

Catalyst 3750 Software Upgrade in a Stack Configuration with Use of the Command-Line Interface

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Introduction

This document explains the step-by-step procedure to use the command-line interface (CLI) in order to upgrade the software image on Cisco Catalyst 3750 series switches that have a multiswitch stack configuration.

Prerequisites

Requirements

Before you download software, refer to these sections of Release Notes for the Catalyst 3750, 3560, and 2970 Switches, Cisco IOS Release 12.2(25)SEB and Later for important information:

- *Finding the Software Version and Feature Set*
- *Deciding Which Files to Use*
- *Upgrading a Switch by Using the Device Manager or Network Assistant*
- *Upgrading a Switch by Using the CLI*
- *Recovering from a Software Failure*

Components Used

The information in this document is based on these hardware versions:

- WS-C3750G-12S switches
- WS-C3750G-24TS switches

Note: You can substitute any stackable Catalyst 3750 series switch.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to the Cisco Technical Tips Conventions for more information on document conventions.

Find the Software Version and Feature Set

A directory that has the Cisco IOS® Software release name stores the Cisco IOS image as a bin file. The directory stores the image on the system board flash device (flash:). A subdirectory contains the files that you need for web management.

You can use the **show version** privileged EXEC command in order to see the software version that runs on your switch. The second line of the display shows the version.

Note: Although the **show version** output always shows the software image that runs on the switch, the model name that appears at the end of this display is the factory configuration. This image is either the IP base image, formerly known as the standard multilayer image (SMI), or the IP services image, formerly known as the enhanced multilayer image (EMI). This name does not change if you upgrade the software image.

You can also use the **dir filesystem:** privileged EXEC command. This command shows the directory names of any other software images that you have stored in flash memory.

Before you decide the Cisco IOS Software release to which you want to upgrade the switches, you should:

- Read the Release Notes of the particular Cisco IOS Software release. Refer to Cisco Catalyst 3750 Series Switches – Release Notes.
- Make sure the Cisco IOS Software release does not have any defects which can affect any of the existing functionality. Refer to the Bug Toolkit (registered customers only) and Cisco Catalyst 3750 Series Switches – Field Notices.

Finding the Priority Value of a Catalyst 3750 Switch

Priority value determines the Master switch in a stack. The priority value can be 1 to 15. The default priority value is 1. Cisco recommends that you assign the highest priority value to the switch that you prefer to be the stack master. In this example, the master switch has a priority value of 15. For more information, refer to Creation and Management of Catalyst 3750 Switch Stacks.

```
3750#show switch detail
```

Switch#	Role	Mac Address	Priority	Current State
1	Slave	000c.30ae.4f00	9	Ready

Decide Which Files to Use

The software download center for Catalyst 3750 contains two sets of IOS images for every feature set and versions. One set contains only the IOS image file which has the extension .bin. The other set contains the IOS image plus the web-based device manager which has the extension .tar.

This document explains the upgrade procedure with the .tar image as well as with the .bin image. The .tar file contains the Cisco IOS image file and the files that you need for the embedded device manager. You must use the combined tar file in order to upgrade the switch through the device manager.

Cisco IOS Software Release 12.2(25)SEA and earlier referred to the image that provides Layer 2+ features and basic Layer 3 routing as the SMI. These software releases referred to the image that provides full Layer 3 routing and advanced services as the EMI.

Cisco IOS Software Release 12.2(25)SEB and later refer to the SMI as the *IP base* image and the EMI as the *IP services* image.

Table 1 lists the different file-naming conventions for releases earlier than and later than Cisco IOS Software Release 12.2(25)SEB.

Table 1: Cisco IOS Image File-Naming Conventions	
Cisco IOS Software Release 12.2(25)SEA and earlier	Cisco IOS Software Release 12.2(25)SEB and later
c3750-i9-mz (SMI)	c3750-ipbase-mz
c3750-i9k91-mz (SMI)	c3750-ipbasek9-mz
c3750-i5-mz (EMI)	c3750-ipservices-mz
c3750-i5k91-mz (EMI)	c3750-ipservicesk9-mz

Table 2 lists the file names for this software release.

Table 2: Cisco IOS Software Image Files	
File Name	Description
c3750-ipbase-tar.122-25.SEB.tar	Catalyst 3750 IP base image and device manager files This image has Layer 2+ and basic Layer 3 routing features.
c3750-ipservices-tar.122-25.SEB.tar	Catalyst 3750 IP services image and device manager files This image has both Layer 2+ and full Layer 3 routing features.

c3750-ipbasek9-tar.122-25.SEB.tar	Catalyst 3750 IP base cryptographic image and device manager files This image has the Kerberos, SSH ¹ , Layer 2+, and basic Layer 3 routing features.
c3750-ipservicesk9-tar.122-25.SEB.tar	Catalyst 3750 IP services cryptographic image and device manager files This image has the Kerberos, SSH, Layer 2+, and full Layer 3 features.
c3750-advipservicesk9-tar.122-25.SEB.tar	Catalyst 3750 advanced IP services image, cryptographic file, and device manager files This image has all the IP services image features and the capability for unicast routing of IPv6 ² packets.

¹ SSH = Secure Shell

² IPv6 = IP version 6

The Software Advisor (registered customers only) tool helps to determine the feature set required for the functionalities needed in the network.

Flash File System and Memory Requirements

Flash File System

The 3750 ships from the factory with the installation of a web-based device manager (.tar file) in the flash: directory. The extraction process that takes place with a .tar file creates a Cisco IOS image directory. The image directory has the same name as the Cisco IOS image (.bin file), but without the file extension. This directory stores the Cisco IOS image (.bin file) along with an HTML subdirectory that contains the device manager files.

Issue the **dir flash:** command in order to view the 3750 Flash file system. Here is a sample command output:

```

3750#dir flash:
Directory of flash:/

   2  -rwx  5684228  Mar 12 1993 08:13:57 +00:00  c3750-ipbase-mz.122-25.SEC2.bin
   3  -rwx    2105   Mar  1 1993 00:02:16 +00:00  config.text
   4  drwx    192   Mar 12 1993 08:11:00 +00:00  c3750-ipbase-mz.122-25.SEB4
   5  -rwx     5    Mar  1 1993 00:02:16 +00:00  private-config.text
   6  -rwx    856   Mar  1 1993 00:04:40 +00:00  vlan.dat
  364 -rwx    105   Mar 12 1993 08:11:00 +00:00  info

15998976 bytes total (3201536 bytes free)

```

!--- Notice the "d" in the permissions statement.

!--- It indicates that c3750-ipbase-mz.122-25.SEB4 is a directory.

!--- This directory is the location of both the Cisco IOS image (.bin file)

!--- and the HTML subdirectory.

Refer to these sections in this document in order to upgrade the 3750 switch to a Cisco IOS Software release with a web-based device manager:

- 3750 Series Switch Stack IOS Upgrade – Automatic (.tar image)
- 3750 Series Switch Stack IOS Upgrade – Manual (.tar image)

Refer to the 3750 Series Switch Stack IOS Upgrade – Manual (.bin Image) section in order to upgrade the switch with just a Cisco IOS Software release.

DRAM Memory

All models of 3750 series switches have a DRAM configuration of 128 MB. There are no minimum DRAM requirements to consider before you upgrade software on the 3750.

Flash Memory

The internal Flash memory shipped with the 3750 switches are either 16 MB or 32 MB based on the model of the Catalyst 3750 switch. Refer to the Cisco Catalyst 3750 Data Sheet for more information.

There is a limit to the number of images that you can store in Flash. Always check the size, in bytes, of the image in the Downloads – Switches (registered customers only) before you upgrade software. Issue the **dir flash:** command in order to compare the size of this image with the free space in Flash. Here is a sample command output:

```

3750#dir flash:
Directory of flash:/

   2  -rwx  6221372  Mar  1 1993 00:23:06 +00:00  c3750-ipbase-mz.122-25.SED1.bin
   3  -rwx    2105   Mar  1 1993 00:02:16 +00:00  config.text
   4  -rwx  5684228  Mar  1 1993 01:17:34 +00:00  c3750-ipbase-mz.122-25.SEC2.bin
   5  -rwx     5    Mar  1 1993 00:02:16 +00:00  private-config.text
   6  -rwx    856   Mar  1 1993 00:04:40 +00:00  vlan.dat

15998976 bytes total (4087296 bytes free)
3750#

```

If necessary, issue the **delete flash:file_name** command in order to delete a single Cisco IOS image (.bin file). Or issue the **delete /force /recursive flash:dir_name** command in order to delete a directory and all the files in the directory.

Here is a sample command output to delete a Cisco IOS image (.bin file):

```
3750#delete flash:c3750-ipbase-mz.122-25.SED1.bin

Delete filename [c3750-ipbase-mz.122-25.SED1.bin]?

!--- Press Return or Enter.

Delete flash:c3750-ipbase-mz.122-25.SED1.bin? [confirm]

!--- Press Return or Enter.

3750#dir flash:
Directory of flash:/

   3  -rwx          2105   Mar 1 1993 00:02:16 +00:00  config.text
   4  -rwx      5684228   Mar 1 1993 01:17:34 +00:00  c3750-ipbase-mz.122-25.SEC2.bin
   5  -rwx           5    Mar 1 1993 00:02:16 +00:00  private-config.text
   6  -rwx          856   Mar 1 1993 00:04:40 +00:00  vlan.dat

15998976 bytes total (10309120 bytes free)
```

Here is a sample command output to delete a Cisco IOS image with a web-based device manager (directory):

```
3750#dir flash:
Directory of flash:/

   2  -rwx      5684228   Mar 12 1993 08:13:57 +00:00  c3750-ipbase-mz.122-25.SEC2.bin
   3  -rwx          2105   Mar 1 1993 00:02:16 +00:00  config.text
   4  drwx          192   Mar 12 1993 08:11:00 +00:00  c3750-ipbase-mz.122-25.SEB4
   5  -rwx           5    Mar 1 1993 00:02:16 +00:00  private-config.text
   6  -rwx          856   Mar 1 1993 00:04:40 +00:00  vlan.dat
 364 -rwx          105   Mar 12 1993 08:11:00 +00:00  info

15998976 bytes total (3201536 bytes free)
3750#delete /force /recursive flash:c3750-ipbase-mz.122-25.SEB4

Delete filename [c3750-ipbase-mz.122-25.SEB4]?

!--- Press Return or Enter.

3750#dir flash:
Directory of flash:/

   2  -rwx      5684228   Mar 12 1993 08:13:57 +00:00  c3750-ipbase-mz.122-25.SEC
2.bin
   3  -rwx          2105   Mar 1 1993 00:02:16 +00:00  config.text
   5  -rwx           5    Mar 1 1993 00:02:16 +00:00  private-config.text
   6  -rwx          856   Mar 1 1993 00:04:40 +00:00  vlan.dat
 364 -rwx          105   Mar 12 1993 08:11:00 +00:00  info

15998976 bytes total (10308608 bytes free)
```

An upgrade can require you to free up even more space. The requirement depends on how many images you have stored in Flash. You can delete more old images/directory to free up this space.

3750 Series Switch Stack IOS Upgrade – Automatic (.tar image)

In this section, you are presented with the information to configure the features described in this document.

The procedure in this section copies the combined tar file to the switch. You copy the file to the switch from a TFTP server and extract the files. You can download an image file and replace the current image, or you can keep the current image.

Note: For switch stacks, the **archive download-sw** and **archive upload-sw** privileged EXEC commands can only be used through the stack master. Software images downloaded to the stack master are automatically downloaded to the rest of the stack members. Thus, you must be logged on to the master switch to perform this upgrade.

Step-by-Step Instructions

In order to download software, complete these steps:

Step 1

Use the Decide Which Files to Use section of this document in order to identify the type of image and feature set that you want to download.

Step 2

Refer to Software Download – Cisco Catalyst 3750 Software [🔗](#) (registered customers only) and find the image that you want to download.

In order to download older versions of the IP services image or IP base image files for a Catalyst 3750 switch, click **Archived Catalyst 3750 Software**. In order to obtain authorization and to download the cryptographic software files, click **Catalyst 3750 Strong Cryptographic (3DES) Software**.

Note: Cisco IOS Software releases earlier than Cisco IOS Software Release 12.1(19)EA1c include a bootloader upgrade. The bootloader can take up to 1 minute to upgrade the first time that you load the new software. Do not power cycle the switch during the bootloader upgrade.

Step 3

Copy the image to the appropriate TFTP directory on the workstation, and make sure that the TFTP server has the proper configuration.

For more information, refer to Appendix B of the software configuration guide for this release.

Step 4

Log in to the switch through the console port or a Telnet session, and enter enable mode.

Step 5

In order to view the current version, issue the **show version** command.

```
3750#show version
Cisco Internetwork Operating System Software
```

IOS (tm) C3750 Software (C3750-I5-M), Version 12.1(19)EA1d, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2004 by cisco Systems, Inc.
Compiled Mon 05-Apr-04 22:06 by antonino
Image text-base: 0x00003000, data-base: 0x009206D8

ROM: Bootstrap program is C3750 boot loader
BOOTLDR: C3750 Boot Loader (C3750-HBOOT-M) Version 12.1(14)EA1, RELEASE SOFTWARE (fc1)

3750 uptime is 4 days, 19 hours, 43 minutes
System returned to ROM by power-on
System image file is "flash:c3750-i5-mz.121-19.EA1d.bin"

cisco WS-C3750G-12S (PowerPC405) processor (revision A0) with 118776K/12288K bytes of memory.

Processor board ID CAT0732R0JU

Last reset from power-on

Bridging software.

5 Virtual Ethernet/IEEE 802.3 interface(s)

40 Gigabit Ethernet/IEEE 802.3 interface(s)

The password-recovery mechanism is enabled.

512K bytes of flash-simulated non-volatile configuration memory.

Base ethernet MAC Address : 00:0D:BD:5C:16:80

Motherboard assembly number : 73-8307-06

Power supply part number : 341-0048-01

Motherboard serial number : CAT073205SU

Power supply serial number : DTH073004US

Model revision number : A0

Motherboard revision number : A0

Model number : WS-C3750G-12S-E

System serial number : CAT0732R0JU

Top Assembly Part Number : 800-23419-01

Top Assembly Revision Number : A0

Hardware Board Revision Number : 0x06

Switch	Ports	Model	SW Version	SW Image
-----	-----	-----	-----	-----
1	28	WS-C3750G-24TS	12.1(19)EA1d	C3750-I5-M
*	2 12	WS-C3750G-12S	12.1(19)EA1d	C3750-I5-M

Switch 01

Step 6

Issue the **dir flash:** command on the 3750 in order to verify the amount of free memory that you have for the upgrade.

Here is a sample command output:

```
3750#dir flash:
Directory of flash:/

 2  -rwx      1516  Mar 01 1993 00:01:28  vlan.dat
 3  -rwx     4050902  Mar 01 1993 00:03:32  c3750-i5-mz.121-19.EA1d.bin
 4  -rwx      4273  Mar 05 1993 19:22:44  config.text
84  -rwx         5  Mar 05 1993 19:22:44  private-config.text
```

15998976 bytes total (11940352 bytes free)

Step 7

In order to verify connectivity to the TFTP server, ping its IP address.


```
extracting c3750-i5-mz.122-20.SE/html/troubleshooting_Browser.htm (3704 bytes)
extracting c3750-i5-mz.122-20.SE/html/troubleshooting_OS.htm (2851 bytes)
extracting c3750-i5-mz.122-20.SE/html/net_report.htm (21107 bytes)
```

!--- Output suppressed.

```
Installing (renaming): `flash1:update/c3750-i5-mz.122-20.SE' ->
                        `flash1:c3750-i5-mz.122-20.SE'
New software image installed in flash1:c3750-i5-mz.122-20.SE
```

```
Installing (renaming): `flash:update/c3750-i5-mz.122-20.SE' ->
                        `flash:c3750-i5-mz.122-20.SE'
New software image installed in flash:c3750-i5-mz.122-20.SE
```

All software images installed.

*!--- Installation of the image and supporting files is now complete
!--- in the flash of all switches in the stack. In this example, installation
!--- is complete in both switches.*

Step 9

The image copy is complete, and you are ready for the reboot. In order to verify that the current state of the switches is Ready, issue the **show switch detail** command.

Here is an example:

```
3750#show switch detail
```

Switch#	Role	Mac Address	Priority	Current State
1	Slave	000c.30ae.4f00	9	Ready
*2	Master	000d.bd5c.1680	15	Ready

Switch#	Stack Port	Status	Neighbors
	Port 1	Port 2	Port 1 Port 2
1	Ok	Ok	2 2
2	Ok	Ok	1 1

Step 10

In order to verify that the new image is in flash for the stack members, issue the **dir flash:** command and the **dir flash 1:** command. In this example, there are two switch stack members. If the stack configuration includes additional switches in the stack, issue the **dir flash#:** command for each additional switch in the stack.

Issue the **show version** command in order to verify that the old image is still the current operation system image. Issue the **show boot** command in order to verify that the new image is now the image in the BOOT path-list that will load at the next switch reload.

```
3750#dir flash:
Directory of flash:/

 2  -rwx          1516  Mar 01 1993 00:01:28  vlan.dat
 3  -rwx        4050902  Mar 01 1993 00:03:32  c3750-i5-mz.121-19.EA1d.bin
 4  -rwx          4273  Mar 05 1993 19:22:44  config.text
 6  drwx           192  Mar 05 1993 19:40:16  c3750-i5-mz.122-20.SE
```

84 -rwx 5 Mar 05 1993 19:22:44 private-config.text

!--- Notice the "d" in the permissions statement. The "d" indicates a directory.

15998976 bytes total (3491328 bytes free)

3750#**dir flash1:**

Directory of flash1:/

```
  2 -rwx      4050902  Mar 01 1993 00:35:58  c3750-i5-mz.121-19.EA1d.bin
  3 -rwx          1516  Mar 01 1993 00:01:33  vlan.dat
  4 -rwx          4273  Mar 05 1993 19:22:44  config.text
  5 -rwx           5    Mar 05 1993 19:22:44  private-config.text
  7 drwx          192  Mar 05 1993 19:37:40  c3750-i5-mz.122-20.SE
```

15998976 bytes total (3491328 bytes free)

3750#**show version**

Cisco Internetwork Operating System Software
IOS (tm) C3750 Software (C3750-I5-M), Version 12.1(19)EA1d, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2004 by cisco Systems, Inc.
Compiled Mon 05-Apr-04 22:06 by antonino
Image text-base: 0x00003000, data-base: 0x009206D8

ROM: Bootstrap program is C3750 boot loader

BOOTLDR: C3750 Boot Loader (C3750-HBOOT-M) Version 12.1(14)EA1, RELEASE SOFTWARE (fc1)

3750 uptime is 4 days, 19 hours, 43 minutes

System returned to ROM by power-on

System image file is "flash:c3750-i5-mz.121-19.EA1d.bin"

cisco WS-C3750G-12S (PowerPC405) processor (revision A0) with
118776K/12288K bytes of memory.

Processor board ID CAT0732R0JU

Last reset from power-on

Bridging software.

5 Virtual Ethernet/IEEE 802.3 interface(s)

40 Gigabit Ethernet/IEEE 802.3 interface(s)

The password-recovery mechanism is enabled.

512K bytes of flash-simulated non-volatile configuration memory.

Base ethernet MAC Address : 00:0D:BD:5C:16:80

Motherboard assembly number : 73-8307-06

Power supply part number : 341-0048-01

Motherboard serial number : CAT073205SU

Power supply serial number : DTH073004US

Model revision number : A0

Motherboard revision number : A0

Model number : WS-C3750G-12S-E

System serial number : CAT0732R0JU

Top Assembly Part Number : 800-23419-01

Top Assembly Revision Number : A0

Hardware Board Revision Number : 0x06

Switch	Ports	Model	SW Version	SW Image
-----	-----	-----	-----	-----
1	28	WS-C3750G-24TS	12.1(19)EA1d	C3750-I5-M
*	2 12	WS-C3750G-12S	12.1(19)EA1d	C3750-I5-M

Switch 01

*!--- When you issue the show boot command, it now reads the new code revision
!--- that will load at the next reboot.*

```
3750#show boot
BOOT path-list      : flash:c3750-i5-mz.122-20.SE/c3750-i5-mz.122-20.SE.bin
Config file         : flash:/config.text
Private Config file : flash:/private-config.text
Enable Break        : no
Manual Boot         : no
HELPER path-list    :
Auto upgrade        : yes
3750#
3750#
```

Step 11

Issue the **reload** command at the prompt and confirm in order to proceed with the reload. The new code revision should come up and start to run as expected on all the switches in the stack.

Here is sample output from the switch reload:

```
3750#reload
Proceed with reload? [confirm]

4d19h: %SYS-5-RELOAD: Reload requested

Base ethernet MAC Address: 00:0d:bd:5c:16:80

Xmodem file system is available.

The password-recovery mechanism is enabled.

Initializing Flash...

flashfs[0]: 86 files, 4 directories

flashfs[0]: 0 orphaned files, 0 orphaned directories

flashfs[0]: Total bytes: 15998976

flashfs[0]: Bytes used: 12507648

flashfs[0]: Bytes available: 3491328

flashfs[0]: flashfs fsck took 9 seconds.

...done Initializing Flash.

Boot Sector Filesystem (bs) installed, fsid: 3

done.

Loading "flash:c3750-i5-mz.122-20.SE/c3750-i5-mz.122-20.SE.bin"
...@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
File "flash:c3750-i5-mz.122-20.SE/c3750-i5-mz.122-20.SE.bin" uncompressed and installed,
entry point: 0x3000

executing...
```

Restricted Rights Legend

Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraph (c) of the Commercial Computer Software - Restricted Rights clause at FAR sec. 52.227-19 and subparagraph

(c) (1) (ii) of the Rights in Technical Data and Computer Software clause at DFARS sec. 252.227-7013.

cisco Systems, Inc.
170 West Tasman Drive
San Jose, California 95134-1706

Cisco Internetwork Operating System Software
IOS (tm) C3750 Software (C3750-I5-M), Version 12.2(20)SE, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2004 by cisco Systems, Inc.
Compiled Wed 19-May-04 11:52 by yenanh
Image text-base: 0x00003000, data-base: 0x00B53B10

Initializing flashfs...

flashfs[1]: 86 files, 4 directories
flashfs[1]: 0 orphaned files, 0 orphaned directories
flashfs[1]: Total bytes: 15998976
flashfs[1]: Bytes used: 12507648
flashfs[1]: Bytes available: 3491328
flashfs[1]: flashfs fsck took 9 seconds.
flashfs[1]: Initialization complete....done Initializing flashfs.

POST: CPU MIC register Tests : Begin
POST: CPU MIC register Tests : End, Status Passed

POST: PortASIC Memory Tests : Begin
POST: PortASIC Memory Tests : End, Status Passed

POST: CPU MIC PortASIC interface Loopback Tests : Begin
POST: CPU MIC PortASIC interface Loopback Tests : End, Status Passed

POST: PortASIC RingLoopback Tests : Begin
POST: PortASIC RingLoopback Tests : End, Status Passed

Waiting for Stack Master Election (around 20 seconds)...
POST: PortASIC CAM Subsystem Tests : Begin
POST: PortASIC CAM Subsystem Tests : End, Status Passed

POST: PortASIC Stack Port Loopback Tests : Begin
POST: PortASIC Stack Port Loopback Tests : End, Status Passed

POST: PortASIC Port Loopback Tests : Begin
POST: PortASIC Port Loopback Tests : End, Status Passed

Election Complete
Switch 2 booting as Master
Waiting for Port download...Complete

cisco WS-C3750G-12S (PowerPC405) processor (revision A0) with 118784K/12280K bytes of memory.

Processor board ID CAT0732R0JU

Last reset from power-on

Bridging software.

1 Virtual Ethernet/IEEE 802.3 interface(s)

40 Gigabit Ethernet/IEEE 802.3 interface(s)

The password-recovery mechanism is enabled.

512K bytes of flash-simulated non-volatile configuration memory.

Base ethernet MAC Address : 00:0D:BD:5C:16:80

Motherboard assembly number : 73-8307-06

Power supply part number : 341-0048-01

Motherboard serial number : CAT073205SU

```

Power supply serial number      : DTH073004US
Model revision number          : A0
Motherboard revision number    : A0
Model number                   : WS-C3750G-12S-E
System serial number           : CAT0732R0JU
Top Assembly Part Number      : 800-23419-01
Top Assembly Revision Number   : A0
Hardware Board Revision Number : 0x06

```

Switch	Ports	Model	SW Version	SW Image
* 2	12	WS-C3750G-12S	12.2(20)SE	C3750-I5-M

Press RETURN to get started!

```

00:00:57: %STACKMGR-6-SWITCH_ADDED: Switch 1 has been ADDED to the stack
00:00:57: %STACKMGR-6-SWITCH_ADDED: Switch 2 has been ADDED to the stack
00:01:27: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to down
00:01:27: %SPANTREE-5-EXTENDED_SYSID: Extended SysId enabled for type vlan
00:01:30: %SYS-5-CONFIG_I: Configured from memory by console
00:01:30: %STACKMGR-6-SWITCH_READY: Switch 2 is READY
00:01:30: %STACKMGR-6-STACK_LINK_CHANGE: Stack Port 1 Switch 2 has changed to st
3750>
3750>ate UP
00:01:30: %STACKMGR-6-STACK_LINK_CHANGE: Stack Port 2 Switch 2 has changed to state UP
00:01:30: %STACKMGR-6-MASTER_READY: Master Switch 2 is READY
00:01:31: %SYS-5-RESTART: System restarted --
Cisco Internetwork Operating System Software
IOS (tm) C3750 Software (C3750-I5-M), Version 12.2(20)SE, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2004 by cisco Systems, Inc.
Compiled Wed 19-May-04 11:52 by yenanh
00:01:32: %LINK-5-CHANGED: Interface GigabitEthernet2/0/1,
changed state to administratively
down
00:01:32: %LINK-5-CHANGED: Interface Vlan1, changed state to administratively down
00:01:32: %LINK-5-CHANGED: Interface Vlan2, changed state to administratively down
00:01:35: %STACKMGR-6-SWITCH_READY: Switch 1 is READY
00:01:35: %STACKMGR-6-STACK_LINK_CHANGE: Stack Port 1 Switch 1 has changed to state UP
00:01:35: %STACKMGR-6-STACK_LINK_CHANGE: Stack Port 2 Switch 1 has changed to state UP
00:01:25: %STACKMGR-6-SWITCH_ADDED: Switch 1 has been ADDED to the stack (3750-1)
00:01:25: %STACKMGR-6-SWITCH_ADDED: Switch 2 has been ADDED to the stack (3750-1)
00:01:32: %SPANTREE-5-EXTENDED_SYSID: Extended SysId enabled for type vlan (3750-1)
00:01:35: %SYS-5-CONFIG_I: Configured from memory by console (3750-1)
00:01:35: %STACKMGR-6-SWITCH_READY: Switch 2 is READY (3750-1)
00:01:35: %STACKMGR-6-MASTER_READY: Master Switch 2 is READY (3750-1)
00:01:35: %STACKMGR-6-SWITCH_READY: Switch 1 is READY (3750-1)
00:01:36: %SYS-5-RESTART: System restarted -- (3750-1)
Cisco Internetwork Operating System
3750>
3750>Software (3750-1)
IOS (tm) C3750 Software (C3750-I5-M), Version 12.2(20)SE, RELEASE SOFTWARE
(fc1) (3750-1)
Copyright (c) 1986-2004 by cisco Systems, Inc. (3750-1)
Compiled Wed 19-May-04 11:52 by yenanh (3750-1)
00:01:37: %LINK-3-UPDOWN: Interface GigabitEthernet1/0/2, changed state to up
00:01:37: %LINK-3-UPDOWN: Interface GigabitEthernet1/0/3, changed state to up
00:01:37: %LINK-3-UPDOWN: Interface GigabitEthernet1/0/4, changed state to up
00:01:38: %LINK-3-UPDOWN: Interface GigabitEthernet2/0/2, changed state to up
00:01:38: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/2, changed
state to up
00:01:38: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/3, changed
state to up

```

```
00:01:38: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/4, changed
state to up
00:01:39: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet2/0/2, changed
state to up
3750>
```

3750 Series Switch Stack IOS Upgrade – Manual (.tar image)

The previous section of this document explained how to upgrade IOS using the **archive download-sw** command. You can also upgrade the IOS manually switch-by-switch without disconnecting the stack cables. The three major steps in this method are:

1. Copy the .tar image from the TFTP server to the master switch.
2. Extract the .tar image into all the Flash file systems of the switches.
3. Configure the boot variable.

The **archive download-sw** command does all three steps during an automatic IOS upgrade. You can also perform these three steps in the manual IOS upgrade. The step-by-step section shows an example IOS upgrade to upgrade the IOS to Cisco IOS Software Release 12.2(25)SEE1. This example has a switch stack with three switches. Switch 1 is the master switch and switches 2 and 3 are the member switches.

Step-by-Step Instructions

Step 1 – Download the .tar Image

You need to make sure you have sufficient space available in the Flash of the master switch. The master switch should have twice the amount of space of the .tar image file size. This space is needed to store the .tar file as well as to store the content of the .tar file that you extract in step 2. For example, if the .tar image size is 10 Mb, you need to have a minimum of 20 Mb of free space.

```
3750-stack#copy tftp: flash:
Address or name of remote host []? 10.10.10.10
Source filename []? c3750-advipservicesk9-tar.122-25.SEE1.tar
Destination filename [c3750-advipservicesk9-tar.122-25.SEE1.tar]?
Accessing tftp://10.10.10.10/c3750-advipservicesk9-tar.122-25.SEE1.tar...
Loading c3750-advipservicesk9-tar.122-25.SEE1.tar from 10.10.10.10 (via Vlan10
): !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

!--- Output is suppressed.

Step 2 – Extract the .tar Image

Extract the .tar images to all the switches in the Flash file system. The **archive tar /xtract** command creates a directory and extracts the files under the newly created directory.

This is an example of the command syntax:

```
3750-stack#archive tar /xtract <tar file name> <Dir to extract files>
```

Complete these steps:

1. Extract the .tar file into the Flash on switch1.

```
3750-stack#archive tar /xtract c3750-advipservicesk9-tar.122-25.SEE1.tar
flash1:
```

```
extracting c3750-advipservicesk9-mz.122-25.SEE1/html/images/grn_vertlines_bott
.gif (957 bytes)
extracting c3750-advipservicesk9-mz.122-25.SEE1/html/images/red.gif (147 bytes
extracting c3750-advipservicesk9-mz.122-25.SEE1/html/images/print.gif (625 byt
)
```

!--- Output is suppressed.

2. Extract the .tar file into the Flash on switch2.

```
750-stack#archive tar /xtract c3750-advipservicesk9-tar.122-25.SEE1.tar
flash2:
```

```
extracting c3750-advipservicesk9-mz.122-25.SEE1/html/images/grn_vertlines_bott
.gif (957 bytes)
extracting c3750-advipservicesk9-mz.122-25.SEE1/html/images/red.gif (147 bytes
extracting c3750-advipservicesk9-mz.122-25.SEE1/html/images/print.gif (625 byt
)
```

!--- Output is suppressed.

3. Extract the .tar file into the Flash on switch3.

```
3750-stack#archive tar /xtract c3750-advipservicesk9-tar.122-25.SEE1.tar
flash3:
```

```
extracting c3750-advipservicesk9-mz.122-25.SEE1/html/images/grn_vertlines_bott
.gif (957 bytes)
extracting c3750-advipservicesk9-mz.122-25.SEE1/html/images/red.gif (147 bytes)
extracting c3750-advipservicesk9-mz.122-25.SEE1/html/images/print.gif (625 bytes)
```

!--- Output is suppressed.

Step 3 – Configure the Boot Variable

After you extract the .tar files into the Flash, you need to configure the boot variable to point to the new IOS. You need to find the path where the .bin file is extracted.

```
3750-stack#dir
Directory of flash:/

 2  drwx192  Mar 11 1993 00:31:05 +00:00  c3750-advipservicesk9-mz.122-25.SEE1
```

!--- The archive tar /xtract command created this directory.

```
455  -rwx      114  Mar 11 1993 00:31:05 +00:00  info
457  -rwx     9433  Mar 1 1993 01:40:11 +00:00  config.text
458  -rwx     796   Mar 1 1993 00:02:39 +00:00  vlan.dat
459  -rwx       24   Mar 1 1993 01:40:11 +00:00  private-config.text
```

15998976 bytes total (5613056 bytes free)

```
3750-stack#dir flash:c3750-advipservicesk9-mz.122-25.SEE1
```

```
Directory of flash:/c3750-advipservicesk9-mz.122-25.SEE1/
```

```
 3  -rwx     8169055  Mar 11 1993 00:29:52 +00:00  c3750-advipservicesk9-mz.1
22-25.SEE1.bin
 4  drwx      4160   Mar 11 1993 00:30:29 +00:00  html
454  -rwx     709    Mar 11 1993 00:31:05 +00:00  info
```

15998976 bytes total (5613056 bytes free)

```
3750-stack#
```

The **boot system switch all** command is used to change the boot variable.

Note: This **boot system switch all** has been brought down to a second line due to spatial considerations.

```
3750-stack(config)#boot system switch all flash:/c3750-  
advipservicesk9-mz.122-25.SEE1/c3750-advipservicesk9-mz.122-25.SEE1.bin  
3750-stack(config)#exit  
3750-stack#write memory
```

Step 4 – Reload and Verify

Reload the switch and verify that the switch runs the new Cisco IOS software release after the reload:

```
!--- Reload the switch.
```

```
Switch#reload  
Proceed with reload? [confirm]
```

```
!--- Verify the Cisco IOS software release of the switch after the reload.
```

```
3750-stack#show version  
Cisco IOS Software, C3750 Software (C3750-ADVIPSERVICESK9-M), Version 12.2(25)S  
E1, RELEASE SOFTWARE (fc1)  
Copyright (c) 1986-2006 by Cisco Systems, Inc.  
Compiled Mon 22-May-06 08:52 by yenanh  
Image text-base: 0x00003000, data-base: 0x01255B58
```

```
!--- Output is suppressed.
```

Switch	Ports	Model	SW Version	SW Image
-----	-----	-----	-----	-----
* 1	28	WS-C3750G-24PS	12.2(25)SEE1	C3750-ADVIPSERVICESK
2	52	WS-C3750G-48TS	12.2(25)SEE1	C3750-ADVIPSERVICESK
3	26	WS-C3750-24TS	12.2(25)SEE1	C3750-ADVIPSERVICESK

```
!--- Verify the switch master and member state:
```

```
3750-stack#show switch
```

Switch#	Role	Mac Address	Priority	Current State
-----	-----	-----	-----	-----
*1	Master	0015.63f6.b700	5	Ready
2	Member	0015.c6c1.3000	2	Ready
3	Member	000f.f794.3d00	5	Ready

3750 Series Switch Stack IOS Upgrade – Manual (.bin Image)

A 3750 switch stack can be managed either with the web device manager or with the CLI. If you manage the switch with the CLI, you do not need the .tar image. This section explains the IOS upgrade with the .bin image. It is assumed that you have already configured the 3750 switch stack with an IOS image. This section explains how to copy and upgrade the new IOS in the 3750 switch stack.

Note: The commands **archive download-sw** and **archive upload-sw** are applicable only for .tar image files and do not apply to .bin image files.

This example explains the step-by-step procedure to upgrade the IOS to Cisco IOS Software Release 12.2(25)SEE2 on a Catalyst 3750 switch stack. The Catalyst 3750 switch stack has two switches and the IOS image is located at the TFTP server 172.22.1.165. This output shows the stack member and the master in this stack:

```
Switch#show switch

Switch# Role      Mac Address      Priority    Current
-----
 1      Member    0015.63f6.b700   5          Ready
*2      Master    0015.c6c1.3000   10         Ready
```

Step-by-Step Instructions

Step 1 – Download the .bin Image

Refer to [Software Download – Cisco Catalyst 3750 Software](#) (registered customers only) and find the image that you want to download. The Software Download Center for the Catalyst 3750 contains two sets of IOS images for every feature set and versions. One set contains only the IOS image file which has the extension .bin. The other set contains the IOS image plus the web-based device manager which has the extension .tar.

Step 2 – Verify the Available Memory

You can verify the available memory in the Flash file system of both switches individually as this example output shows:

```
Switch#dir flash1:
Directory of flash1:/

 2  -rwx      24   Mar 3 1993 22:02:44 +00:00 private-config.text
 3  -rwx     623744 Jan 1 1970 00:12:28 +00:00 stardust0923
 4  -rwx      796   Mar 1 1993 00:02:55 +00:00 vlan.dat
 5  -rwx     623744 Jan 1 1970 00:32:09 +00:00 diag
 6  -rwx     8169055 Mar 1 1993 00:43:34 +00:00 c3750-advipservicesk9-mz.
22-25.SEE1.bin
 8  -rwx      10192 Mar 3 1993 22:02:44 +00:00 config.text
462 -rwx      114   Mar 1 1993 00:32:19 +00:00 info
367 drwx      192   Mar 1 1993 00:32:19 +00:00 c3750-advipservicesk9-mz.
22-25.SEE1

32514048 bytes total (12754944 bytes free)

Switch#dir flash2:
Directory of flash:/

 2  -rwx     4207104 Jan 1 1970 00:14:06 +00:00 c3750-i9-mz.122-20.SE4
 3  -rwx     623744 Jan 1 1970 00:17:20 +00:00 stardust0923
 4  -rwx     4207104 Jan 1 1970 00:19:44 +00:00 ios
 5  -rwx     623744 Jan 1 1970 00:20:47 +00:00 diag
 6  -rwx     8169055 Mar 21 1993 23:29:36 +00:00 c3750-advipservicesk9-mz.1
```

```

22-25.SEE1.bin
  7 -rwx          796   Mar 1 1993 00:02:49 +00:00  vlan.dat
  8 -rwx           24   Mar 3 1993 22:02:44 +00:00  private-config.text
 10 -rwx        10192   Mar 3 1993 22:02:44 +00:00  config.text
 11 drwx          128   Mar 21 1993 23:25:53 +00:00  c3750-ipservicesk9-mz.122-
25.SEB1

32514048 bytes total (13071360 bytes free)

```

In a Catalyst 3750 switch stack, `flash:` represents the Flash file system of the master switch. In this example, the **dir flash:** command displays the contents of the master switch (Switch 2) which is `flash2:`.

Step 3 – Copy the Images to the Flash File System

Copy the .bin image from the TFTP server to the Flash file system of both switches.

Note: The Automatic Upgrade (`auto-upgrade`) feature only works with .tar images.

```

Switch#copy tftp: flash1:
Address or name of remote host [172.22.1.165]?
Source filename [c3750-advipservicesk9-mz.122-25.SEE2]? c3750-advipservicesk9-
.122-25.SEE2.bin
Destination filename [c3750-advipservicesk9-mz.122-25.SEE2.bin]?
Accessing tftp://172.22.1.165/c3750-advipservicesk9-mz.122-25.SEE2.bin...
Loading c3750-advipservicesk9-mz.122-25.SEE2.bin from 172.22.1.165 (via Vlan1)
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

```

!--- Output is truncated.

```

[OK - 8172194 bytes]

8172194 bytes copied in 203.718 secs (40115 bytes/sec)

```

```

Switch#copy tftp: flash2:
Address or name of remote host [172.22.1.165]?
Source filename [c3750-advipservicesk9-mz.122-25.SEE2.bin]?
Destination filename [c3750-advipservicesk9-mz.122-25.SEE2.bin]?
Accessing tftp://172.22.1.165/c3750-advipservicesk9-mz.122-25.SEE2.bin...
Loading c3750-advipservicesk9-mz.122-25.SEE2.bin from 172.22.1.165 (via Vlan1):
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

```

!--- Output is truncated.

```

[OK - 8172194 bytes]

8172194 bytes copied in 186.655 secs (43782 bytes/sec)

```

Step 4 – Configure the Boot Variable

Configure the boot variable to boot the switch with the newly copied IOS:

```

Switch(config)#boot system switch all flash:/
c3750-advipservicesk9-mz.122-25.SEE2.bin
Switch(config)#exit
Switch#write memory

```

Step 5 – Verify Before the Reload

Verify the boot variable:

```
Switch#show boot
BOOT path-list      : flash:/c3750-advipservicesk9-mz.122-25.SEE2.bin

!--- Master switch.

Config file         : flash:/config.text
Private Config file : flash:/private-config.text
Enable Break        : no
Manual Boot         : no
HELPER path-list    :
Auto upgrade        : yes
-----
Switch 1

!--- Member switch.

-----
BOOT path-list      : flash:/c3750-advipservicesk9-mz.122-25.SEE2.bin
Config file         : flash:/config.text
Private Config file : flash:/private-config.text
Enable Break        : no
Manual Boot         : no
HELPER path-list    :

Auto upgrade        : no
```

Verify that the new IOS file is present in the Flash:

```
Switch#dir flash1:
Directory of flash1:/

   2  -rwx          24   Mar 3 1993 22:02:44 +00:00 private-config.text
   3  -rwx       623744  Jan 1 1970 00:12:28 +00:00 stardust0923
   4  -rwx          796   Mar 1 1993 00:02:48 +00:00 vlan.dat
   5  -rwx       623744  Jan 1 1970 00:32:09 +00:00 diag
   6  -rwx     8169055   Mar 1 1993 00:43:34 +00:00 c3750-advipservicesk9-mz.1
22-25.SEE1.bin
   7  -rwx     8172194   Mar 3 1993 22:31:35 +00:00 c3750-advipservicesk9-mz.1
22-25.SEE2.bin
   8  -rwx          10192  Mar 3 1993 22:02:44 +00:00 config.text
  462 -rwx          114   Mar 1 1993 00:32:19 +00:00 info
  367 drwx          192   Mar 1 1993 00:32:19 +00:00 c3750-advipservicesk9-mz.1
22-25.SEE1

32514048 bytes total (4582400 bytes free)

Switch#dir flash: or dir flash2:
Directory of flash2:/

   2  -rwx       4207104  Jan 1 1970 00:14:06 +00:00 c3750-i9-mz.122-20.SE4
   3  -rwx       623744  Jan 1 1970 00:17:20 +00:00 stardust0923
   4  -rwx       4207104  Jan 1 1970 00:19:44 +00:00 ios
   5  -rwx       623744  Jan 1 1970 00:20:47 +00:00 diag
   6  -rwx     8169055   Mar 21 1993 23:29:36 +00:00 c3750-advipservicesk9-mz.1
22-25.SEE1.bin
   7  -rwx          796   Mar 1 1993 00:02:54 +00:00 vlan.dat
   8  -rwx          24   Mar 3 1993 22:02:44 +00:00 private-config.text
   9  -rwx     8172194   Mar 3 1993 22:42:06 +00:00 c3750-advipservicesk9-mz.1
22-25.SEE2.bin
  10  -rwx       10192   Mar 3 1993 22:02:44 +00:00 config.text
```

```
11 drwx          128 Mar 21 1993 23:25:53 +00:00 c3750-ipservicesk9-mz.122-25.SEB1
```

```
32514048 bytes total (4898816 bytes free)
```

Step 6 – Reload and Verify

Reload the switch and verify that the switch runs the new Cisco IOS software version after the reload:

```
!--- Reload the switch.
```

```
Switch#reload  
Proceed with reload? [confirm]
```

```
!--- Verify the Cisco IOS software version of the switch after the reload.
```

```
Switch#show version  
Cisco IOS Software, C3750 Software (C3750-ADVIPSERVICESK9-M), Version 12.2(25)SE  
E2, RELEASE SOFTWARE (fc1)  
Copyright (c) 1986-2006 by Cisco Systems, Inc.  
Compiled Fri 28-Jul-06 12:55 by yenanh  
Image text-base: 0x00003000, data-base: 0x01256754  
  
ROM: Bootstrap program is C3750 boot loader  
BOOTLDR: C3750 Boot Loader (C3750-HBOOT-M), Version 12.2 [bkeene-flo_dsbu2 100]  
  
Switch uptime is 33 minutes  
System returned to ROM by power-on  
System image file is "flash:/c3750-advipservicesk9-mz.122-25.SEE2.bin"
```

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
<http://www.cisco.com/wwl/export/crypto/tool/stqrg.html>

If you require further assistance please contact us by sending email to export@cisco.com.

```
cisco WS-C3750G-48TS (PowerPC405) processor (revision 01) with 118784K/12280K bytes of memory.  
Processor board ID FOC0941U2SK  
Last reset from power-on  
3 Virtual Ethernet interfaces  
132 Gigabit Ethernet interfaces  
The password-recovery mechanism is enabled.
```

```
512K bytes of flash-simulated non-volatile configuration memory.  
Base ethernet MAC Address      : 00:15:C6:C1:30:00
```

```
!--- Master switch information.
```

```
Motherboard assembly number    : 73-10218-04  
Power supply part number       : 341-0107-01
```

```

Motherboard serial number      : FOC09400W9S
Power supply serial number     : AZS093905HN
Model revision number         : 01
Motherboard revision number    : 02
Model number                   : WS-C3750G-48TS-S
System serial number          : FOC0941U2SK
Top Assembly Part Number      : 800-26857-01
Top Assembly Revision Number   : 06
Version ID                     : V03
Hardware Board Revision Number : 0x03

```

!--- Verify that all the switches run the new Cisco IOS software version:

Switch	Ports	Model	SW Version	SW Image
1	28	WS-C3750G-24PS	12.2(25)SEE2	C3750-ADVIPSERVICESK
* 2	52	WS-C3750G-48TS	12.2(25)SEE2	C3750-ADVIPSERVICESK

Switch 01

!--- Member switch information.

```

-----
Switch Uptime                : 33 minutes
Base ethernet MAC Address    : 00:15:63:F6:B7:00
Motherboard assembly number  : 73-10217-03
Power supply part number     : 341-0108-02
Motherboard serial number    : FOC09382V48
Power supply serial number   : DCA09330W5E
Model revision number        : 01
Motherboard revision number  : 04
Model number                 : WS-C3750G-24PS-E
System serial number         : FOC0939U17V
Top assembly part number     : 800-27482-01
Top assembly revision number  : 01
Version ID                   : V03

```

Configuration register is 0xF

!--- Verify the switch master and member state:

```

Switch#show switch

Switch# Role      Mac Address      Priority    Current
-----
 1      Member      0015.63f6.b700   5          Ready
*2      Master      0015.c6c1.3000  10         Ready

```

Verify

This section provides information you can use to confirm that your configuration works properly.

Certain **show** commands are supported by the Output Interpreter Tool [🔗](#) (registered customers only), which allows you to view an analysis of **show** command output.

- **show switch detail** Verifies that all the switches are ready.
- **show version** Verifies that all switches in the stack do not run to the new code version.

3750#show switch detail

Switch#	Role	Mac Address	Priority	Current State
1	Slave	000c.30ae.4f00	9	Ready
*2	Master	000d.bd5c.1680	15	Ready

Switch#	Stack Port Status		Neighbors	
	Port 1	Port 2	Port 1	Port 2
1	Ok	Ok	2	2
2	Ok	Ok	1	1

!--- The **show version** command now reflects the new code revision, as expected.

3750#show version

Cisco Internetwork Operating System Software
IOS (tm) C3750 Software (C3750-I5-M), Version 12.2(20)SE, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2004 by cisco Systems, Inc.
Compiled Wed 19-May-04 11:52 by yenanh
Image text-base: 0x00003000, data-base: 0x00B53B10

ROM: Bootstrap program is C3750 boot loader
BOOTLDR: C3750 Boot Loader (C3750-HBOOT-M) Version 12.1(14)EA1, RELEASE SOFTWARE (fc1)

3750 uptime is 2 minutes
System returned to ROM by power-on
System image file is "flash:c3750-i5-mz.122-20.SE/c3750-i5-mz.122-20.SE.bin"

cisco WS-C3750G-12S (PowerPC405) processor (revision A0) with 118784K/12280K bytes of memory.

Processor board ID CAT0732R0JU

Last reset from power-on

Bridging software.

5 Virtual Ethernet/IEEE 802.3 interface(s)

40 Gigabit Ethernet/IEEE 802.3 interface(s)

The password-recovery mechanism is enabled.

512K bytes of flash-simulated non-volatile configuration memory.

Base ethernet MAC Address : 00:0D:BD:5C:16:80

Motherboard assembly number : 73-8307-06

Power supply part number : 341-0048-01

Motherboard serial number : CAT073205SU

Power supply serial number : DTH073004US

Model revision number : A0

Motherboard revision number : A0

Model number : WS-C3750G-12S-E

System serial number : CAT0732R0JU

Top Assembly Part Number : 800-23419-01

Top Assembly Revision Number : A0

Hardware Board Revision Number : 0x06

Switch	Ports	Model	SW Version	SW Image
1	28	WS-C3750G-24TS	12.2(20)SE	C3750-I5-M
* 2	12	WS-C3750G-12S	12.2(20)SE	C3750-I5-M

Switch 01

Switch Uptime : 2 minutes
Base ethernet MAC Address : 00:0C:30:AE:4F:00

```
Motherboard assembly number      : 73-7058-07
Power supply part number         : 341-0045-01
Motherboard serial number       : CSJ0708020N
Power supply serial number      : LIT07050027
Model revision number           : 01
Motherboard revision number     : 03
Model number                     : WS-C3750G-24TS-E
System serial number            : CSJ0711U03G
```

Configuration register is 0xF

Troubleshoot

This section provides information you can use to troubleshoot your configuration.

Image Transfer from TFTP Server Fails or Corrupted IOS image

If you find that an image transfer from the TFTP server fails continuously, refer to Common Problems in Installing Images Using TFTP or an RCP Server. This document provides solutions to known issues with the TFTP server.

You Receive the Error_Bad_Mzip Error Message

You see this error when the Cisco IOS image is corrupt or a .tar file uploads through an Xmodem. In order to resolve the issue, complete these steps:

1. Upload the .bin file to the switch through the Xmodem.
2. Set the boot path to the correct file name.
3. Reload the switch.
4. Check that the image file size is the correct one.

If the image file size is not correct, try to download the image file again.

Refer to these documents in order to check the recovery procedure:

- *Step-by-Step Recovery Procedure* section of Recovering Catalyst 2950, 2955, and 3550 Series Switches from a Corrupted or Missing Image
- *Recovering from a Software Failure* section of Release Notes for the Catalyst 3750, 3560, and 2970 Switches, Cisco IOS Release 12.2(25)SEB and Later

%Error opening flash:update/info (No such file or directory)

The switch reports this error message during the software upgrade:

```
Stack_Switch1#archive download-sw
tftp://1.1.1.2/c3750-advipservicesk9-tar.122-25.SEE1.tar
Could not buffer tarfile...using multiple downloads
examining image...
%Error opening tftp://1.1.1.2/c3750-advipservicesk9-tar.122-25.SEE1.tar (Timed out)
%Error opening flash:update/info (No such file or directory)
ERROR: Image is not a valid IOS image archive
```

Complete these steps to identify and resolve the issue:

1. Make sure you are able to ping the TFTP server IP address from the switch.
2. Verify your TFTP server is working and if possible, try a different TFTP server.

3. Remove if you have any old information directory from the Flash.
4. If the error message still appears, format the Flash and reload the switch. After you format, the switch might boot into ROMMON mode. If the switch boots into ROMMON mode, then recover the switch using Xmodem.

Switches in the Stack do not Boot the New Image (Version Mismatch)

After the IOS upgrade, any one or more of the switches do not boot with the new images. Or, when you add a switch to the existing stack and the newly added switch has a different Cisco IOS software release than the existing switch stack, the new switch is unusable. The 3750 switch stack has a feature called **auto-upgrade** which is enabled by default. This feature enables the switch stack to automatically upgrade the IOS on the newly added switch. Sometimes this auto-upgrade fails to upgrade the IOS of the newly added switch. You see this message sequence when you add the switch to the existing stack.

```

1w2d: %IMAGEMGR-6-AUTO_COPY_SW_INITIATED: Auto-copy-software process initiated
for switch number(s) 3
1w2d: %IMAGEMGR-6-AUTO_COPY_SW:
1w2d: %IMAGEMGR-6-AUTO_COPY_SW: Searching for stack member to act
1w2d: %IMAGEMGR-6-AUTO_COPY_SW: as software donor...
1w2d: %IMAGEMGR-6-AUTO_COPY_SW: Found donor (system #1) for
1w2d: %IMAGEMGR-6-AUTO_COPY_SW: member(s) 3
1w2d: %IMAGEMGR-6-AUTO_COPY_SW: System software to be uploaded:
1w2d: %IMAGEMGR-6-AUTO_COPY_SW: System Type:           0x00000000
1w2d: %IMAGEMGR-6-AUTO_COPY_SW: Warning: Unable to determine image running
1w2d: %IMAGEMGR-6-AUTO_COPY_SW: Software could not be copied to
1w2d: %IMAGEMGR-6-AUTO_COPY_SW: system(s) 3
1w2d: %IMAGEMGR-6-AUTO_COPY_SW: Software was not copied
1w2d: %IMAGEMGR-6-AUTO_ADVISE_SW_INITIATED: Auto-advise-software process initiat
ed for switch number(s) 3
1w2d: %IMAGEMGR-6-AUTO_ADVISE_SW:
1w2d: %IMAGEMGR-6-AUTO_ADVISE_SW:
1w2d: %IMAGEMGR-6-AUTO_ADVISE_SW: Systems with incompatible software
1w2d: %IMAGEMGR-6-AUTO_ADVISE_SW: have been added to the stack. The
1w2d: %IMAGEMGR-6-AUTO_ADVISE_SW: software running on all of the stack
1w2d: %IMAGEMGR-6-AUTO_ADVISE_SW: members has been scanned, and it has
1w2d: %IMAGEMGR-6-AUTO_ADVISE_SW: been determined that the stack can be
1w2d: %IMAGEMGR-6-AUTO_ADVISE_SW: repaired by issuing the following
1w2d: %IMAGEMGR-6-AUTO_ADVISE_SW: command(s):
1w2d: %IMAGEMGR-6-AUTO_ADVISE_SW:
1w2d: %IMAGEMGR-6-AUTO_ADVISE_SW:         archive copy-sw /force-reload /overwrite /
dest 3 1
1w2d: %IMAGEMGR-6-AUTO_ADVISE_SW:

```

3750-stack#**show switch**

Switch#	Role	Mac Address	Priority	Current State
*1	Master	0015.63f6.b700	5	Ready
2	Member	0015.c6c1.3000	2	Ready
3	Member	000f.f794.3d00	5	Version Mismatch

Note: The auto-upgrade feature must be enabled to upgrade the switch in version-mismatch (VM) mode. By default, auto-upgrade is enabled. You can check the status of auto-upgrade by using the **show boot** privileged EXEC command and by checking the auto upgrade line in the display. You can disable auto-upgrade by using the **no boot auto-copy-sw** global configuration command on the stack master. Refer to Understanding Auto-Upgrade and Auto-Advise for more information.

There are three different methods available to solve the version mismatch problem:

- Method 1

- Method 2
- Method 3

Method 1 – .tar Image

Upgrade the member switch that has an incompatible software image using the **archive copy-sw** privileged EXEC command. This command copies the software image from an existing stack member to the one with the incompatible software. The affected switch automatically reloads and joins the stack as a fully functioning member.

This output shows the syntax of the **archive copy-sw** command:

```
3750_Stack#archive copy-sw ?

/destination-system  specify destination system to receive software
/force-reload       Unconditionally reload system after successful sw
                    upgrade
/leave-old-sw       Leave old sw installed after successful sw upgrade
/no-set-boot        do not update BOOT setting on systems after installing
                    sw
/overwrite          OK to overwrite an existing image
/reload             Reload system (if no unsaved config changes) after
                    successful sw upgrade
/safe               Always load before deleting old version
1                   copy software from system 1
2                   copy software from system 2
3                   copy software from system 3
```

- For the **/destination-system** *destination-stack-member-number*, specify the number of the stack member to which the source that runs the image file needs to be copied. If you do not specify the stack member number, the running image file is copied to all stack members by default.
- Specify **/force-reload** to unconditionally force a system reload after the successful download of the software image. If you do not want to use **/force-reload**, reset the updated stack member manually using **reload slot switch_member_number** to put this configuration change into effect.
- For the *source-stack-member-number*, specify the number of the stack member from which to copy the running image file. The stack member number range is 1 to 9.
- If you receive an oversubscribe syslog message during reload, then issue the **archive copy-sw /overwrite /destination-system** command to overwrite the software image in the Flash memory with the downloaded one.

This is an example of the **archive copy-sw** command:

1. This **archive copy-sw** command copies the current running IOS image from switch 1 to switch 3 on the 3750 switch stack.

```
archive copy-sw /overwrite /destination-system 3 1
```

2. Reload the switch member 3.

```
reload slot 3
```

Method 2 – .tar Image

You can use this method if you use the device manager to manage the switch stack. Extract the .tar image into the Flash file system of the newly added switch. It is assumed that you already have the .tar image on the switch. If it is not available, you can download from the Software Download – Cisco Catalyst 3750 Software [☞](#) (registered customers only) page and copy to the switch using TFTP.

```
3750-stack#show switch
```

Switch#	Role	Mac Address	Priority	Current State
*1	Master	0015.63f6.b700	5	Ready
2	Member	0015.c6c1.3000	2	Ready
3	Member	000f.f794.3d00	5	Version Mismatch

```
!--- Switch 3 is displayed as a version mismatch.
!--- You need to extract the .tar image to flash3:
```

```
3750-stack#archive tar /xtract c3750-advipservicesk9-tar.122-25.SEE1.tar
flash3:
```

```
extracting c3750-advipservicesk9-mz.122-25.SEE1/html/images/grn_vertlines_bott
.gif (957 bytes)
extracting c3750-advipservicesk9-mz.122-25.SEE1/html/images/red.gif (147 bytes
extracting c3750-advipservicesk9-mz.122-25.SEE1/html/images/print.gif (625 bytes
)
```

```
!--- Output is suppressed.
```

Configure the boot variable on the new switch. This step is not mandatory. But if you disconnect this switch out of the stack in the future, the switch might not boot the correct IOS.

Note: The **boot system switch 3 flash:** command has been brought down to a second line due to spatial considerations.

```
3750-stack#configure terminal
3750-stack(config)#boot system switch 3 flash:/c3750-advipservicesk9-mz.
122-25.SEE1/c3750-advipservicesk9-mz.122-25.SEE1.bin
3750-stack(config)#exit
3750-stack#write memory
```

Reload the switch member 3.

```
3750-stack#reload slot 3
```

Method 3 – .bin Image

Copy the .bin file from the master switch to the newly added switch, configure the boot variable, and reload the switch.

```
3750-stack#show switch
```

Switch#	Role	Mac Address	Priority	Current State
*1	Master	0015.63f6.b700	5	Ready
2	Member	0015.c6c1.3000	2	Ready
3	Member	000f.f794.3d00	5	Version Mismatch

```
!--- Switch 3 is displayed as a version mismatch.
!--- You need to copy the .bin image to flash3:
```

```
3750-stack#copy c3750-advipservicesk9-mz.122-25.SEE1.bin flash3:
3750-stack#configure terminal
```


This option is supported only from Cisco IOS release 12.2(35) SE or later.

Related Information

- **Recovery From Corrupt or Missing Software Image on Cisco Catalyst 2900XL and 3500XL Series Switches**
 - **Upgrading Software Images on Catalyst 2950 and 2955 Series Switches Using the Command Line Interface**
 - **Upgrading Software in Catalyst 2900XL and 3500XL Switches Using the Command Line Interface**
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