



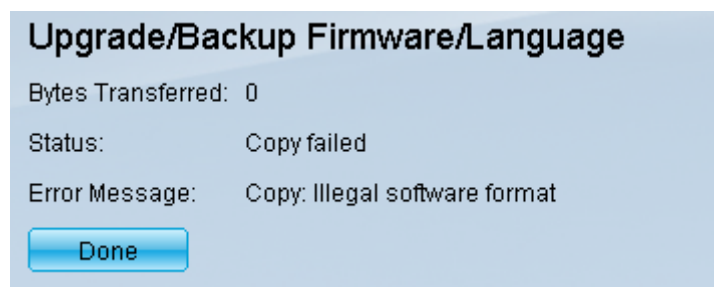
Article ID: 5007

Firmware Upgrade Troubleshooting on 300/500 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.

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

Software Download URL

- [500 Series Managed Switches](#)

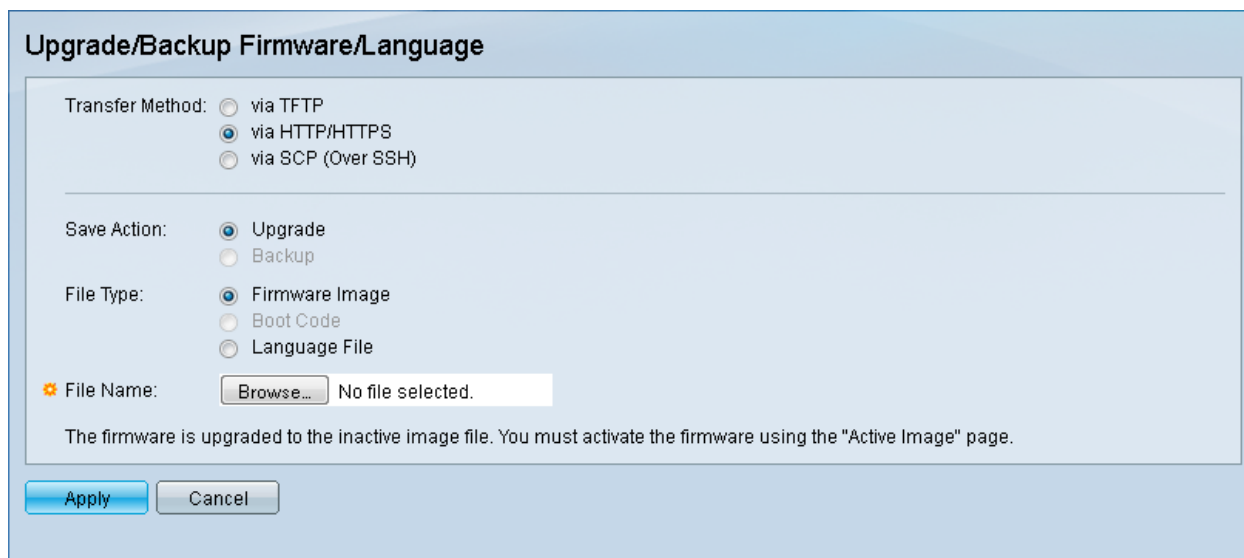
Note: Make sure to download the latest firmware release. If you are upgrading from a version prior to 1.3.5, make sure to download 1.3.5 or 1.3.7 as well.

Upgrading from Versions Earlier than 1.3.5.x

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.

Upgrading to an Intermediary Firmware

Step 1. Log in to the web configuration utility and choose **Administration > File Management > Upgrade/Backup Firmware/Language**. The *Upgrade/Backup Firmware/Language* page opens:



The screenshot shows the 'Upgrade/Backup Firmware/Language' configuration page. It features several radio button options for 'Transfer Method', 'Save Action', and 'File Type'. The 'File Name' field is currently empty, with a 'Browse...' button and the text 'No file selected.' Below the form, there are 'Apply' and 'Cancel' buttons. A note at the bottom of the form states: 'The firmware is upgraded to the inactive image file. You must activate the firmware using the "Active Image" page.'

Step 2. Click the **via HTTP/HTTPS** 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

File Name: No file selected.

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

Step 3. 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

File Name: No file selected.

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

Step 4. Click the **Firmware Image** 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

File Name: No file selected.

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

Step 5. 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](#).

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

File Name: No file selected.

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

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

Step 6. Click **Apply**.

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


File Name: sx500_fw-13558.ros

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

A warning window appears:

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

Step 7. Click **OK**.

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

A progress bar appears for several minutes:


Upgrade/Backup Firmware/Language

Bytes Transferred: 196608

Status: Download in progress

Error Message:

Processing Data

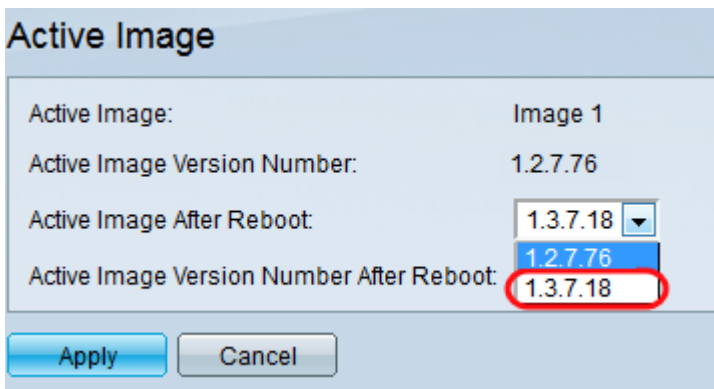


Step 8. After the transfer completes, the progress bar disappears. Statistics and any errors from the transfer appear. If the transfer was successful, click the **active image** hyperlink, or navigate to **Administration > File Management > Active Image**.



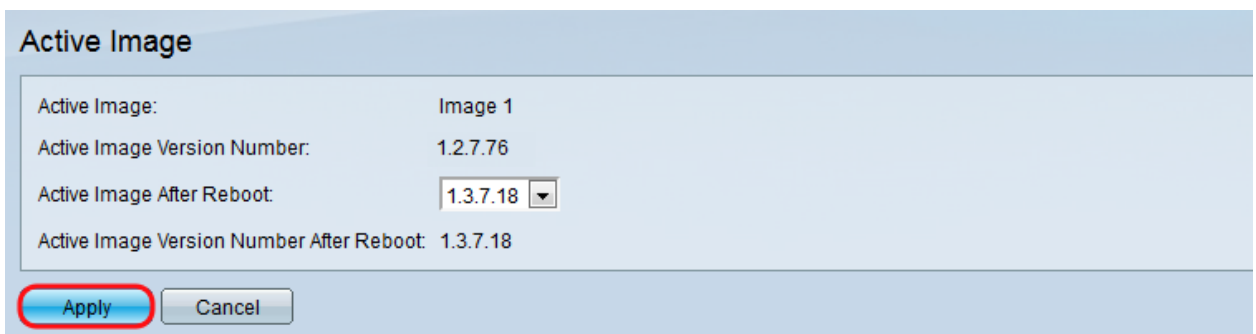
The screenshot shows a light blue panel titled "Upgrade/Backup Firmware/Language". At the top, there is an information icon (i) followed by the text: "The updated image will be used only after selecting it as the **active image** after reboot and then **rebooting** the system." Below this, the transfer statistics are displayed: "Bytes Transferred: 9911460", "Status: Copy finished", and "Error Message:". At the bottom of the panel is a blue button labeled "Done".

Step 9. From the *Active Image After Reboot* drop-down list, select the updated firmware version.



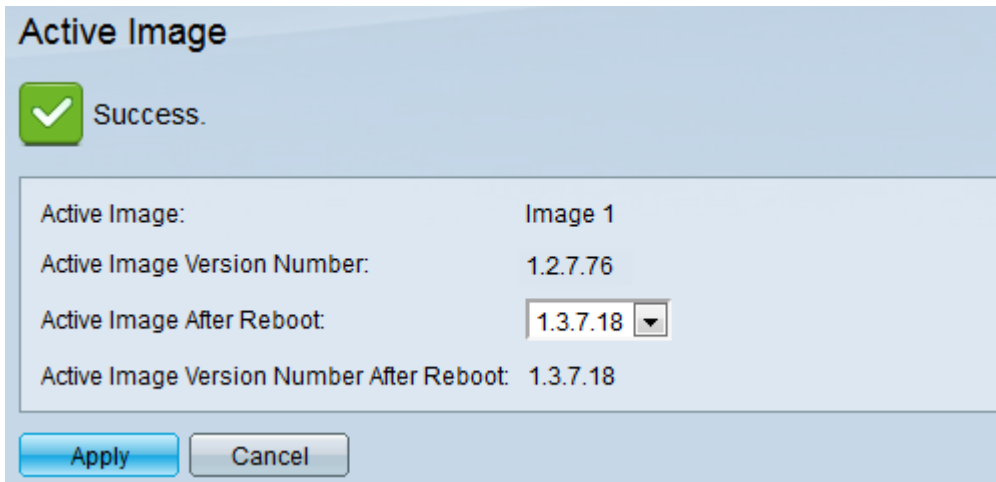
The screenshot shows a dialog box titled "Active Image". It contains the following fields: "Active Image:" with the value "Image 1"; "Active Image Version Number:" with the value "1.2.7.76"; "Active Image After Reboot:" with a dropdown menu showing "1.3.7.18" selected; and "Active Image Version Number After Reboot:" with the value "1.3.7.18". The "1.3.7.18" value in the dropdown and the "Active Image Version Number After Reboot:" field are circled in red. At the bottom are "Apply" and "Cancel" buttons.

Step 10. Click **Apply**.

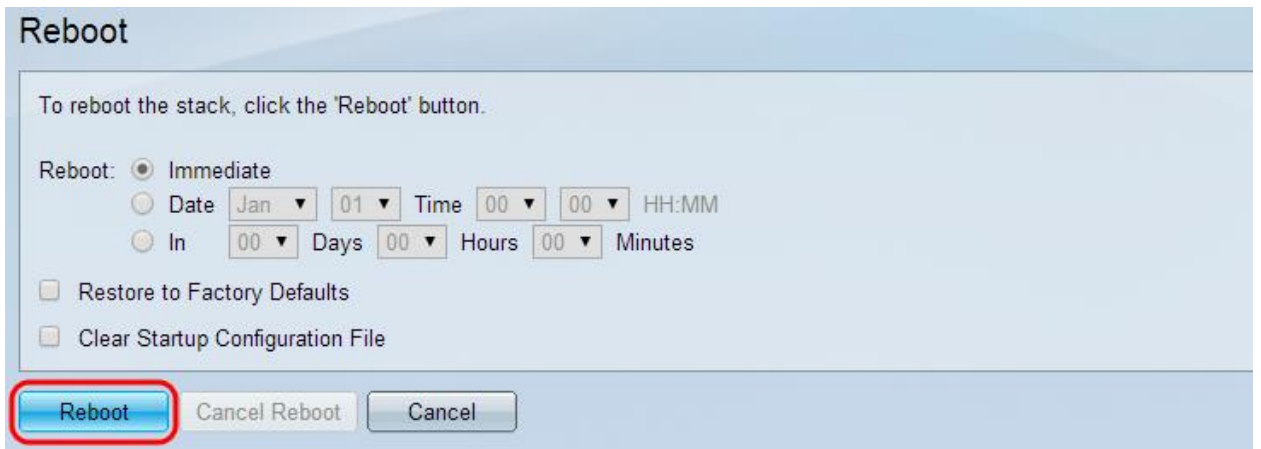


The screenshot shows the "Active Image" dialog box after the "Apply" button has been clicked. The "Active Image After Reboot:" dropdown menu now shows "1.3.7.18" as the selected option. The "Active Image Version Number After Reboot:" field now displays "1.3.7.18". The "Apply" button is circled in red, indicating it has been clicked.

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



Step 11. 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 12. (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.

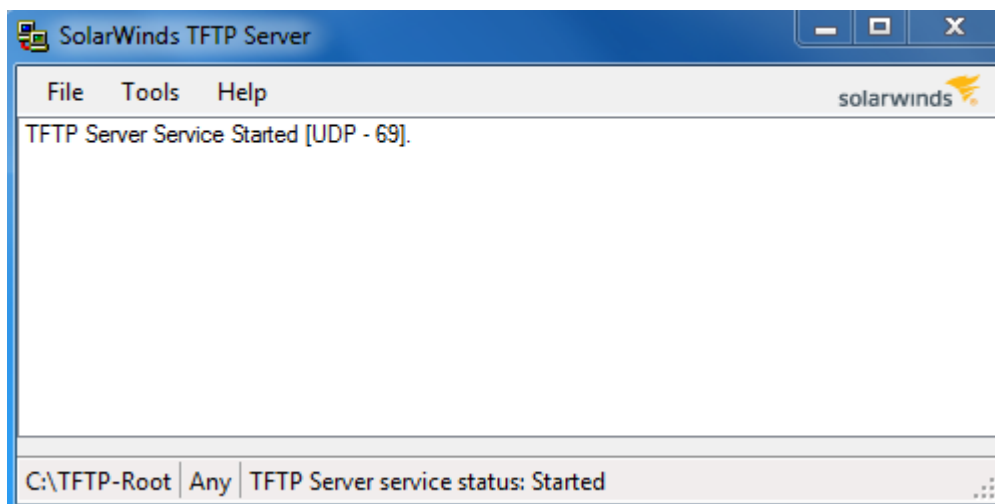
Software Information	
Firmware Version (Active Image):	1.3.7.18
Firmware MD5 Checksum (Active Image):	595c976a2f097c197111df59cec078d9
Firmware Version (Non-active):	1.2.7.76
Firmware MD5 Checksum (Non-active):	87b31e58cc35454b0fec477342613c7e
Boot Version:	1.2.0.12
Boot MD5 Checksum:	4275bacbcf4222e4f519a3271d8564bd
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>

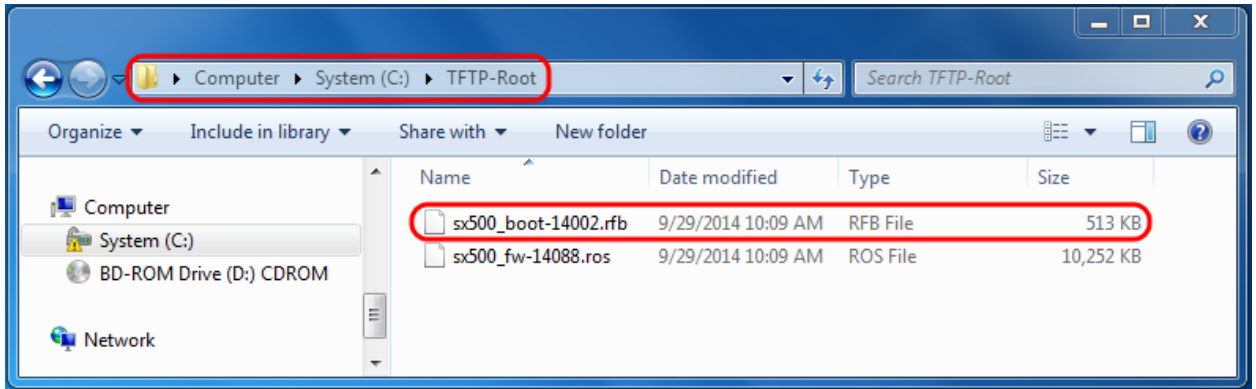
Note: The following steps assume you are using SolarWinds TFTP Server.

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



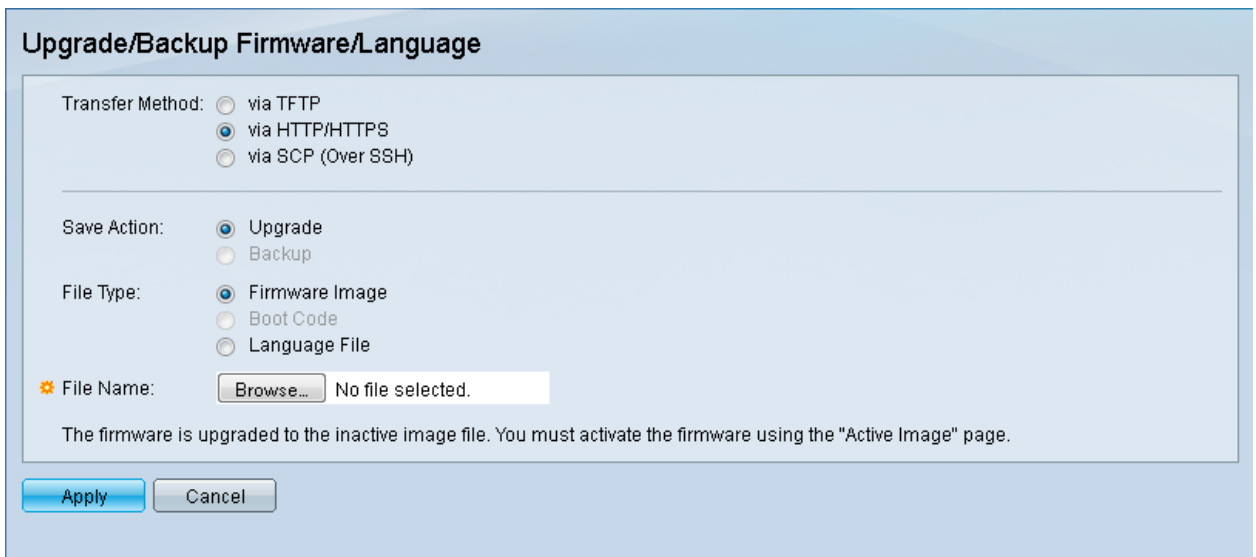
Note: If you are using Windows Operating System, make sure TFTP or the Solarwinds TFTP application is allowed for INBOUND connections on your Windows firewall. Otherwise the TFTP transfer will time-out (i.e. fail).

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 > Upgrade/Backup Firmware/Language**. The *Upgrade/Backup Firmware/Language* page opens:



Step 4. 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 5. 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.

Step 6. Click the **Boot Code** radio button in the *File Type* field.

The screenshot shows a configuration window titled "Upgrade/Backup Firmware/Language". It contains several sections with radio button options and text input fields. The "File Type" section has three options: "Firmware Image", "Boot Code" (which is selected and circled in red), and "Language File". Other sections include "Transfer Method" (with "via TFTP" selected), "Save Action" (with "Upgrade" selected), "TFTP Server Definition" (with "By IP address" selected), "IP Version" (with "Version 4" selected), "IPv6 Address Type" (with "Link Local" selected), and "Link Local Interface" (set to "VLAN 1"). There are also fields for "TFTP Server IP Address/Name" and "Source File Name". At the bottom, there are "Apply" and "Cancel" buttons.

Step 7. 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.

This screenshot is identical to the previous one, but the "TFTP Server IP Address/Name" field now contains the IP address "192.168.1.104", which is circled in red. All other settings and the window layout remain the same.

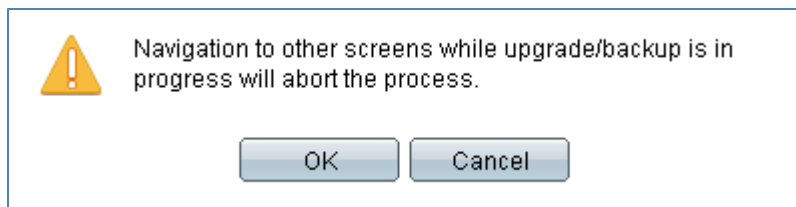
Step 8. Enter the filename of the Boot Code (.rfb) file in the *Source File Name* field. For example, if the exact path to the file is C:\TFTP-Root\sx500_boot-14002.rfb, then enter **sx500_boot-14002.rfb** into the field.

The screenshot shows a configuration window titled "Upgrade/Backup Firmware/Language". It contains several sections with radio button options and text input fields. The "Source File Name" field is highlighted with a red box and contains the text "sx500_boot-14002.rfb". Below the input fields, there is a note: "The firmware is upgraded to the inactive image file. You must activate the firmware using the 'Active Image' page." At the bottom of the window are "Apply" and "Cancel" buttons.

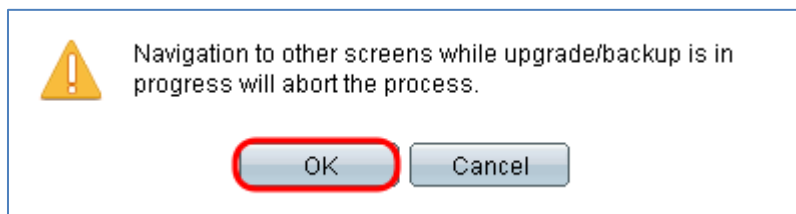
Note: The source file must be in the TFTP Root directory in order for the TFTP transfer to work.

Step 9. Click **Apply**.

A warning window appears:



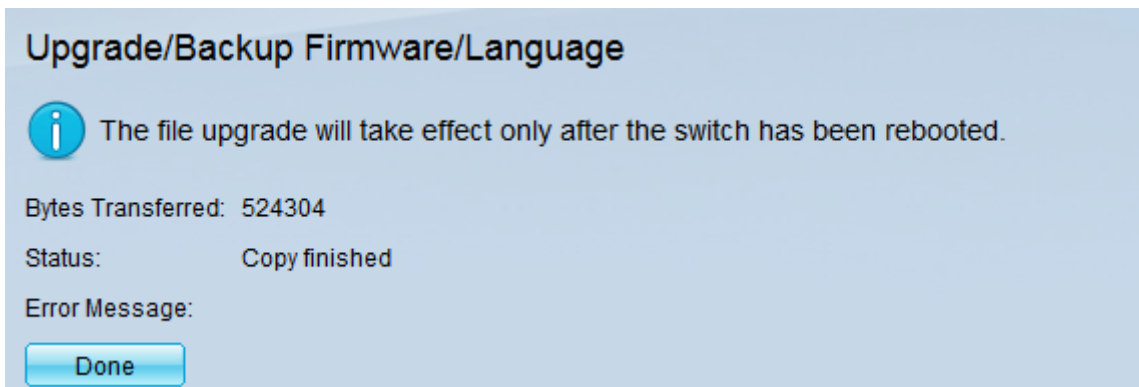
Step 10. Click **OK**.



A progress bar appears for several minutes:



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



Step 11. Click **Done**.

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

Reboot

To reboot the stack, click the 'Reboot' button.

Reboot: Immediate
 Date Time HH:MM
 In Days Hours Minutes

Restore to Factory Defaults
 Clear Startup Configuration File

Reboot Cancel Reboot Cancel

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 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:	accbdaec117726d0e5149bab5b2a0b0
Locale:	en-US
Language Version:	1.3.7.18
Language MD5 Checksum:	N/A

Step 14. Proceed with 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 > Upgrade/Backup Firmware/Language**. The *Upgrade/Backup Firmware/Language* page opens:

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

File Name: No file selected.

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

Step 2. Click the **via HTTP/HTTPS** 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

File Name: No file selected.

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

Step 3. 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

File Name: No file selected.

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

Step 4. Click the **Firmware Image** 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

File Name: No file selected.

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

Step 5. 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](#).

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

File Name: No file selected.

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

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

Step 6. Click **Apply**.

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

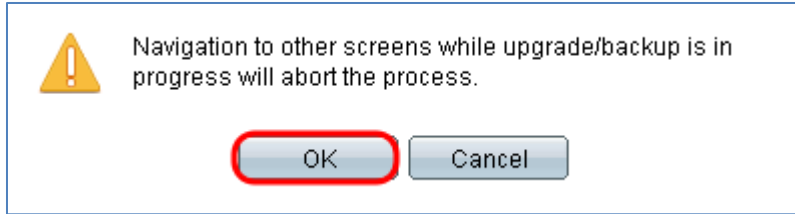
File Name: sx500_fw-14088.ros

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

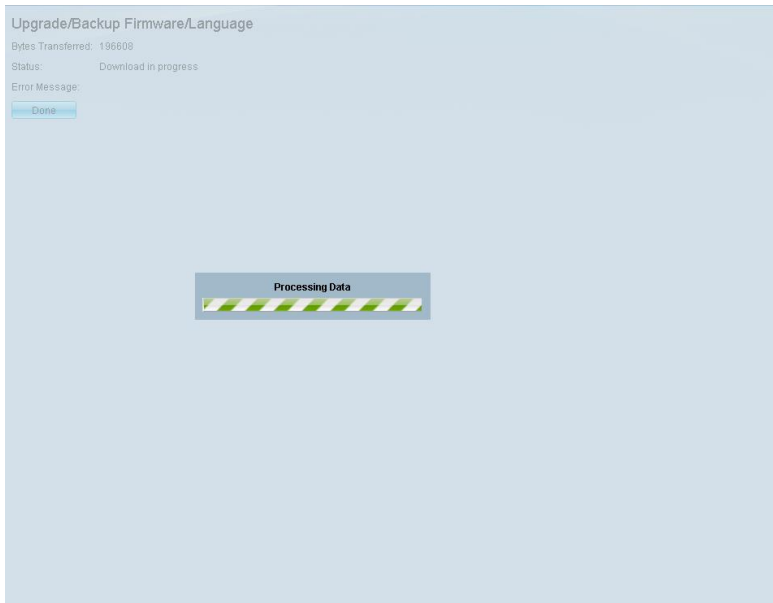
A warning window appears:

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

Step 7. Click **OK**.



A progress bar appears for several minutes:



Step 8. 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.



Step 9. 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

Step 10. Click **Apply**.

Active Image

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

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

Step 11. Reboot the switch so that the Firmware upgrade will take effect. Navigate to **Administration > Reboot**, and then click the **Reboot** button.

Reboot

To reboot the stack, click the 'Reboot' button.

Reboot: Immediate
 Date Time HH:MM
 In Days Hours Minutes

Restore to Factory Defaults
 Clear Startup Configuration File

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

Step 12. (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):	595c976a2f097c197111df59ceec078d9
Boot Version:	1.4.0.02
Boot MD5 Checksum:	accbdaec117726d0e5149bab5b2a0b0
Locale:	en-US
Language Version:	1.4.0.88
Language MD5 Checksum:	N/A