APPENDIX A

Upgrading Your CSS Software

New software versions are periodically released for the CSS. This appendix provides information on how to upgrade your CSS with a new software release. This appendix contains the following major sections:

- Before You Begin
- Upgrading Software Considerations
- Upgrading Your CSS Software
- Updating MIBs

> **Note** When syntax changes are made to existing CLI commands, the CSS updates your startup-config file automatically with most command syntax changes. For example, the CSS automatically updates the **dnsflow disable** command in the startup-config file to the **flow-state** command. If the CSS does not update a command syntax change in a startup-config file automatically, a startup error is displayed. Refer to the *Release Note for the Cisco Series Content Services Switch* for information on which command syntax changes display startup-config file errors.

Before You Begin

Before you can upgrade your CSS, you must copy the new CSS software to your FTP server and configure an FTP server record so the CSS recognizes the server. Use the **show installed-software version-limit** command to display the maximum number of installed versions allowed on your hard disk or Flash disk.

Copying the New CSS Software

ArrowPoint Distribution Images (ADIs) of the CSS software versions are located on the Cisco Systems website (www.cisco.com). Use your customer login and password to access this page. From this location, access the page listing the versions of GZIP-compressed software, then click an image to download it. Once the image is downloaded, place it on an FTP server that the CSS can access.

Note You do not need to uncompress the GZIP-compressed software. When you copy the software, or if the upgrade script copies the software to the CSS, the CSS automatically uncompresses it.

Configuring an FTP Server Record on the CSS

Before you can copy the ADI from the FTP server to the CSS, you must create an FTP record file on the CSS identifying the ADI. The record contains the IP address, username, and password for the server. If you did not configure an FTP record before starting the upgrade script, the script prompts you to configure one.

To configure an FTP server record:

1. Log in to the CSS.

2. Access global configuration mode:

   ```
   # config
   (config)#
   ```

3. Use the **ftp-record** command to configure the default FTP server. The syntax is:

   ftp-record *ftp_record ip_or_host username* [**"***password***"**
       |**des-password** *des_pwd*] {**base_directory**}

   The options and variables for this command are:

   - *ftp_record* - Name for this FTP record file. Enter an unquoted text string with no spaces and a maximum of 32 characters.

   - *ip_or_host* - IP address or host name of the FTP server you want to access. Enter an IP address in dotted-decimal notation (for example, 192.168.11.1) or a mnemonic host name (for example, myhost.mydomain.com).

   - *username* - Valid login username on the FTP server. Enter a case-sensitive unquoted text string with no spaces and a maximum of 16 characters.

   - *password* - Password for the valid login username on the FTP server. Enter a case-sensitive, quoted text string with no spaces and a maximum of 16 characters. The CSS allows all special characters in a password except for the percent sign (%).

   - **des-password** *des_pwd* - Specifies the Data Encryption Standard (DES) encrypted password for the valid login username on the FTP server. Enter a case-sensitive, unquoted text string with no spaces and a maximum of 64 characters.

   - *base_directory* - (Optional) Base directory when using this record.

   For example:

   ```
   (config)# ftp-record DEFAULT_FTP 192.168.2.01 eng1 des-password
   serve
   ```

   You can now upgrade your CSS.

Upgrading Software Considerations

Before you upgrade your CSS software version 7.xx to software version 8.x0 for support of the SSL compression (SSL-C) module, the CSS software version 7.xx *must* be at one of the following maintenance releases or higher:

- 7.50.1.03

- 7.40.2.02

- 7.30.4.02

If the CSS is not at one of these maintenance releases, you must perform the following upgrade sequence; first upgrade the CSS to the required maintenance release and then upgrade the CSS to software version 8.x0.

If you are upgrading from a version of WebNS software earlier than version 7.40, be aware of the following Adaptive Session Redundancy (ASR) configuration restrictions in WebNS software versions 7.40 and higher:

- If your CSSs have mismatched chassis configurations (a different number of Session Processors (SPs) in each CSS), ASR will not function after the upgrade. Before you upgrade, ensure that both CSS chassis have the same number of SPs.

- If your CSSs meet the ASR requirement of having the same number of SPs in each chassis, you must upgrade both CSSs to WebNS Version 7.40.

- During the upgrade process, ASR does not function and you lose any sessions that are in progress.

Upgrading Your CSS Software

When upgrading the CSS software, you can use the upgrade script or manually enter CLI commands. The upgrade script allows you to upgrade the CSS either automatically or interactively by responding to script prompts.

Either way, the tasks that the script performs include:

- Checking to see how many installed software versions are installed on the CSS, and if the CSS contains the maximum number of installed software versions, then deleting an older software version.

- Archiving the running configuration to the startup configuration.

- Copying the new ADI to the CSS boot-image directory.

- Unpacking the new ADI.

- Copying the scripts and user profiles from the older CSS software to the new software. The copied scripts do not include Cisco-supplied scripts except default-profile.

- Setting the primary boot file to the new ADI.

- Rebooting the CSS.

We recommend that you use the upgrade script because the upgrade script ensures that the existing scripts and user profiles are copied to the new software.

When manually upgrading the CSS software, you must enter CLI commands to perform the same tasks that the upgrade script would perform.

This section includes the following topics:

- Using the Upgrade Script

- Manually Upgrading the CSS Software

Using the Upgrade Script

The upgrade script allows you to upgrade your CSS without having to enter any CLI commands. There are two ways to run the script:

- Automatically Running the Upgrade Script

- Interactively Using the Upgrade Script

If the upgrade script fails while upgrading the CSS to the same version of software that is currently running, the CSS software directory will be incomplete. To reinstall the software, you must upgrade the CSS manually (that is, use FTP to transfer the .adi to the CSS and perform a manual unpack).

Automatically Running the Upgrade Script

You can run the upgrade script to perform the software upgrade without having to enter any information. The script automatically:

- Checks to see how many installed software versions are installed on the CSS. You can install a maximum of two software versions on the CSS. If the CSS contains the maximum number of installed software versions, the script deletes an older version.

    Note The script does not prompt you to delete a version of software that you configured as the primary or secondary boot file. On a disk-based system, you may need to quit and then deselect the primary or secondary boot file before continuing with the upgrade.

- Archives the running configuration to the startup configuration.
- Copies the new ADI to the CSS boot-image directory.
- Unpacks the new ADI.
- Copies the scripts and user profiles from the older CSS software to the new software. The copied scripts do not include Cisco-supplied scripts except default-profile.
- Sets the primary boot file to the new ADI.
- Reboots the CSS.

To upgrade your CSS software using the upgrade script:

1. Log in to the CSS.

2. Copy any changes in your current user profile to the scripts directory. During the upgrade, the upgrade script copies the contents of this directory including user profiles into the script directory of the new software image.

    To copy any changes to your current user profile to the scripts directory, use the **save_profile** alias command. For example, enter:

    ```
    # save_profile
    ```

3. Rename any Cisco-supplied scripts that you changed. The upgrade script does not overwrite the Cisco-supplied scripts in the script directory of the new software image with the changed versions of the scripts, except the default-profile script.

If the upgrade script detects differences between the old version of the default-profile script and the new version, it renames the new version default-profile.new and copies the old version into the script directory of the new software image.

✎

Note   If the default-profile.new script exists in the old script directory, the upgrade script does not copy this script to the script directory of the new software image.

4. Start the upgrade script and put the name of the ADI and its extension in quotes.

- If you are using a GZIP-compressed ADI from the FTP server, include the **.gz** file extension. For example:

    # **upgrade "sg0730002.adi.gz"**

- If you are using an uncompressed version of the ADI from the FTP server, include the **.adi** file extension. For example:

    # **upgrade "sg0730002.adi"**

If you did not configure a default FTP record before starting the upgrade script, the script prompts you to configure one. At the prompts, enter the FTP server information where you copied the upgrade ADI

When you configure a default FTP record, you see the following information during the upgrade:

```
Current Version:sg0730002

*** You must remove an installed version to upgrade. ***

Attempting to delete sg0720003

archive running-config startup-config

Attempting ftp of sg0740002.adi:
#     copy ftp DEFAULT_FTP ${new_version_adi} boot-image
Copying (-) 57,241,012
Completed successfully.
#(config-boot)#
unpack ${new_version_adi}
Unpacking(/) 99%
(config-boot)#
```

The script copies the scripts and user profiles from the old script directory to the script directory of the new software image. Note that *script_name* is the name of the current script being copied.

```
Copying scripts from c:/sg0730002/script/ to c:/sg0740002/script/
Working (/)
Copying script_name... Done
```

> **Note** If the copy operation fails, the CSS displays the following messages and then exits the upgrade process:
> ```
> Error: Copy of script_name failed!
> Script copy failed, upgrade aborted!
> ```

If an old script has the same name as a Cisco-supplied script but its contents differ, the following message appears:

```
script_name differs between images
```

The upgrade script does not overwrite the Cisco-supplied scripts in the script directory of the new software image with the older versions of the scripts, except the default-profile script. If the upgrade script detects an older version of the default-profile script, the script renames the newer default-profile script as default-profile.new and then copies the older version of the default-profile script to the script directory of the new software image. For example:

```
Saving c:/sg0740002/script/default-profile.new... Done
Copying default-profile to new image... Done
```

The upgrade script sets the ADI as the primary boot file and reboots the CSS.

```
setting primary boot-file sg0740002

rebooting
```

The CSS automatically performs a Flash upgrade, if necessary, and then boots the new image.

5. After you upgrade and reboot a CSS 11506 that contains a passive SCM, use the **passive sync** command in boot-config mode (or the **passive sync** macro command) immediately after upgrading your CSS software to synchronize the boot configurations on the redundant SCMs. Refer to Chapter 2, Specifying the CSS Boot Configuration, for details on configuring a boot configuration record for a passive SCM.

6. If the CSS does not have a startup-config file, it uses the file in the archive directory. To restore the startup-config file on the CSS, use the **restore** *filename* **startup-config** command. For example, to restore the startup-config file in the archive directory as the startup-config file on the CSS, enter:

```
# restore startup-config startup-config
```

Interactively Using the Upgrade Script

The upgrade script allows you to enter information and make selections by responding to prompts as it runs. Before the script performs the upgrade, it prompts you to:

- Remove ADIs from the CSS if the script detects two installed versions on a hard disk-based system or on a Flash disk-based system
- Enter the version of the new ADI
- Set the primary boot-file to the new ADI
- Reboot the CSS with the ADI you are installing after the upgrade is done
- Archive the running configuration to the startup configuration

The script automatically copies the scripts and user profiles from the older CSS software to the new software. The copied scripts do not include Cisco-supplied scripts except default-profile.

To use the interactive version of the script:

1. Log in to the CSS.

2. Copy any changes in your current user profile to the scripts directory. During the upgrade, the upgrade script copies the contents of this directory including user profiles into the script directory of the new software image.

   To copy any changes to your current user profile to the scripts directory, use the **save_profile** alias command. For example, enter:

```
# save_profile
```

3. Rename any Cisco-supplied scripts that you changed. The upgrade script does not overwrite the Cisco-supplied scripts in the script directory of the new software image with the changed versions of the scripts, except the default-profile script.

If an old script has the same name as a Cisco-supplied script but its contents differ, the following message appears:

```
script_name differs between images
```

If the upgrade script detects differences between the old version of the default-profile script and the new version, it renames the new version as default-profile.new and copies the old version into the script directory of the new software image.

> **Note**   If the default-profile.new script exists in the old script directory, the upgrade script does not copy this script to the new script directory.

4. Start the upgrade script. For example:

    ```
    # upgrade
    ```

5. If a default FTP record is configured on the CSS, respond to the following prompt:

    ```
    Would you like to use this record? [y n q]? y
    ```

    If you did not configure a default FTP record before starting the upgrade script, the script prompts you to configure one. At the prompts, enter the FTP server information where you copied the upgrade ADI

    The script displays the current version of the ADI.

    ```
    Current Version: sg0730002 (Official)
    ```

    If the script detects the maximum number of ADIs, a message informs you to remove an ADI. Then the script prompts you to remove an older ADI. For example:

    ```
    *** You must remove an installed version to upgrade.***

    remove sg0720003[y n q]?
    ```

    The script does not prompt you to delete a version of software that you configured as the primary or secondary boot file. On a Flash disk-based system, you may need to quit and then deselect the primary or secondary boot file before continuing with the upgrade.

6. Remove the ADI, if necessary.

   • Enter **y** to remove the displayed ADI version.

   • Enter **n** for the script to display another version to remove.

   • Enter **q** to exit from the script.

   ```
   remove sg0720003 [y n q]? y

   Attempting to delete sg0720003
   ```

7. Enter the filename and extension of the GZIP-compressed ADI version to install at the prompt, and verify the information you entered. If you are using an uncompressed version of the ADI from the FTP server, include the **.adi** file extension (for example, sg0740002.adi). For example:

   ```
   Please Enter Version to Install:sg0740002.adi.gz

   Upgrade to Version sg0740002? [y n q] y
   ```

8. Determine whether to set the ADI as the primary boot file.

   • Enter **y** to set the ADI as the primary boot-file and change the CSS configuration.

   • Enter **n** to keep the same primary boot-file configuration.

   ```
   Set primary boot-file to Version sg0740002? [y n q] y
   ```

9. Determine whether to have the CSS reboot with the ADI.

   • Enter **y** to reboot the CSS with this ADI after the upgrade is done.

   • Enter **n** to not reboot the CSS with the ADI after the upgrade is done.

   ```
   Reboot with Version sg0740002? [y n q] y
   ```

10. Determine whether to have the CSS archive the contents of the running-config file to the startup-config file.

    • Enter **y** to archive the contents of the running-config file to the startup-config file.

    • Enter **n** to keep the same startup configuration.

    ```
    Archive running-config to startup-config? [y n q] y

    archive running-config startup-config
    ```

The upgrade script copies the ADI from the FTP server, then unpacks and installs it.

```
Attempting ftp of sg0740002.adi.gz:

#     copy ftp DEFAULT_FTP ${new_version_adi} boot-image

Copying (-) 57,241,012

Completed successfully.
#
(config-boot)# unpack ${new_version_adi}
unpacking(/) 99%

(config-boot)#
```

The upgrade script copies the scripts and user profiles from the old script directory to the directory of the new software image. Note that *script_name* is the name of the current script being copied.

```
Copying scripts from c:/sg0730002/script/ to c:/sg0740002/script/
Working (/)
Copying script_name... Done
```

✎
Note   If the copy operation fails, the CSS displays the following messages and then exits the upgrade process:
```
Error: Copy of script_name failed!
Script copy failed, upgrade aborted!
```

If an old script has the same name as a Cisco-supplied script but its contents differ, the following message appears:

```
script_name differs between images
```

The upgrade script does not overwrite the Cisco-supplied scripts in the script directory of the new software image with the older versions of the scripts, except the default-profile script. If the upgrade process detects an older version of the default-profile script, the script renames the newer default-profile script as default-profile.new and then copies the older version of the default-profile script to the script directory of the new software image. For example:

```
Saving c:/sg0740002/script/default-profile.new... Done
Copying default-profile to new image... Done
```

Then the upgrade script sets the ADI as the primary boot file.

```
setting primary boot-file sg0740002
```

11. If you decided to reboot the CSS with the installed ADI in Step 8, the CSS reboots automatically. If you made the ADI the primary boot file and archived the contents of the running-config file to the startup-config file, the CSS automatically performs a Flash upgrade, if necessary, and then boots the new image.

To manually reboot the system, enter the following commands:

```
(config)# boot
(config-boot)# reboot
```

12. After you upgrade and reboot the software in a CSS 11506 that contains a passive SCM, use the **passive sync** command in boot-config mode (or the **passive sync** macro command) immediately after upgrading your CSS software to synchronize the boot configurations on the redundant SCMs. For details on configuring a boot configuration record for a passive SCM, see Chapter 2, Specifying the CSS Boot Configuration.

13. If the CSS does not have a startup-config file, it uses the file in the archive directory. To restore the startup-config file, use the **restore** *filename* **startup-config** command. For example, to restore the startup-config file in the archive directory as the startup-config file on the CSS, enter:

```
# restore startup-config startup-config
```

Manually Upgrading the CSS Software

If desired, you can manually enter CLI commands to upgrade the CSS. Make sure you configure a default FTP server, as described in the "Before You Begin" section.

To manually upgrade the software version on your CSS:

1. Log in to the CSS.

2. Remove an older version of the ADI from the CSS if there are two installed versions.

⚠
Caution   Do not remove the ADI currently running on the CSS. Use the **version** command to see the currently running software version.

To remove an ADI:

a. List the ADIs on the CSS.

```
(config)# show installed-software
sg0720104
sg0730003
```

b. Access boot mode:

```
(config)# boot
(config-boot)#
```

c. Use the **remove** command to remove the ADI.

```
(config-boot)# remove sg0720104
```

3. Archive your running configuration to the startup config file. For example:

```
(config-boot)# <Ctl-z>
# archive running-config startup-config
```

You can also use the **save_config** alias to archive your startup-config file. To view all available aliases, use the **show aliases** command.

4. Archive your custom scripts and user-profile files from the CSS scripts directory to the archive directory. Since the upgrade process installs the Cisco-supplied scripts with the new software but does not overwrite the files in the archive directory, archiving your custom script and user-profile files allows you to save them for use with the new software. After the upgrade, you can restore these files to the scripts directory.

To archive each file to the archive directory, use the **archive script** command. The syntax for this command is:

archive script *script_filename* {*archive_filename*}

The variables are as follows:

- *script_filename* - The filename of the script to archive. To see a list of scripts, enter:

  # archive script ?

- *archive_filename* - (Optional) The name you want to assign to the archive file. Enter an unquoted text string with a maximum of 32 characters.

For example, to archive the admin-profile file from the scripts directory to the archive directory, enter:

```
# archive script admin-profile
```

To copy any changes to your current user profile to the scripts directory and then archive the profile to the archive directory, use the **save_profile** alias command. For example, enter:

```
# save_profile
```

5. Copy the new ADI to the CSS as the boot-image. If you are copying an uncompressed version of the ADI from the FTP server, include the .adi file extension (for example, sg0740002.adi).

```
(config-boot)# <Ctl-z>
# copy ftp DEFAULT_FTP sg0740002.adi.gz boot-image
```

DEFAULT_FTP is the FTP record file defined in the "Configuring an FTP Server Record on the CSS" section.

> **Note** When you copy a GZIP-compressed ADI onto the CSS, the CSS automatically uncompresses it.

6. Unpack the ADI.

```
(config)# boot
(config-boot)# unpack sg0740002.adi
```

7. Set the new ADI as the primary boot file and install it. For example:

```
(config-boot)# primary boot-file sg0730003
```

8. Reboot the system.

```
(config)# boot
(config-boot)# reboot
```

The CSS automatically performs a Flash upgrade, if necessary, and then boots the new image.

9. After you upgrade and reboot the software in a CSS 11506 that contains a passive SCM, use the **passive sync** command in boot-config mode (or the **passive sync** macro command) immediately after upgrading your CSS software to synchronize the boot configurations on the redundant SCMs. Refer to Chapter 2, Specifying the CSS Boot Configuration, for details on configuring a boot configuration record for a passive SCM.

10. Use the **restore** command to restore the startup-config file, custom scripts, and user-profile files previously archived in the CSS archive directory. To see a list of files in the archive directory, enter:

    restore ?

    If the CSS does not have a startup-config file, it uses the file in the archive directory. To restore the startup-config file, use the **restore** *filename* **startup-config** command. For example, to restore the startup-config file in the archive directory as the startup-config file on the CSS, enter:

    # **restore startup-config startup-config**

    To restore each custom script and user profile file to the script directory, use the **restore** *filename* **script** command. For example, to restore the admin-profile filename to the CSS script directory, enter:

    # **restore admin-profile script**

Updating MIBs

Typically, MIBs do not change for maintenance or sustaining releases. However, CSS Enterprise MIBs are included in the CSS GZIP file. During the software upgrade, the MIBs are loaded into the CSS /mibs directory.

We recommend that you always update the MIBs after a software upgrade. To update the CSS MIBs on your management station after you upgrade the CSS:

1. Use FTP to transfer the MIBs from the CSS MIBs (/v1 or /v2) directory to your management station.

2. Unload the MIBs from the management application.

3. Load the MIBs into the management application.

Refer to Chapter 5, Configuring Simple Network Management Protocol (SNMP), for information on CSS Enterprise MIBs.