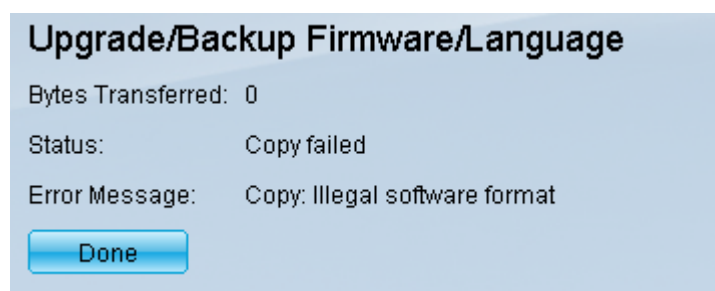
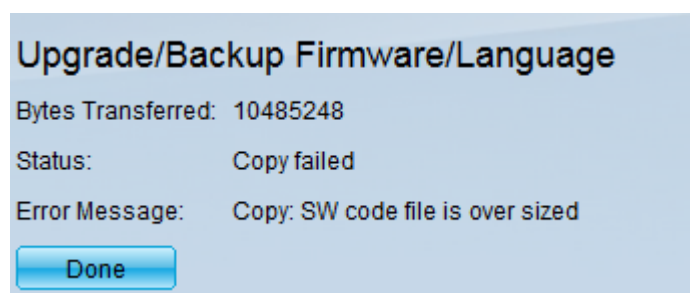


# Firmware Upgrade Troubleshooting on 300 and 500 Series Managed Switches

## Objective

Firmware is a combination of software and hardware that has program code and data stored on it. Upgrading the firmware on your device can provide enhanced security, new features, bug fixes, and performance upgrades.

**Note:** Users may encounter the error message, “SW code file is over sized” or “Illegal software format” when attempting to upgrade the device to the latest version from a version prior to 1.3.5.



In order to troubleshoot this error, you must upgrade to an intermediary firmware and upgrade to the latest boot code before upgrading to the latest firmware. Follow the steps outlined in this document for detailed instructions.

A related article on troubleshooting firmware upgrades can be accessed [here](#).

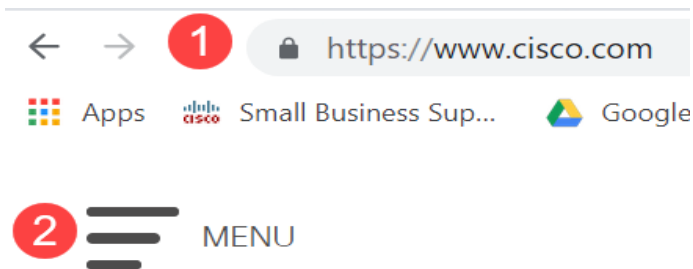
The objective of this document is to show you how to upgrade the firmware on 300 and 500 Series Managed Switches, and how to troubleshoot the error messages.

## Applicable Devices

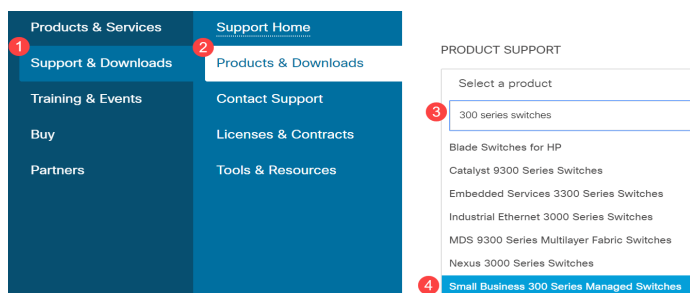
- SF/SG 500 Series Managed Switches
- SF/SG 300 Series Managed Switches

In order to upgrade your device you need to download a file, often referred to as an image, to your computer, and then transfer it to the device.

Step 1. Go to the [Cisco Website](#) and click the **Menu** tab.



Step 2. Select **Support & Downloads > Products & Downloads**. Enter the name of the series that needs an upgrade. A drop-down menu should appear. Scroll down and choose the series and then the specific model you own.



Before upgrading to the latest version from a version prior to 1.3.5, you first need to upgrade the device image to image version 1.3.5 or 1.3.7 and the latest boot file (1.4.0.x). After the device is upgraded to 1.3.5/1.3.7 and to the latest boot file (1.4.0.x), you can upgrade the device to version 1.4.

If you currently are upgrading from 1.3.5 or a newer version, you should be able to skip to the last section of this article by clicking [here](#).


Step 3. To find the different versions available, click **Expand All**.



Step 4. Use the scroll tab on the right side of the box. Click the **caret** symbol on the right if you need to expand a list. Once the list is expanded you can scroll through the available firmware versions.



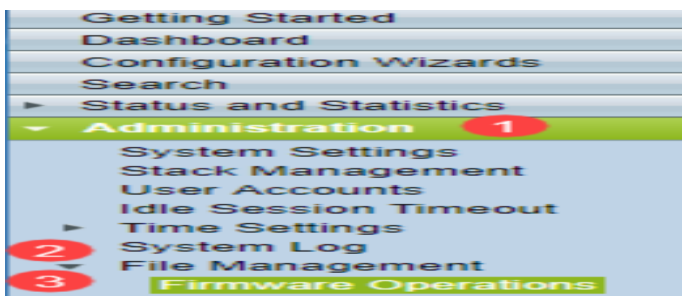
Step 5. Click on the **Download** icon. Take note of the name of the file and where this is saved. The default location is the Downloads folder on your computer.

Release Date	Size	
26-Apr-2019	7.14 MB	

Step 6. If the file is a zip file, it will need to be extracted before the upgrade will work. If you do not know how to extract zip files, click [here](#) for details.

## Upgrading to an Intermediary Firmware

Step 1. Log in to the web configuration utility and choose **Administration > File Management > Firmware Operations**. Depending on your current version, **Upgrade/Backup Firmware/Language** may be the third folder to open.



Step 2. The *Upgrade/Backup Firmware/Language* page opens.

Step 3. Click the **via HTTP/HTTPS** radio button in the *Transfer Method* field.

Step 4. Click the **Upgrade** radio button in the *Save Action* field.

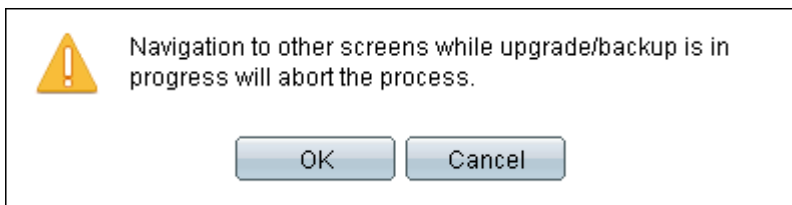
Step 5. Click the **Firmware Image** radio button in the *File Type* field.

Step 6. In the *File Name* field, enter a file path or click **Browse...** to select the 1.3.5/1.3.7 firmware file that you downloaded from the [Software page](#).

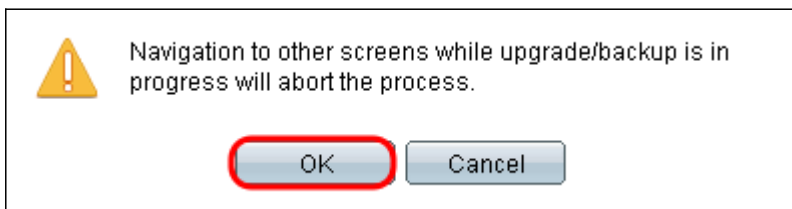
**Note:** The firmware file is an a *.ros* file type and can be found in the zip file that you downloaded.

Step 7. Click **Apply**.

A warning window appears:



Step 8. Click **OK**.



A progress bar appears for several minutes.

Step 9. After the transfer completes, the progress bar disappears. Statistics and any errors from the transfer appear. If the transfer was successful, click the **active image** hyperlink, or navigate to **Administration > File Management > Active Image**.

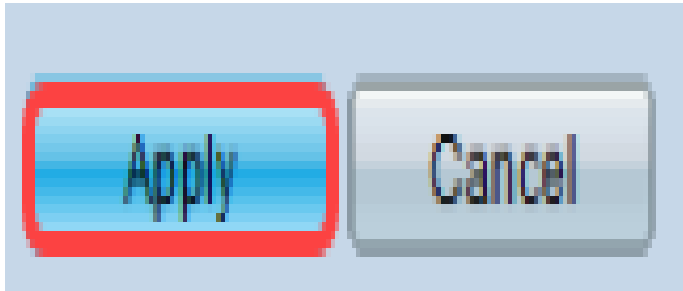
If the HTTP transfer fails, you may need to use a TFTP server. For instructions on how to use a TFTP server, click [here](#).

Step 10. From the *Active Image After Reboot* drop-down list, select the updated firmware version.

**Active Image**

Active Image:	Image 1
Active Image Version Number:	1.2.7.76
Active Image After Reboot:	1.3.7.18
Active Image Version Number After Reboot:	1.2.7.76 1.3.7.18

Step 11. Click **Apply**.



A success message appears and the *Active Image Version Number After Reboot* field is updated.

**Active Image**

Success.

Active Image:	Image 1
Active Image Version Number:	1.2.7.76
Active Image After Reboot:	1.3.7.18
Active Image Version Number After Reboot:	1.3.7.18

Step 12. Reboot the switch so that the firmware upgrade will take effect. Navigate to **Administration > Reboot**, and then click the **Reboot** button.



**Note:** You can also power cycle the switch to reboot by disconnecting and reconnecting the power cord behind the switch.

Step 13. (Optional) Log in to the web configuration utility and choose **Status and Statistics > System Summary** to view the *Software Information* in order to confirm the firmware version has upgraded.

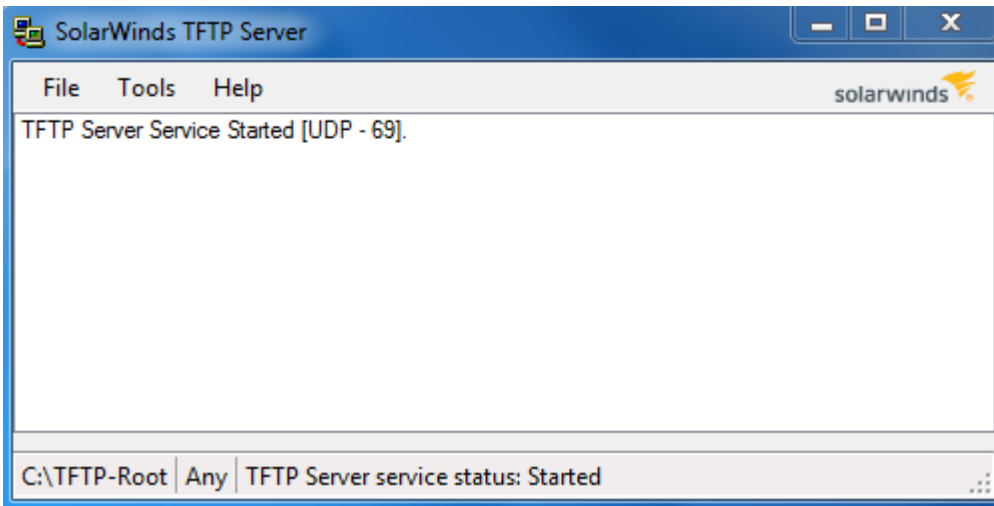
Software Information	
Firmware Version (Active Image):	1.3.7.18
Firmware MD5 Checksum (Active Image):	595c976a2f097c197111df59ceec078d9
Firmware Version (Non-active):	1.2.7.76
Firmware MD5 Checksum (Non-active):	87b31e58cc35454b0fec477342613c7e
Boot Version:	1.2.0.12
Boot MD5 Checksum:	4275bacbcf4222e4f519a3271d8564bd
Locale:	en-US
Language Version:	1.3.7.18
Language MD5 Checksum:	N/A

## Upgrading to the Latest Boot Code via TFTP

To upgrade the Boot Code you must use the TFTP transfer method. In order to use TFTP, the PC needs to have a TFTP server running on it. A free TFTP server can be downloaded from: <http://www.solarwinds.com/downloads/index.aspx>

**Note:** The following steps assume you are using SolarWinds TFTP Server. If you would like a different explanation on using a TFTP server, click [here](#).

Step 1. Open the SolarWinds TFTP Server application. A message will appear indicating that the TFTP server has started.

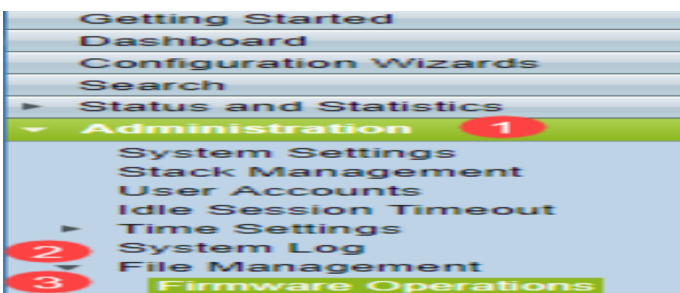


**Note:** If you are using Windows Operating System, make sure TFTP or the Solartroubleshooting-additional-detailswinds TFTP application is allowed for INBOUND connections on your Windows firewall. Otherwise the TFTP transfer will time-out (i.e. fail).

Step 2. Place the latest Boot Code (.rfb) file in the TFTP Root directory (C:\TFTP-Root).

**Note:** The Boot Code file is an RFB file type and can be found in the zip file that you downloaded.

Step 3. Log in to the web configuration utility and choose **Administration > File Management > Firmware Operations**. Depending on your current version, **Upgrade/Backup Firmware/Language** may be the third folder to open.



Step 4. The *Upgrade/Backup Firmware/Language* page opens.

Step 5. Click the **via TFTP** radio button in the *Transfer Method* field.

**Upgrade/Backup Firmware/Language**

Transfer Method:  **via TFTP**  
 via HTTP/HTTPS  
 via SCP (Over SSH)

---

Save Action:  Upgrade  
 Backup

File Type:  Firmware Image  
 Boot Code  
 Language File

TFTP Server Definition:  By IP address  By name

IP Version:  Version 6  Version 4

IPv6 Address Type:  Link Local  Global

Link Local Interface:

✱ TFTP Server IP Address/Name:

✱ Source File Name:  (43/160 Characters Used)

The firmware is upgraded to the inactive image file. You must activate the firmware using the "Active Image" page.

Step 6. Click the **Upgrade** radio button in the *Save Action* field.

## Upgrade/Backup Firmware/Language

Transfer Method:  via TFTP  
 via HTTP/HTTPS  
 via SCP (Over SSH)

Save Action:  Upgrade  
 Backup

File Type:  Firmware Image  
 Boot Code  
 Language File

TFTP Server Definition:  By IP address  By name

IP Version:  Version 6  Version 4

IPv6 Address Type:  Link Local  Global

Link Local Interface:

✱ TFTP Server IP Address/Name:

✱ Source File Name:  (43/160 Characters Used)

The firmware is upgraded to the inactive image file. You must activate the firmware using the "Active Image" page.

Apply

Cancel

Step 7. Click the **Boot Code** radio button in the *File Type* field.

## Upgrade/Backup Firmware/Language

Transfer Method:  via TFTP  
 via HTTP/HTTPS  
 via SCP (Over SSH)

Save Action:  Upgrade  
 Backup

File Type:  Firmware Image  
 Boot Code  
 Language File

TFTP Server Definition:  By IP address  By name

IP Version:  Version 6  Version 4

IPv6 Address Type:  Link Local  Global

Link Local Interface:

✱ TFTP Server IP Address/Name:

✱ Source File Name:  (43/160 Characters Used)

The firmware is upgraded to the inactive image file. You must activate the firmware using the "Active Image" page.

Apply

Cancel

Step 8. In the *TFTP Server IP Address/Name* field, enter the IP address of the computer that

opened the SolarWinds TFTP Server application in Step 1.

### Upgrade/Backup Firmware/Language

Transfer Method:  via TFTP  
 via HTTP/HTTPS  
 via SCP (Over SSH)

---

Save Action:  Upgrade  
 Backup

File Type:  Firmware Image  
 Boot Code  
 Language File

TFTP Server Definition:  By IP address  By name

IP Version:  Version 6  Version 4

IPv6 Address Type:  Link Local  Global

Link Local Interface:

✱ TFTP Server IP Address/Name:

✱ Source File Name:  (43/160 Characters Used)

The firmware is upgraded to the inactive image file. You must activate the firmware using the "Active Image" page.

Step 9. Enter the filename of the Boot Code (.rfb) file in the *Source File Name* field. For example, if the exact path to the file is C:\TFTP-Root\sx500\_boot-14002.rfb, then enter **sx500\_boot-14002.rfb** into the field.

## Upgrade/Backup Firmware/Language


Transfer Method:	<input checked="" type="radio"/> via TFTP <input type="radio"/> via HTTP/HTTPS <input type="radio"/> via SCP (Over SSH)
Save Action:	<input checked="" type="radio"/> Upgrade <input type="radio"/> Backup
File Type:	<input type="radio"/> Firmware Image <input checked="" type="radio"/> Boot Code <input type="radio"/> Language File
TFTP Server Definition:	<input checked="" type="radio"/> By IP address <input type="radio"/> By name
IP Version:	<input type="radio"/> Version 6 <input checked="" type="radio"/> Version 4
IPv6 Address Type:	<input checked="" type="radio"/> Link Local <input type="radio"/> Global
Link Local Interface:	VLAN 1
TFTP Server IP Address/Name:	192.168.1.104
Source File Name:	sx500_boot-14002.rfb (43/160 Characters Used)

The firmware is upgraded to the inactive image file. You must activate the firmware using the "Active Image" page.

**Note:** The source file must be in the TFTP Root directory in order for the TFTP transfer to work.


Step 10. Click **Apply**.

A warning window appears.



Navigation to other screens while upgrade/backup is in progress will abort the process.

Step 11. Click **OK**.




Navigation to other screens while upgrade/backup is in progress will abort the process.

A progress bar appears for several minutes.

After the transfer completes, the progress bar disappears. Statistics and any errors from the transfer appear.

**Upgrade/Backup Firmware/Language**

 The file upgrade will take effect only after the switch has been rebooted.

Bytes Transferred: 524304

Status: Copy finished

Error Message:

[Done](#)

Step 12. Click **Done**.



Step 13. Reboot the switch so that the Boot upgrade will take effect. Navigate to **Administration > Reboot**, and then click the **Reboot** button.

**Note:** You can also power cycle the switch to reboot by disconnecting and reconnecting the power cord behind the switch.

Step 14. (Optional) Log into the web configuration utility and choose **Status and Statistics > System Summary** to view the *Software Information* in order to confirm the Boot Version has upgraded.

Software Information	
Firmware Version (Active Image):	1.3.7.18
Firmware MD5 Checksum (Active Image):	595c976a2f097c197111df59cec078d9
Firmware Version (Non-active):	not available
Firmware MD5 Checksum (Non-active):	
Boot Version:	1.4.0.02
Boot MD5 Checksum:	accbdaec117726d0e5149babc5b2a0b0
Locale:	en-US
Language Version:	1.3.7.18
Language MD5 Checksum:	N/A

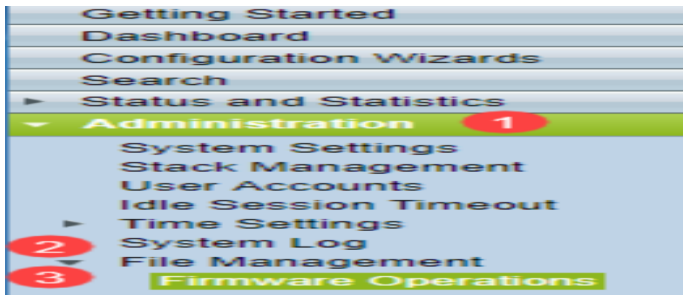
Step 15. Proceed to the next section, *Upgrading from Version 1.3.5 or Newer*, in order to upgrade to the latest version.

## Upgrading from Version 1.3.5 or Newer

**Note:** Ensure you have upgraded to the latest boot file before proceeding with this section. Refer to the previous section for more information.

Step 1. Log in to the web configuration utility and choose **Administration > File Management > Firmware Operations**. Depending on your current version, **Upgrade/Backup Firmware/Language** may be the third folder to open.





Step 2. The *Upgrade/Backup Firmware/Language* page opens.

Step 3. Click the **via HTTP/HTTPS** radio button in the *Transfer Method* field.

Step 4. Click the **Upgrade** radio button in the *Save Action* field.

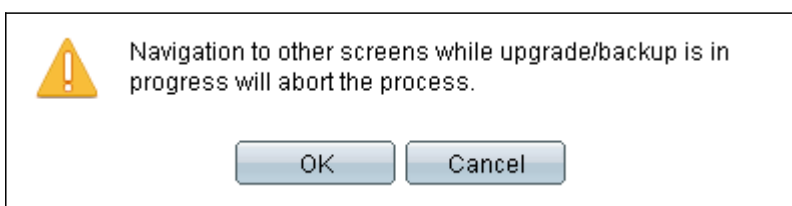
Step 5. Click the **Firmware Image** radio button in the *File Type* field.

Step 6. In the *File Name* field, enter a file path or click **Browse...** to select the latest firmware file that you downloaded from the [Software page](#).

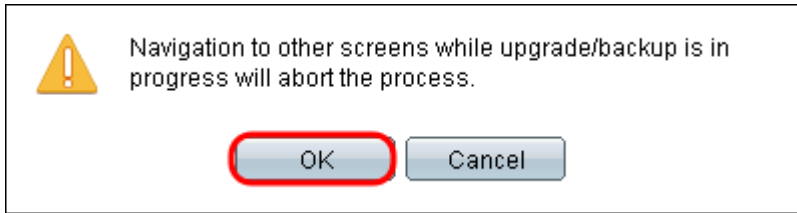
**Note:** The firmware file is an .ros file type and can be found in the zip file that you downloaded.

Step 7. Click **Apply**.

A warning window appears.



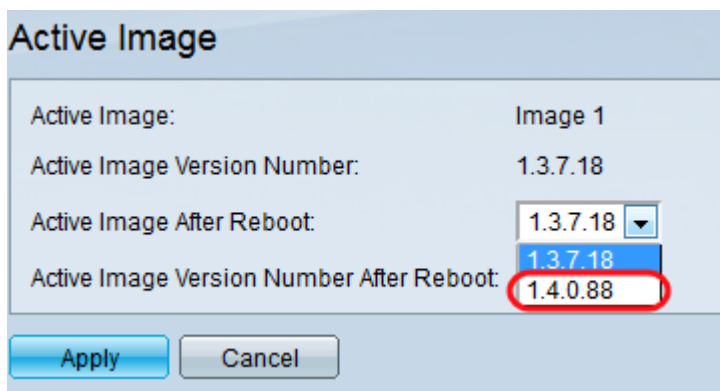
Step 8. Click **OK**.



A progress bar appears for several minutes.

Step 9. After the transfer completes, the progress bar disappears. Statistics and any errors from the transfer appear. If the transfer was successful, click the **active image** hyperlink to open the *Active Image* page.

Step 10. From the *Active Image After Reboot* drop-down list, select the latest firmware version.



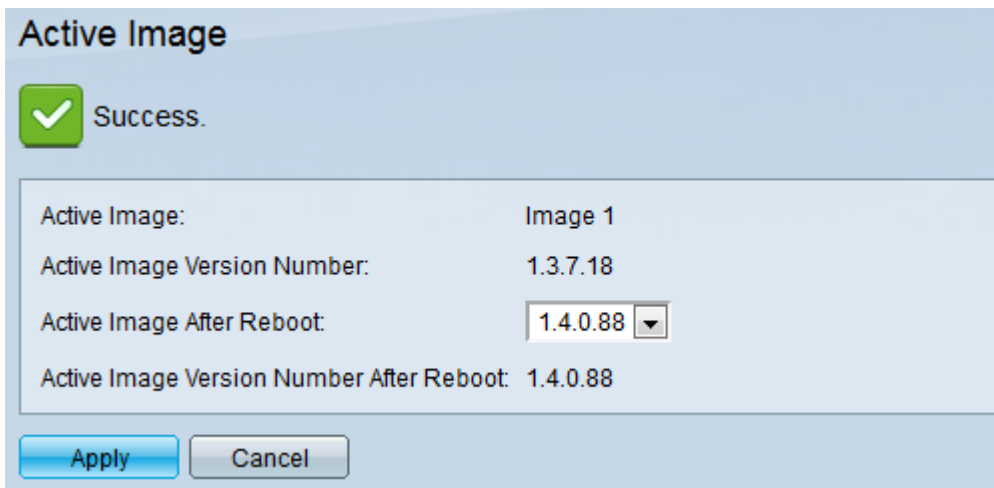
**Active Image**

Active Image:	Image 1
Active Image Version Number:	1.3.7.18
Active Image After Reboot:	1.3.7.18 ▼
Active Image Version Number After Reboot:	1.3.7.18 1.4.0.88

Apply Cancel

Step 11. Click **Apply**.

A success message appears and the *Active Image Version Number After Reboot* field is updated.



Step 12. Reboot the switch so that the firmware upgrade will take effect. Navigate to **Administration > Reboot**, and then click the **Reboot** button.

**Note:** You can also power cycle the switch to reboot by disconnecting and reconnecting the power cord behind the switch.

Step 13. (Optional) Log in to the web configuration utility and choose **Status and Statistics > System Summary** to view the *Software Information* in order to confirm the firmware version has upgraded.

## Software Information

Firmware Version (Active Image):	1.4.0.88
Firmware MD5 Checksum (Active Image):	40a07847eb11a806694ee46c790d483a
Firmware Version (Non-active):	1.3.7.18
Firmware MD5 Checksum (Non-active):	595c976a2f097c197111df59cec078d9
Boot Version:	1.4.0.02
Boot MD5 Checksum:	accbdaec117726d0e5149babc5b2a0b0
Locale:	en-US
Language Version:	1.4.0.88
Language MD5 Checksum:	N/A