

MGX 8220 Upgrade and Downgrade Techniques

Document ID: 14888

Introduction

Prerequisites

Requirements

Components Used

Conventions

Procedure 1: Ungraceful Upgrade for 1 ASC Card Set for Versions 2.x to 2.y; 2.x to 3.y; 3.x to 3.y

Procedure 2: Downgrade for 1 ASC Card Set for Versions 2.y to 2.x; 3.y to 2.x; 3.y to 3.x

Procedure 3: Ungraceful Upgrade for 2 ASC Card Set for Versions 2.x to 2.y; 2.x to 3.y; 3.x to 3.y

Procedure 4: Downgrade for 2 ASC Card Set for Versions 2.y to 2.x; 3.y to 2.x; 3.y to 3.x

Procedure 5: Ungraceful Upgrade for 1 ASC Card Set for Versions 2.x to 4.y; 3.x to 4.y

Procedure 6: Downgrade for 1 ASC Card Set for Versions 4.y to 2.x; 4.y to 3.x

Procedure 7: Downgrade for 2 ASC Card Set for Versions 4.y to 2.x; 4.y to 3.x

Procedure 8: Ungraceful Upgrade for 1 ASC Card Set for Versions 4.x to 4.y; 4.x to 5.y; 5.x to 5.y

Procedure 9: Downgrade for 1 ASC Card Set for Versions 4.y to 4.x; 5.x to 4.x; 5.y to 5.x

Procedure 10: Graceful Upgrade for 2 ASC Card Set for Versions 2.x to 2.y; 3.x to 3.y

Procedure 11: Graceful Upgrade for 2 ASC Card Set for Versions 2.x to 4.y; 3.x to 4.y

Procedure 12: Graceful Upgrade for 2 ASC Card Set for Versions 4.x to 4.y; 4.x to 5.x; 5.x to 5.y

Procedure 13: Downgrade for 2 ASC Card Set for Versions 4.y to 4.x; 5.x to 4.x; 5.y to 5.x

Related Information

Introduction

This document describes Cisco's recommended process for successful MGX 8220 Edge Concentrator bootcode and firmware upgrades and downgrades. AXIS is the legacy product name for the Cisco MGX 8220 Edge Concentrator.

The following upgrade and downgrade techniques for the AXIS Shelf Controller (ASC) and Service Module (SM) are provided.

- Graceful Upgrades
- Ungraceful Upgrades
- Downgrades

Refer to Concepts and Definitions for additional information.

Prerequisites

Requirements

Use of the procedures discussed in this document assumes that you have a working knowledge of the MGX 8220 Edge Concentrator. We recommend that you read both documents completely before proceeding with a firmware upgrade.

Components Used

MGX 8220 upgrades to firmware version 5.0.x are supported only for versions:

- 4.0.x
- 4.1.x
- 5.0.x

For upgrades from version 2.x or 3.x, you must first upgrade devices to the latest generally available firmware version of 4.0.x or 4.1.x and then upgrade them to version 5.0.x. Special considerations apply when upgrading:

- From versions 2.x and 3.x
- Inverse Multiplexing for ATM Trunk Module (IMATM) and ATM UNI service modules (AUSM) 8–port service modules (SMs) from version 4.0.x and 4.1.x to version 5.0.x.

The information presented in this document was created from devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If you are working in a live network, ensure that you understand the potential impact of any command before using it.

This document is intended to be used as an aid for conducting successful firmware upgrades and is not a substitute for proper planning with your Cisco Sales Engineer, Systems Engineer, or Account Manager.

Note: For MGX 8220 upgrades from firmware version 2.1.16 or 2.1.18 to 4.0.03, refer to Customer Upgrade Procedure: MGX 8220 2.1.18/16 to 4.0.03.

Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

Procedure 1: Ungraceful Upgrade for 1 ASC Card Set for Versions 2.x to 2.y; 2.x to 3.y; 3.x to 3.y

This procedure applies to the following firmware versions:

- 2.x to 2.y
- 2.x to 3.y
- 3.x to 3.y

Complete the following steps:

1. Save the current ASC configuration. Perform this step for the ASC before upgrading the firmware.
2. Save the current SM configuration for each primary and stand-alone SM. Perform this step for the SM before upgrading the firmware.
3. Use the **dspxlat** command and note the value of the *ConnNumOfValidEntries* parameter, which indicates the number of connections.
4. Use the **dsptotals** command for all primary and stand-alone SMs. Do not change the configuration of the shelf during the upgrade. Examine the number of lines, ports, and channels before the upgrade. Examine the same configuration parameters after the upgrade to establish that a configuration has been retained.
5. Use the Trivial File Transfer Protocol (TFTP) **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new ASC bootcode into the ASC. Verify the result with the following

substeps:

- a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
- b. Use the **version** command to display the version of the bootcode stored in Flash memory.
6. Use the TFTP **put ASC_FW_file AXIS_ASC_ACTIVE.FW** command to download the new ASC firmware into the ASC.
7. Compare the file size of the firmware to verify a successful download to the ASC disk.
8. Use the **dspfwrevs** command to verify the correct firmware revision.
9. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the bootcode file will be written:
 - a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the Flash memory file at 0xbfc00000 and end at 0xbfc40000:

```
◇ shelf.1.slot.type.a/sFlashStartAddr = 0xbfc00000
◇ shelf.1.slot.type.a/sFlashEndAddr = 0xbfc40000
```
 - b. Use the TFTP **put SM_BT_file AXIS_SM_1_slot#.BOOT** command, where *slot#* is the SM slot number, to download the new bootcode for the SM .
 - c. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - d. Use the **version** command to display the version of the bootcode stored in Flash memory.
10. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the firmware file will be written:
 - a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the Flash memory file at 0xbfc40000 and end at 0xbfd00000:

```
◇ shelf.1.slot.type.a/sFlashStartAddr = 0xbfc40000
◇ shelf.1.slot.type.a/sFlashEndAddr = 0xbfd00000
```
 - b. Use the TFTP **put SM_FW_file AXIS_SM_1_slot#.FW** command, where *slot#* is the SM slot number.
 - c. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the firmware is correct.
11. Use the **resetsys** command to reset all cards on the shelf.
12. Use the **dspadrxlat** command (as you did in Step 3) to ensure that the number of connections has not changed.
13. Use the **dsptotals** command for all primary and stand-alone SMs to examine the number of lines, ports, and channels after the upgrade. Compare the values to those before the download. The command also can help establish whether the configuration has remained the same.
14. Restore the ASC and SM configurations if necessary.

Procedure 2: Downgrade for 1 ASC Card Set for Versions 2.y to 2.x; 3.y to 2.x; 3.y to 3.x

This procedure applies to the following firmware versions:

- 2.y to 2.x
- 3.y to 2.x
- 3.y to 3.x

Complete the following steps:

1. Verify the compatibility.
2. Save the current ASC configuration. Perform this step for the ASC before downgrading the firmware.
3. Save the current SM configuration for each primary and stand-alone SM. Perform this step before downgrading the firmware.
4. Use the **dspadrxlat** command and note the value of the *ConnNumOfValidEntries* parameter, which indicates the number of connections.
5. Use the **dsptotals** command for all primary and stand-alone SMs. Do not change the configuration of the shelf during the downgrade. Examine the number of lines, ports, and channels before the downgrade. Examine the same configuration parameters after the downgrade to establish whether the configuration has been restored properly.
6. Use the Trivial File Transfer Protocol (TFTP) **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the desired bootcode into the ASC. Verify the result with the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
7. Use the TFTP **put ASC_FW_file AXIS_ASC_ACTIVE.FW** command to download the desired ASC firmware into the ASC.
8. Compare the file size of the firmware to verify a successful download to the ASC disk.
9. Use the **dspfwevs** command to verify the correct firmware revision.
10. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the bootcode file will be written:
 - a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the Flash memory file at 0xbfc00000 and end it at 0xbfc40000:
 - ◇ **shelf.1.slot.type.a/sFlashStartAddr = 0xbfc00000**
 - ◇ **shelf.1.slot.type.a/sFlashEndAddr = 0xbfc40000**
 - b. Use the TFTP **put SM_BT_file AXIS_SM_1_slot#.BOOT** command, where *slot#* is the number of the SM slot, to download the desired bootcode for the SM.
 - c. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - d. Use the **version** command to display the bootcode version stored in Flash memory.
11. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the firmware file will be written:
 - a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the firmware file at 0xbfc40000 and end it at 0xbfd00000:
 - ◇ **shelf.1.slot.type.a/sFlashStartAddr = 0xbfc40000**
 - ◇ **shelf.1.slot.type.a/sFlashEndAddr = 0xbfd00000**
 - b. Use the TFTP **put SM_FW_file AXIS_SM_1_slot#.FW** command, where *slot#* is the number of the SM slot, to download the desired firmware into the SM.
 - c. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the firmware is correct.
12. Use the **clrallcnf** command to reset all cards on the shelf.
13. Set the Battery-Backup RAM (BRAM) revision.
14. Restore the ASC and SM configurations.
15. Use the **dspadrxlat** command (as you did in Step 4) to ensure that the number of connections is correct.
16. Use the **dsptotals** command for all SMs to examine the number of lines, ports, and channels after the downgrade. Compare the values to those before the download to establish whether the configuration has remained the same.

Procedure 3: Ungraceful Upgrade for 2 ASC Card Set for Versions 2.x to 2.y; 2.x to 3.y; 3.x to 3.y

This procedure applies to the following firmware versions:

- 2.x to 2.y
- 2.x to 3.y
- 3.x to 3.y

Note: An MGX 8220 shelf running version 2.x cannot be upgraded to 3.x gracefully. The upgrade process is ungraceful even if the shelf has redundancy with a 2 ASC card set.

Complete the following steps:

1. Save the current ASC configuration. Perform this step for the ASC before upgrading the firmware.
2. Save the current SM configuration for each primary and stand-alone SM. Perform this step for the SM before upgrading the firmware.
3. Use the **dspadrxlat** command, and note the value of the *ConnNumOfValidEntries* parameter, which indicates the number of connections.
4. Use the **dsptotals** command for all primary and stand-alone SMs. Do not change the configuration of the shelf during the upgrade. Examine the number of lines, ports, and channels before the upgrade. Examine the same configuration parameters after the upgrade to establish whether the configuration has been retained.
5. Use the Trivial File Transfer Protocol (TFTP) **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new bootcode for the ASC. Verify the result with the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
 - c. Use the **switchcc** command to switch to the other ASC.
 - d. Use the TFTP **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new bootcode into the second ASC.
 - e. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - f. Use the **version** command to display the version of the bootcode stored in Flash memory.
6. Use the TFTP **put ASC_FW_file AXIS_ASC_ACTIVE.FW** command to download the new firmware for the active ASC.
7. Verify the file size of the downloaded firmware and verify whether you successfully downloaded the firmware to the ASC disk.
8. Execute the **dspfwrevs** command to verify the correct firmware revision.
9. Use the TFTP **put ASC_FW_file AXIS_ASC_STANDBY.FW** command to download the new firmware for the standby ASC.
10. Verify the file size of the downloaded firmware and verify whether you successfully downloaded the firmware to the standby ASC disk.
11. Use the **dspfwrevs** command on the standby ASC to verify the correct firmware revision.
12. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the bootcode file will be written:
 - a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the Flash memory file at 0xbfc00000 and end it at 0xbfc40000:

◇ **shelf.1.slot.type.a/sFlashStartAddr = 0xbfc00000**
◇ **shelf.1.slot.type.a/sFlashEndAddr = 0xbfc40000**

- b. Use the TFTP **put SM_BT_file** *AXIS_SM_1_slot#.BOOT* command, where *slot#* is the number of the SM slot, to download the desired bootcode for the SM.
 - c. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - d. Use the **version** command to display the bootcode version stored in Flash memory.
13. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the firmware file will be written:
 - a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the firmware file at 0xbfc40000 and end it at 0xbfd00000:
 - ◇ **shelf.1.slot.type.a/sFlashStartAddr = 0xbfc40000**
 - ◇ **shelf.1.slot.type.a/sFlashEndAddr = 0xbfd00000**
 - b. Use the TFTP **put SM_FW_file** *AXIS_SM_1_slot#.FW* command, where *slot#* is the number of the SM slot, to download the desired firmware into the SM.
 - c. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the firmware is correct.
14. Use the **resetsys** command to reset all cards on the shelf.
15. Use the **dspadrxlat** command (as you did in Step 3) to ensure that the number of connections is correct.
16. Use the **dsptotals** command for all primary and stand-alone SMs to examine the number of lines, ports, and channels after the upgrade. Compare the values to those before the download to establish that the configuration has remained the same.
17. Restore the ASC and SM configurations if necessary.

Procedure 4: Downgrade for 2 ASC Card Set for Versions 2.y to 2.x; 3.y to 2.x; 3.y to 3.x

This procedure applies to the following firmware versions:

- 2.y to 2.x
- 3.y to 2.x
- 3.y to 3.x

Complete the following steps:

1. Verify the compatibility.
2. Save the current ASC configuration. Perform this step for the ASC before downgrading the firmware.
3. Save the current SM configuration for each primary and stand-alone SM. Perform this step before downgrading the firmware.
4. Use the **dspadrxlat** command and note the value of the *ConnNumOfValidEntries* parameter, which indicates the number of connections.
5. Use the **dsptotals** command for all primary and stand-alone SMs. Do not change the configuration of the shelf during the downgrade. Examine the number of lines, ports, and channels before the downgrade. Examine the same configuration parameters after the downgrade to establish whether the configuration has remained the same.
6. Use the Trivial File Transfer Protocol (TFTP) **put ASC_BT_file** *AXIS_ASC_BACKUP.FW* command to download the new ASC bootcode into the ASC. Verify the result with the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.

- c. Use the **switchcc** command to switch to the other ASC.
- d. Use the TFTP **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new bootcode into the second ASC.
- e. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
- f. Use the **version** command to display the version of the bootcode stored in Flash memory.
7. Use the TFTP **put ASC_FW_file AXIS_ASC_ACTIVE.FW** command to download the desired ASC firmware for the active ASC.
8. Verify the file size of the firmware and verify a successful firmware download to the ASC disk.
9. Use the **dspfwrevs** command to verify the correct firmware revision.
10. Use the TFTP **put ASC_FW_file AXIS_ASC_STANDBY.FW** command to download the desired firmware for the standby ASC.
11. Verify the file size of the firmware and verify a successful firmware download to the standby ASC disk.
12. Use the **dspfwrevs** command to verify the correct firmware revision.
13. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the bootcode file will be written:
 - a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the Flash memory file at 0xbfc00000 and end it at 0xbfc40000:
 - ◇ **shelf.1.slot.type.a/sFlashStartAddr = 0xbfc00000**
 - ◇ **shelf.1.slot.type.a/sFlashEndAddr = 0xbfc40000**
 - b. Use the TFTP **put SM_BT_file AXIS_SM_1_slot#.BOOT** command, where *slot#* is the number of the SM slot, to download the desired bootcode for the SM.
 - c. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - d. Use the **version** command to display the bootcode version stored in Flash memory.
14. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the firmware file will be written:
 - a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the firmware file at 0xbfc40000 and end it at 0xbfd00000:
 - ◇ **shelf.1.slot.type.a/sFlashStartAddr = 0xbfc40000**
 - ◇ **shelf.1.slot.type.a/sFlashEndAddr = 0xbfd00000**
 - b. Use the TFTP **put SM_FW_file AXIS_SM_1_slot#.FW** command, where *slot#* is the number of the SM slot, to download the desired firmware into the SM.
 - c. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the firmware is correct.
15. Use the **clrallcnf** command to reset all cards on the shelf.
16. Set the Battery–Backup RAM (BRAM) revision.
17. Restore the ASC and SM configurations.
18. Use the **dspadrxlat** command (as you did in Step 4) to ensure that the number of connections is correct.
19. Use the **dsptotals** command for all SMs to examine the number of lines, ports, and channels after the downgrade. Compare the values to those before the download to establish whether the configuration has remained the same.

Procedure 5: Ungraceful Upgrade for 1 ASC Card Set for Versions 2.x to 4.y; 3.x to 4.y

This procedure applies to the following firmware versions:

- 2.x to 4.y
- 3.x to 4.y

Complete the following steps:

1. Save the current ASC configuration. Perform this step for the ASC before upgrading the firmware.
2. Save the current SM configuration for each primary and stand-alone SM. Perform this step for the SM before upgrading the firmware.
3. Use the **dspadrxlat** command and note the value of the *ConnNumOfValidEntries* parameter, which indicates the number of connections.
4. Use the **dsptotals** command for all primary and stand-alone SMs. Do not change the configuration of the shelf during the upgrade. Examine the number of lines, ports, and channels before the upgrade. Examine the same configuration parameters after the upgrade to establish that a configuration has been retained.
5. Use the Trivial File Transfer Protocol (TFTP) **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new ASC bootcode into the ASC. Verify the result with the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
6. Use the TFTP **put ASC_FW_file AXIS_ASC_ACTIVE.FW** command to download the new ASC firmware into the ASC.
7. Compare the file size of the firmware to verify a successful download to the ASC disk.
8. Use the **dspfwrevs** command to verify the correct firmware revision.
9. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the bootcode file will be written:
 - a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the Flash memory file at 0xbfc00000 and end at 0xbfc80000:
 - ◇ **shelf.1.slot.type.a/sFlashStartAddr = 0xbfc00000**
 - ◇ **shelf.1.slot.type.a/sFlashEndAddr = 0xbfc80000**
 - b. Use the TFTP **put SM_BT_file AXIS_SM_1_slot#.BOOT** command, where *slot#* is the SM slot number, to download the new bootcode for the SM.
 - c. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - d. Use the **version** command to display the version of the bootcode stored in Flash memory.
10. Complete the following substeps for all SMs to download the firmware:
 - a. Use the TFTP **put SM_FW_file AXIS_SM_1_slot#.FW** command, where *slot#* is the SM slot number, to download the desired firmware into the SM.
 - b. Verify the file size of the downloaded firmware and verify whether you successfully downloaded the formware to the ACS disk.
 - c. Use the **dspfwrevs** command to display the firmware version.
11. Use the **resetsys** command to reset all cards on the shelf.
12. Use the **dspadrxlat** command (as you did in Step 3) to ensure that the number of connections has not changed.
13. Use the **dsptotals** command for all primary and stand-alone SMs to examine the number of lines, ports, and channels after the upgrade. Compare the values to those before the download. The command also can help establish whether the configuration has remained the same.
14. Restore the ASC and SM configurations if necessary.

Procedure 6: Downgrade for 1 ASC Card Set for Versions 4.y to 2.x; 4.y to 3.x

This procedure applies to the following firmware versions:

- 4.y to 2.x
- 4.y to 3.x

Complete the following steps:

1. Verify the compatibility.
2. Save the current ASC configuration. Perform this step for the ASC before downgrading the firmware.
3. Save the current SM configuration for each primary and stand-alone SM. Perform this step before downgrading the firmware.
4. Use the **dspadrxlat** command and note the value of the *ConnNumOfValidEntries* parameter, which indicates the number of connections.
5. Use the **dsptotals** command for all primary and stand-alone SMs. Do not change the configuration of the shelf during the downgrade. Examine the number of lines, ports, and channels before the downgrade. Examine the same configuration parameters after the downgrade to establish whether the configuration has remained the same.
6. Use the Trivial File Transfer Protocol (TFTP) **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new ASC bootcode into the ASC. Verify the result with the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
7. Use the TFTP **put ASC_FW_file AXIS_ASC_ACTIVE.FW** command to download the desired ASC firmware for the active ASC.
8. Verify the file size of the firmware and verify a successful firmware download to the ASC disk.
9. Use the **dspfwrevs** command to verify the correct firmware revision.
10. Use the TFTP **put SM_BT_file AXIS_SM_1_slot#.BOOT** command, where *slot#* is the number of the SM slot, to download the desired bootcode for the SM.
11. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
12. Use the **version** command to display the version of the bootcode stored in Flash memory.
13. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the firmware file will be written:
 - a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the Flash memory file at 0xbfc40000 and end it at 0xbf000000:
 - ◇ **shelf.1.slot.type.a/sFlashStartAddr = 0xbfc40000**
 - ◇ **shelf.1.slot.type.a/sFlashEndAddr = 0xbf000000**
 - b. Use the TFTP **put SM_FW_file AXIS_SM_1_slot#.BOOT** command, where *slot#* is the number of the SM slot, to download the desired firmware into the SM.
 - c. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the firmware is correct.
14. Use the **clrallcnf** command to reset all cards on the shelf.
15. Restore the ASC and SM configurations.
16. Use the **dspadrxlat** command (as you did in Step 4) to ensure that the number of connections is correct.

17. Use the **dsptotals** command for all SMs to examine the number of lines, ports, and channels after the downgrade. Compare the values to those before the download to establish whether the configuration has remained the same.

Procedure 7: Downgrade for 2 ASC Card Set for Versions 4.y to 2.x; 4.y to 3.x

This procedure applies to the following firmware versions:

- 4.y to 2.x
- 4.y to 3.x

Complete the following steps:

1. Verify the compatibility.
2. Save the current ASC configuration. Perform this step for the ASC before downgrading the firmware.
3. Save the current SM configuration for each primary and stand-alone SM. Perform this step before downgrading the firmware.
4. Use the **dspadrxlat** command and note the value of the *ConnNumOfValidEntries* parameter, which indicates the number of connections.
5. Use the **dsptotals** command for all primary and stand-alone SMs. Do not change the configuration of the shelf during the downgrade. Examine the number of lines, ports, and channels before the downgrade. Examine the same configuration parameters after the downgrade to establish whether the configuration has remained the same.
6. Use the Trivial File Transfer Protocol (TFTP) **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new ASC bootcode into the ASC, and complete the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
 - c. Use the **switchcc** command to switch to the other ASC.
 - d. Use the TFTP **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new bootcode into the second ASC.
 - e. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - f. Use the **version** command to display the version of the bootcode stored in Flash memory.
7. Use the TFTP **put ASC_FW_file AXIS_ASC_ACTIVE.FW** command to download the desired ASC firmware for the active ASC, and complete the following substeps:
 - a. Verify the file size of the downloaded firmware and verify the file size of the downloaded firmware. You also can check whether you successfully downloaded the firmware to the ASC disk.
 - b. Use the **dspfwrevs** command to verify the correct firmware revision.
 - c. Use the TFTP **put ASC_FW_file AXIS_ASC_STANDBY.FW** command to download the desired firmware for the standby ASC.
 - d. Verify the file size of the downloaded firmware and verify the file size of the downloaded firmware. You also can check whether you successfully downloaded the firmware to the standby ASC disk.
 - e. Use the **dspfwrevs** command on the standby ASC to verify the correct firmware revision.
8. Use the TFTP **put SM_BT_file AXIS_SM_1_slot#.BOOT** command, where *slot#* is the number of the SM slot, to download the desired bootcode for the SM, and complete the following substeps to verify:

- a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
9. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the firmware file will be written:
- a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the Flash memory file at 0xbfc40000 and end it at 0xbf000000:
 - ◇ **shelf.1.slot.type.a/sFlashStartAddr = 0xbfc40000**
 - ◇ **shelf.1.slot.type.a/sFlashEndAddr = 0xbf000000**
 - b. Use the TFTP **put SM_FW_file AXIS_SM_1_slot#.FW** command, where *slot#* is the number of the SM slot, to download the desired firmware into the SM.
 - c. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the firmware is correct.
10. Use the **clralcnf** command to reset all cards on the shelf.
11. Restore the ASC and SM configurations.
12. Use the **dspadrxlat** command (as you did in Step 4) to ensure that the number of connections is correct.
13. Use the **dsptotals** command for all SMs to examine the number of lines, ports, and channels after the downgrade. Compare the values to those before the download to establish whether the configuration has remained the same.

Procedure 8: Ungraceful Upgrade for 1 ASC Card Set for Versions 4.x to 4.y; 4.x to 5.y; 5.x to 5.y

This procedure applies to the following firmware versions:

- 4.x to 4.y
- 4.x to 5.x
- 5.x to 5.y

Complete the following steps:

1. Save the current ASC configuration. Perform this step for the ASC before upgrading the firmware.
2. Save the current SM configuration for each primary and stand-alone SM. Perform this step for the SM before upgrading the firmware.
3. Use the **dspadrxlat** command and note the value of the *ConnNumOfValidEntries* parameter, which indicates the number of connections.
4. Use the **dsptotals** command for all primary and stand-alone SMs. Do not change the configuration of the shelf during the upgrade. Examine the number of lines, ports, and channels before the upgrade. Examine the same configuration parameters after the upgrade to establish that a configuration has been retained.
5. Use the Trivial File Transfer Protocol (TFTP) **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new ASC bootcode into the ASC, and complete the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
6. Use the TFTP **put ASC_FW_file AXIS_ASC_ACTIVE.FW** command to download the new ASC firmware into the ASC.
7. Compare the file size of the firmware and verify a successful download to the ASC disk.
8. Use the **dspfwrevs** command to verify the correct firmware revision.

9. Use the TFTP **put SM_BT_file AXIS_SM_1_slot#.BOOT** command for all SMs, where *slot#* is the number of the SM slot to download the new bootcode for the SM. Verify the result with the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
10. Use the TFTP **put SM_FW_file AXIS_SM_1_0.FW** command, where *0* represents all relevant slots, to download the new firmware for the SM. For slot-specific firmware downloads, use the TFTP **put SM_FW_file AXIS_SM_1_slot#.FW** command.
 - a. Verify the file size of the downloaded firmware and verify whether you successfully downloaded the firmware to the ASC disk.
 - b. Use the **dspfwrevs** command to display the firmware version.
11. Use the **resetsys** command to reset all cards on the shelf.
12. Use the **dspadrxlat** command (as you did in Step 3) to ensure that the number of connections has not changed.
13. Use the **dsptotals** command for all primary and stand-alone SMs to examine the number of lines, ports, and channels after the upgrade. Compare the values to those before the download. The command also can help establish whether the configuration has remained the same.
14. Restore the ASC and SM configurations if necessary.

Procedure 9: Downgrade for 1 ASC Card Set for Versions 4.y to 4.x; 5.x to 4.x; 5.y to 5.x

This procedure applies to the following firmware versions:

- 4.y to 4.x
- 5.x to 4.x
- 5.y to 5.x

Complete the following steps:

1. Verify the compatibility.
2. Save the current ASC configuration. Perform this step for the ASC before downgrading the firmware.
3. Save the current SM configuration for each primary and stand-alone SM. Perform this step before downgrading the firmware.
4. Use the **dspadrxlat** command and note the value of the *ConnNumOfValidEntries* parameter, which indicates the number of connections.
5. Use the **dsptotals** command for all primary and stand-alone SMs. Do not change the configuration of the shelf during the downgrade. Examine the number of lines, ports, and channels before the downgrade. Examine the same configuration parameters after the downgrade to establish whether the configuration has remained the same.
6. Use the Trivial File Transfer Protocol (TFTP) **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new ASC bootcode into the ASC. Verify the result with the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
7. Use the TFTP **put ASC_FW_file AXIS_ASC_ACTIVE.FW** command to download the desired ASC firmware for the active ASC, and complete the following substeps:

- a. Verify the file size of the downloaded firmware and verify the file size of the downloaded firmware. You also can check whether you successfully downloaded the firmware to the ASC disk.
 - b. Use the **dspfwrevs** command to verify the correct firmware revision.
8. Use the TFTP **put SM_BT_file AXIS_SM_1_slot#.BOOT** command, where *slot#* is the number of the SM slot, to download the desired bootcode for the SM and complete the following substeps to verify:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
9. Use the TFTP **put SM_FW_file AXIS_SM_1_0.FW** command, where *0* represents all relevant SM slots, to download the desired firmware for the SM. For slot-specific firmware downloads, use the TFTP **put SM_FW_file AXIS_SM_1_slot#.FW** command. Complete the following substeps to verify:
 - a. Verify the file size of the downloaded firmware and verify whether you successfully downloaded the firmware to the ASC disk.
 - b. Use the **dspfwrevs** command to display the firmware revisions.
10. Use the **clralenf** command to reset all cards on the shelf.
11. Restore the ASC and SM configurations.
12. Use the **dspadrxlat** command (as you did in Step 4) to ensure that the number of connections is correct.
13. Use the **dsptotals** command for all SMs to examine the number of lines, ports, and channels after the downgrade. Compare the values to those before the download to establish whether the configuration has remained the same.

Procedure 10: Graceful Upgrade for 2 ASC Card Set for Versions 2.x to 2.y; 3.x to 3.y

This procedure applies to the following firmware versions:

- 2.x to 2.y
- 3.x to 3.y

Complete the following steps:

1. Save the current ASC configuration. Perform this step for the ASC before upgrading the firmware.
2. Save the current SM configuration for each primary and stand-alone SM. Perform this step for the SM before upgrading the firmware.
3. Use the **dspadrxlat** command and note the value of the *ConnNumOfValidEntries* parameter, which indicates the number of connections.
4. Use the **dsptotals** command for all primary and stand-alone SMs. Do not change the configuration of the shelf during the upgrade. Examine the number of lines, ports, and channels before the upgrade. Examine the same configuration parameters after the upgrade to establish that a configuration has been retained.
5. Use the Trivial File Transfer Protocol (TFTP) **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new ASC bootcode into the ASC, and complete the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
 - c. Use the **switchcc** command to switch to the other ASC.

- d. Use the TFTP **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new bootcode into the second ASC.
 - e. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - f. Use the **version** command to display the version of the bootcode stored in Flash memory.
 - g. Use the **donotupdatestandby** command on the active ASC.
 - h. Use the TFTP **put ASC_FW_file AXIS_ASC_STANDBY.FW** command.
 - i. Verify the file size of the downloaded firmware and verify whether you successfully downloaded the firmware to the standby ASC disk.
 - j. Use the **dspfwrevs** command on the standby ASC to verify the correct firmware revision.
6. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the bootcode file will be written:
- a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the Flash memory file at 0xbfc00000 and end at 0xbfc40000:
 - ◇ **shelf.1.slot.type.a/sFlashStartAddr = 0xbfc00000**
 - ◇ **shelf.1.slot.type.a/sFlashEndAddr = 0xbfc40000**
 - b. Use the TFTP **put SM_BT_file AXIS_SM_1_slot#.BOOT** command, where *slot#* is the SM slot number, to download the new bootcode for the SM.
 - c. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - d. Use the **version** command to display the version of the bootcode stored in Flash memory.
7. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the firmware file will be written:
- a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the Flash memory file at 0xbfc40000 and end at 0xbfd00000:
 - ◇ **shelf.1.slot.type.a/sFlashStartAddr = 0xbfc40000**
 - ◇ **shelf.1.slot.type.a/sFlashEndAddr = 0xbfd00000**
 - b. Use the TFTP **put SM_FW_file AXIS_SM_1_slot#.FW** command, where *slot#* is the SM slot number, to download the new firmware into the SM.
 - c. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - d. Use the **dspfwrevs** command to display the firmware revisions.
8. Use the **resetcd standby_ASC** command to reset the standby card.
9. Use the **resetcd active_ASC** command, after the standby ASC comes up, to reset the active card and make the standby ASC become active with minimal service impact.
10. Use the **resetcd stand-alone** command for all stand alone SMs to reset the stand-alone cards.
11. Complete the following substeps for all primary SMs in all redundancy groups (version 3.x to 3.y):
- a. Use the **resetcd primary_SM** command.
 - b. Use the **resetcd secondary_SM** command.
12. Use the **dspadrxlat** command (as you did in Step 3) to ensure that the number of connections is correct.
13. Use the **dsptotals** command for all primary and stand-alone SMs to examine the number of lines, ports, and channels after the upgrade. Compare the values to those before the download. The command also can help establish whether the configuration has remained the same.
14. Restore the ASC and SM configurations if necessary.

Procedure 11: Graceful Upgrade for 2 ASC Card Set for Versions 2.x to 4.y; 3.x to 4.y

This procedure applies to the following firmware versions:

- 2.x to 4.y
- 3.x to 4.y

Complete the following steps:

1. Save the current ASC configuration. Perform this step for the ASC before upgrading the firmware.
2. Save the current SM configuration for each primary and stand-alone SM. Perform this step for the SM before upgrading the firmware.
3. Use the **dspadrxlat** command and note the value of the *ConnNumOfValidEntries* parameter, which indicates the number of connections.
4. Use the **dsptotals** command for all primary and stand-alone SMs. Do not change the configuration of the shelf during the upgrade. Examine the number of lines, ports, and channels before the upgrade. Examine the same configuration parameters after the upgrade to establish that a configuration has been retained.
5. Use the Trivial File Transfer Protocol (TFTP) **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new ASC bootcode into the ASC, and complete the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
 - c. Use the **switchcc** command to switch to the other ASC.
 - d. Use the TFTP **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new bootcode into the second ASC.
 - e. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - f. Use the **version** command to display the version of the bootcode stored in Flash memory.
 - g. Use the **donotupdatestandby** command on the active ASC.
 - h. Use the TFTP **put ASC_FW_file AXIS_ASC_STANDBY.FW** command.
 - i. Verify the file size of the downloaded firmware and verify whether you successfully downloaded the firmware to the standby ASC disk.
 - j. Use the **dspfwrevs** command on the standby ASC to verify the correct firmware revision.
6. Complete the following substeps for all SMs to set the start and end addresses in Flash memory where the bootcode file will be written:
 - a. Use the **FlashStartAddr** and **FlashEndAddr** commands to start the Flash memory file at 0xbfc00000 and end it at 0xbfc80000.

```
◇ shelf.1.slot.type.a/sFlashStartAddr = 0xbfc00000
◇ shelf.1.slot.type.a/sFlashEndAddr = 0xbfc80000
```
7. Use the TFTP **put SM_BT_file AXIS_SM_1_slot#.BOOT** command for all SMs, where *slot#* is the number of the SM slot, to download the new bootcode for the SM.
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.

8. Use the **resetcd active_ASC** command after the standby ASC comes up to reset the active card and make the standby ASC become active with minimal service impact.
9. Use the TFTP **put SM_FW_file AXIS_SM_1_0.FW** command for all SMs, where *0* represents all relevant SM slots, to download the desired firmware for the SM. For slot-specific firmware downloads, use the TFTP **put SM_FW_file AXIS_SM_1_slot#.FW** command.
 - a. Verify the file size of the downloaded firmware and verify whether you successfully downloaded the firmware to the ASC disk.
 - b. Use the **dspfwrevs** command to verify the correct firmware revision.
10. Use the **resetcd stand-alone** command for all stand-alone SMs to reset the stand-alone cards.
11. Complete the following substeps for all redundancy groups:
 - a. Use the **resetcd secondary_SM** command and wait until the secondary is upgraded.
 - b. Use the **softswitch primary_SM** command.
 - c. Use the **softswitch secondary_SM** command.
12. Use the **dspadrxlat** command (as you did in Step 3) to ensure that the number of connections has not changed.
13. Use the **dsptotals** command for all primary and stand-alone SMs to examine the number of lines, ports, and channels after the upgrade. Compare the values to those before the download. The command also can help establish whether the configuration has remained the same.
14. Restore the ASC and SM configurations if necessary.

Procedure 12: Graceful Upgrade for 2 ASC Card Set for Versions 4.x to 4.y; 4.x to 5.x; 5.x to 5.y

This procedure applies to the following firmware versions:

- 4.x to 4.y
- 4.x to 5.x
- 5.x to 5.y

Complete the following steps:

1. Save the current ASC configuration. Perform this step for the ASC before upgrading the firmware.
2. Save the current SM configuration for each primary and stand-alone SM. Perform this step for the SM before upgrading the firmware.
3. Use the **dspadrxlat** command and note the value of the *ConnNumOfValidEntries* parameter, which indicates the number of connections.
4. Use the **dsptotals** command for all primary and stand-alone SMs. Do not change the configuration of the shelf during the upgrade. Examine the number of lines, ports, and channels before the upgrade. Examine the same configuration parameters after the upgrade to establish that a configuration has been retained.
5. Use the Trivial File Transfer Protocol (TFTP) **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new ASC bootcode into the ASC, and complete the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
 - c. Use the **switchcc** command to switch to the other ASC.
 - d. Use the TFTP **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new bootcode into the second ASC.
 - e. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.

- f. Use the **version** command to display the version of the bootcode stored in Flash memory.
 - g. Use the **donotupdatestandby** command on the active ASC.
 - h. Use the TFTP **put ASC_FW_file AXIS_ASC_STANDBY.FW** command.
 - i. Verify the file size of the downloaded firmware and verify whether you successfully downloaded the firmware to the ASC disk.
 - j. Use the **dspfwrevs** command on the standby ASC to verify the correct firmware revision.
6. Use the TFTP **put SM_BT_file AXIS_SM_1_slot#.BOOT** command for all SMs, where *slot#* is the number of the SM slot, to download the new bootcode for the SM, and complete the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
 7. Use the TFTP **put SM_FW_file AXIS_SM_1_0.FW** command for all SMs, where *0* represents all relevant SM slots, to download the desired firmware for the SM. For slot-specific firmware downloads, use the TFTP **put SM_FW_file AXIS_SM_1_slot#.FW** command.
 - a. Verify the file size of the downloaded firmware and verify whether you successfully downloaded the firmware to the ASC disk.
 - b. Use the **dspfwrevs** command to verify the correct firmware revision.
 8. Use the **resetcd standby_ASC** command to reset the standby card.
 9. Use the **resetcd active_ASC** command to reset the active card and make the standby ASC become active with minimal service impact.
 10. Use the **resetcd stand-alone** command for all stand-alone SMs to reset the stand-alone cards.
 11. Complete the following substeps for all redundancy groups:
 - a. Use the **resetcd secondary_SM** command and wait until the secondary is upgraded.
 - b. Use the **softswitch primary_SM** command.
 - c. Use the **softswitch secondary_SM** command.
 12. Use the **dspadrxlat** command (as you did in Step 3) to ensure that the number of connections has not changed.
 13. Use the **dsptotals** command for all primary and stand-alone SMs to examine the number of lines, ports, and channels after the upgrade. Compare the values to those before the download. The command also can help establish whether the configuration has remained the same.
 14. Restore the ASC and SM configurations if necessary.

Procedure 13: Downgrade for 2 ASC Card Set for Versions 4.y to 4.x; 5.x to 4.x; 5.y to 5.x

This procedure applies to the following firmware versions:

- 4.y to 4.x
- 5.x to 4.x
- 5.y to 5.x

Complete the following steps:

1. Verify compatibility.
2. Save the current ASC configuration. Perform this step for the ASC before downgrading the firmware.
3. Save the current SM configuration for each primary and stand-alone SM. Perform this step before downgrading the firmware.
4. Use the **dspadrxlat** command and note the value of the *ConnNumOfValidEntries* parameter, which indicates the number of connections.

5. Use the **dsptotals** command for all primary and stand-alone SMs. Do not change the configuration of the shelf during the downgrade. Examine the number of lines, ports, and channels before the downgrade. Examine the same configuration parameters after the downgrade to establish whether the configuration has remained the same.
 6. Use the Trivial File Transfer Protocol (TFTP) **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the desired ASC bootcode into the ASC, and complete the following substeps:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
 - c. Use the **switchcc** command to switch to the other ASC.
 - d. Use the TFTP **put ASC_BT_file AXIS_ASC_BACKUP.FW** command to download the new bootcode into the second ASC.
 - e. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - f. Use the **version** command to display the version of the bootcode stored in Flash memory.
 7. Use the TFTP **put ASC_FW_file AXIS_ASC_ACTIVE.FW** command to download the desired ASC firmware for the active ASC, and complete the following substeps:
 - a. Verify the file size of the downloaded firmware and verify the file size of the downloaded firmware. You also can check whether you successfully downloaded the firmware to the ASC disk.
 - b. Use the **dspfwrevs** command to verify the correct firmware revision.
 - c. Use the TFTP **put ASC_FW_file AXIS_ASC_STANDBY.FW** command to download the desired firmware for the standby ASC.
 - d. Verify the file size of the downloaded firmware and verify the file size of the downloaded firmware. You also can check whether you successfully downloaded the firmware to the standby ASC disk.
 - e. Use the **dspfwrevs** command on the standby ASC to verify the correct firmware revision.
 8. Use the TFTP **put SM_BT_file AXIS_SM_1_slot#.BOOT** command for all SMs, where *slot#* is the number of the SM slot, to download the desired bootcode for the SM and complete the following substeps to verify:
 - a. Use the **chkflash** command to calculate and compare the Flash checksum to ensure that the bootcode is correct.
 - b. Use the **version** command to display the version of the bootcode stored in Flash memory.
 9. Use the TFTP **put SM_FW_file AXIS_SM_1_0.FW** command for all SMs, where *0* represents all relevant SM slots, to download the desired firmware for the SM. For slot-specific firmware downloads, use the TFTP **put SM_FW_file AXIS_SM_1_slot#.FW** command. Complete the following substeps:
 - a. Verify the file size of the downloaded firmware and verify whether you successfully downloaded the firmware to the ASC disk.
 - b. Use the **dspfwrevs** command to verify the correct firmware version.
 10. Use the **clralenf** command to reset all cards on the shelf.
 11. Restore the ASC and SM configurations.
 12. Use the **dspadrxlat** command (as you did in Step 4) to ensure that the number of connections has not changed.
 13. Use the **dsptotals** command for all SMs to examine the number of lines, ports, and channels after the downgrade. Compare the values to those before the download to establish whether the configuration has remained the same.
-

Related Information

- [Upgrade and Downgrade Matrices, Concepts and Definitions](#)
 - [Cisco WAN Switching Solutions – Cisco Documentation](#)
 - [Guide to New Names and Colors for WAN Switching Products](#)
 - [Software Center – WAN Switching Software](#)
 - [Technical Support – Cisco Systems](#)
-

[Contacts & Feedback](#) | [Help](#) | [Site Map](#)

© 2008 – 2009 Cisco Systems, Inc. All rights reserved. [Terms & Conditions](#) | [Privacy Statement](#) | [Cookie Policy](#) | [Trademarks of Cisco Systems, Inc.](#)

Updated: Apr 30, 2009

Document ID: 14888
