0: kernel: pci 0000:15:00.0: BAR 4: error
 updating (0x2021000c != 0x00000c)
*Sep  1 13:20:35.524: %IOSXE-3-PLATFORM:  R1/0: kernel: Error: Storage device
initialization failed with unknown error! error 0xd2b5c46f, Img version: 0xb3537bb0,
lslot 0
*Sep  1 13:20:36.184: %CMRP_PFU-6-PWR_MGMT_OK:  R1/0: cmand:  Sufficient number of
power supplies (4) are installed for power redundancy mode none (excess power 1555
watts).
*Sep  1 13:20:36.532: %EVENTLIB-3-CPUHOG:  R1/0: cmcc:  undefined: 5072ms,
Traceback=1#d1ecae96f48e7b01c7626e7421118715  c:7FF4ACC05000+33410 c:7FF4ACC05000+E0197
 tam_act2:7FF4B0B0F000+8F1F tam_act2:7FF4B0B0F000+F676 tam_act2:7FF4B0B0F000+FA28
cmlib_util:7FF4B289F000+9CF5 cmlib_util:7FF4B289F000+19D8B :565477ADE000+4F17E
:565477ADE000+4F6BA :565477ADE000+723B9 :565477ADE000+60FEA
*Sep  1 13:20:38.312: %IOSXE-4-PLATFORM:  R1/0: kernel: pci 0000:1b:00.1: BAR 2: [???
 0x00000000 flags 0x102000] has bogus alignment
*Sep  1 13:20:38.312: %IOSXE-4-PLATFORM:  R1/0: kernel: pci 0000:1b:00.1: BAR 4: [???
 0x00000000 flags 0x102000] has bogus alignment
*Sep  1 13:20:38.312: %IOSXE-3-PLATFORM:  R1/0: kernel: pci 0000:1b:00.0: BAR 4: error
 updating (0x2021000c != 0x00000c)
*Sep  1 13:20:38.312: %IOSXE-3-PLATFORM:  R1/0: kernel: Error: Storage device
initialization failed with unknown error! error 0xe7da8ea0, Img version: 0x1dfdead4,
lslot 2
*Sep  1 13:20:39.370: %IOSXE-4-PLATFORM:  R1/0: kernel: pci 0000:35:00.1: BAR 2: [???
 0x00000000 flags 0x102000] has bogus alignment
*Sep  1 13:20:39.370: %IOSXE-4-PLATFORM:  R1/0: kernel: pci 0000:35:00.1: BAR 4: [???
 0x00000000 flags 0x102000] has bogus alignment
*Sep  1 13:20:39.370: %IOSXE-3-PLATFORM:  R1/0: kernel: pci 0000:35:00.0: BAR 4: error
 updating (0x2021000c != 0x00000c)
```

```
*Sep  1 13:20:39.370: %IOSXE-3-PLATFORM:  R1/0: kernel: Error: Storage device
initialization failed with unknown error! error 0x976ff5fb, Img version: 0xc92bf77b,
lslot 3
*Sep  1 13:20:40.348: %EVENTLIB-3-CPUHOG:  R1/0: cmcc:  undefined: 5392ms,
Traceback=1#d1ecae96f48e7b01c7626e7421118715   c:7F7461488000+33410 c:7F7461488000+E0197
 tam_act2:7F7465392000+8F1F tam_act2:7F7465392000+F8BF tam_act2:7F7465392000+FA28
cmlib_util:7F7467122000+9CF5 cmlib_util:7F7467122000+19D8B :563133282000+4F17E
:563133282000+4F6BA :563133282000+723B9 :563133282000+60FEA
*Sep  1 13:20:40.436: %EVENTLIB-3-CPUHOG:  R1/0: cmcc:  undefined: 5509ms,
Traceback=1#d1ecae96f48e7b01c7626e7421118715   c:7F97C4C70000+33410
pthread:7F97C5014000+100B0 syshw:7F97D0F6F000+FCE1 syshw:7F97D0F6F000+FE58
:562F95125000+54DAE :562F95125000+81565 :562F95125000+425F6 :562F95125000+732ED
cm_oir:7F97CC4EF000+28A55 cmcc_msgs:7F97CB280000+91422 cmcc_msgs:7F97CB280000+91210
*Sep  1 13:20:40.490: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed
state to down
*Sep  1 13:20:44.086: %CMEM-3-SENSOR_INIT_FAILED:  R1/0: cmand:  Sensor (Temp:   outlet)
 initialization failed due to No such file or directory.
*Sep  1 13:20:44.513: %SYS-2-PRIVCFG_DECRYPT: Successfully apply the private config
file
*Sep  1 13:20:44.969: %SW_VLAN-6-VTP_DOMAIN_NAME_CHG: VTP domain name changed to
zdf-acc.
*Sep  1 13:20:44.973: %SYS-5-CONFIG_I: Configured from memory by console
*Sep  1 13:20:44.975: %PARSER-4-BADCFG: Unexpected end of configuration file.

*Sep  1 13:20:44.990: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 1/0, interfaces
disabled
*Sep  1 13:20:44.990: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 3/0, interfaces
disabled
*Sep  1 13:20:44.990: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 4/0, interfaces
disabled
*Sep  1 13:20:44.991: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 5/0, interfaces
disabled
*Sep  1 13:20:44.991: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 6/0, interfaces
disabled
*Sep  1 13:20:45.010: %SPA_OIR-6-OFFLINECARD: SPA (C9400-LC-48T) offline in subslot
1/0
*Sep  1 13:20:45.014: %SPA_OIR-6-OFFLINECARD: SPA (C9400-SUP-1) offline in subslot 3/0
*Sep  1 13:20:46.458: %SYS-6-BOOTTIME: Time taken to reboot after reload =  303 seconds
*Sep  1 13:20:46.939: %LINK-5-CHANGED: Interface Vlan1, changed state to administratively
 down
*Sep  1 13:20:53.578: %IOSXE_OIR-6-ONLINECARD: Card (fp) online in slot F1
*Sep  1 13:20:58.096: %LINK-3-UPDOWN: Interface GigabitEthernet0/0, changed state to
up
*Sep  1 13:20:59.099: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0,
 changed state to up
*Sep  1 13:20:59.104: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
*Sep  1 13:21:15.745: %SPA_OIR-6-ONLINECARD: SPA (C9400-SUP-1) online in subslot 4/0
*Sep  1 13:21:15.752: %TRANSCEIVER-6-INSERTED:  R1/0: iomd:  transceiver module inserted
 in TenGigabitEthernet4/0/1
*Sep  1 13:21:15.768: %TRANSCEIVER-6-INSERTED:  R1/0: iomd:  transceiver module inserted
 in TenGigabitEthernet4/0/3
*Sep  1 13:21:15.778: %SPA_OIR-6-ONLINECARD: SPA (C9400-SUP-1) online in subslot 3/0
*Sep  1 13:21:15.783: %TRANSCEIVER-6-INSERTED:  R1/0: iomd:  transceiver module inserted
 in TenGigabitEthernet3/0/1
*Sep  1 13:21:15.790: %TRANSCEIVER-6-INSERTED:  R1/0: iomd:  transceiver module inserted
 in TenGigabitEthernet3/0/2
*Sep  1 13:21:17.543: %SPA_OIR-6-ONLINECARD: SPA (C9400-LC-48T) online in subslot 1/0
*Sep  1 13:21:20.261: %SPA_OIR-6-ONLINECARD: SPA (C9400-LC-48U) online in subslot 6/0
*Sep  1 13:21:20.353: %SPA_OIR-6-ONLINECARD: SPA (C9400-LC-48U) online in subslot 5/0
*Sep  1 13:21:33.591: %LINK-3-UPDOWN: Interface GigabitEthernet1/0/47, changed state
to up
*Sep  1 13:21:33.813: %LINK-3-UPDOWN: Interface GigabitEthernet1/0/16, changed state
to up
*Sep  1 13:21:34.591: %LINEPROTO-5-UPDOWN: Line protocol on Interface
```

```
GigabitEthernet1/0/47, changed state to up
*Sep  1 13:21:34.813: %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet1/0/16, changed state to up
*Sep  1 13:21:36.449: %LINK-3-UPDOWN: Interface GigabitEthernet5/0/1, changed state
to up
*Sep  1 13:21:36.461: %LINK-3-UPDOWN: Interface GigabitEthernet5/0/9, changed state
to up
*Sep  1 13:21:36.469: %LINK-3-UPDOWN: Interface GigabitEthernet5/0/13, changed state
to up
*Sep  1 13:21:36.477: %LINK-3-UPDOWN: Interface GigabitEthernet5/0/17, changed state
to up
*Sep  1 13:21:36.487: %LINK-3-UPDOWN: Interface GigabitEthernet5/0/24, changed state
to up
*Sep  1 13:21:36.494: %LINK-3-UPDOWN: Interface GigabitEthernet5/0/25, changed state
to up
*Sep  1 13:21:36.504: %LINK-3-UPDOWN: Interface GigabitEthernet5/0/33, changed state
to up
*Sep  1 13:21:36.590: %LINK-3-UPDOWN: Interface GigabitEthernet5/0/37, changed state
to up
*Sep  1 13:21:37.449: %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet5/0/1, changed state to up
*Sep  1 13:21:37.462: %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet5/0/9, changed state to up
*Sep  1 13:21:37.469: %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet5/0/13, changed state to up
*Sep  1 13:21:37.477: %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet5/0/17, changed state to up
*Sep  1 13:21:37.488: %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet5/0/24, changed state to up
*Sep  1 13:21:37.494: %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet5/0/25, changed state to up
*Sep  1 13:21:37.504: %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet5/0/33, changed state to up
*Sep  1 13:21:37.591: %LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet5/0/37, changed state to up
```

**Note** The IP address of the TFTP server and the file has already been preselected since you used the information for the transfer of the image to the bootflash:. If you would like to change it, type the new IP address or image name. Otherwise, press Enter and the preselected information is used.

The system image has been copied. Issue the **dir bootflash:** command to note the file in the bootflash:.

11. Enter the **verify** command to verify the integrity of the downloaded file. If the verification fails, you have to download the file again.

```
Switch#verify bootflash:packages.conf
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCC
Verified bootflash:packages.conf
```

12. Enter the **show bootvar** command to check the current boot variable.
13. Remove any existing incorrect boot variables and add the correct one.
14. Enter the **write memory** command to save the configuration from running to startup.

15. Use the **show bootvar** command to check the boot variable again to ensure it is set correctly, so that the switch boots up the correct system file on the next reboot.

# Feature History for Recovering a Switch

This table provides release and related information for features explained in this module.

These features are available on all releases subsequent to the one they were introduced in, unless noted otherwise.

| Release | Feature | Feature Information |
|---|---|---|
| Cisco IOS XE Everest 16.6.1 | Recover a Switch | You can recover a Catalyst 9400 Series Supervisor from a missing or corrupted system image, or an incorrect boot variable. |

Use Cisco Feature Navigator to find information about platform and software image support. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn.