



Updating Device Firmware

From the WLSE, you can update (or downgrade) firmware on Cisco Aironet 1200 series, 340 series, and 350 series access points and on Cisco Aironet 350 series bridges. The Firmware tab allows you to:

- Import firmware to the WLSE and manage the firmware stored on the WLSE.
- Upload firmware from the WLSE to access points and bridges.
- Use a TFTP server to update access points and bridges in remote locations

The subtabs under Firmware are:

- Images—See [Managing Firmware Images, page 4-1](#)
- Jobs—See [Managing Firmware Jobs, page 4-9](#)



Note

One or both of these subtabs may not be visible to some users.

Managing Firmware Images

The options under the Images subtab allow you to import images to the WLSE from the client desktop or from Cisco.com and manage the images on the WLSE. This section contains information about:

- Viewing images—See [Viewing Images on the WLSE, page 4-2](#)
- Editing images—See [Editing Image Details on the WLSE, page 4-3](#)
- Deleting images—See [Deleting Images from the WLSE, page 4-4](#)

- Importing images—See [Importing Images, page 4-4](#)
- Downloading images to a remote TFTP server—See [Using a Remote TFTP Server for Image Upload, page 4-9](#)

Related Topic

[Managing Firmware Jobs, page 4-9](#)

Viewing Images on the WLSE

You can view a list of images stored on the WLSE or view details on selected images.

Procedure

Step 1 Select **Firmware > Images**. The Firmware Images selector appears, showing the images that have been downloaded to the WLSE.

Step 2 To view the list of available images for a type of device, expand its folder.



Note Images that you download to the WLSE are automatically listed in the Firmware Images selector.

Step 3 To view details on an image, select the image. The Image Details window opens, showing the image name, image version, image size, and a description.

Related Topic

[Editing Image Details on the WLSE, page 4-3](#)

Editing Image Details on the WLSE

Procedure

- Step 1** Select **Firmware > Images**. The Firmware Images selector appears.
- Step 2** Expand the folder that contains the image you want to edit, then select the image. The Image Details window opens.
- Step 3** You can edit the image name, image version, device type, and description:

Table 4-1 Image Details

Field	Description
Name	By default, the name of the image file or of the image file in a zipped file.
Device Type	The device type to which the firmware applies. If you change the device type of an image, the image is removed from the former device type folder and added to the new one. For example, if you change the device type from AP340 to AP350, the image is removed from the AP340 folder and added to the AP350 folder.
Version	The image version. Be careful when changing the version; proper uploading of firmware to devices requires accurate version information. You can enter the version in uppercase or lowercase.
Size	Size of the image (read-only field).
Description	This field is blank by default.

- Step 4** When you finish editing, click **Save**.

Related Topic

[Deleting Images from the WLSE, page 4-4](#)

Deleting Images from the WLSE

Procedure

- Step 1** Select **Firmware > Images**. The Firmware Images selector appears.
- Step 2** Expand the folder that contains the image you want to delete, then select the image. The Image Details window opens.
- Step 3** Click **Delete**, then click **OK**. The image is deleted from the list of images in the folder.
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Related Topics

- [Viewing Images on the WLSE, page 4-2](#)
- [Editing Image Details on the WLSE, page 4-3](#)

Importing Images

This option allows you to:

- Download images to the WLSE from the desktop—see [Importing Images from the Client System Desktop to the WLSE, page 4-5](#).
- Download images to the WLSE directly from Cisco.com—see [Importing Images Directly from Cisco.com to the WLSE, page 4-7](#).



Note

Even if you are uploading images from a remote TFTP server, you must still import the images to the WLSE.

Related Topics

- [Viewing Images on the WLSE, page 4-2](#)
- [Editing Image Details on the WLSE, page 4-3](#)

Importing Images from the Client System Desktop to the WLSE

Procedure

- Step 1** Download the desired firmware images to your client system from Cisco.com. You can download firmware images from the following URL:
<http://www.cisco.com/public/sw-center/sw-wireless.shtml>



Note Only the combined images from Cisco.com are supported for importing to the WLSE. If you download an image component from another site and then try to import a component, the operation will fail.

For information about supported versions of images, see the WLSE Supported Devices Table on Cisco.com.

- Step 2** Select **Firmware > Images > Import > From Desktop**. The Desktop Image window appears. Complete the following:

Table 4-2 Desktop Import Window

Field	Description
Device Type	Select the device type from the list.
Version	Enter the image version. Be careful when entering the version; proper uploading of firmware to devices requires accurate version information. You can enter the version in uppercase or lowercase characters.

Table 4-2 Desktop Import Window (continued)

Field	Description
File Location	Enter the path to the image on the client system or click Browse . Images for Cisco Aironet 350 wireless bridges may be named as images for access points (that is, names begin with <i>AP</i>). To avoid confusion, you can rename these images (see Editing Image Details on the WLSE, page 4-3 .)
Overwrite Existing Image	Select this checkbox if you are importing an image that is already stored on the WLSE. Otherwise, the image import will fail if the same image is already stored on the WLSE.



Note If the image file is in zip format, it will be automatically unzipped during the import operation.

Step 3 Click **Import**. An informational popup window appears. *Do not close the popup window until you receive a message that the import was successful or the import failed.*

If the import is successful, a confirmation message appears and the image is saved on the WLSE.

If the import fails, an error message appears. The import may fail for one of the following reasons:

- The image you are trying to import is not valid. An error message appears.
- There is insufficient space on the WLSE to store images.
- You specified an image that already exists in the image library and you did not select the Overwrite Existing Image checkbox in Step 2.

Step 4 Repeat Steps 2 and 3 to import more images.

Step 5 For information on uploading firmware to access points and bridges, see [Managing Firmware Jobs, page 4-9](#).

Importing Images Directly from Cisco.com to the WLSE

Procedure

- Step 1** Select **Firmware > Images > Import > From Cisco.com**. The Cisco.com Import window is displayed. Complete the following:

Table 4-3 Cisco.com Import Window

Field	Description
Cisco.com Username	Your Cisco.com username.
Cisco.com Password	Your Cisco.com password
Proxy IP/Hostname ¹	The IP address or hostname of the proxy server used to mediate between the web browser and Cisco.com and the proxy port used by the proxy server (if required on your network).
Proxy Port	
Proxy Username	The username and password for contacting the proxy server (if required on your network).
Proxy Password	

1. Some proxy server software does not work properly with importing firmware from Cisco.com. If you have problems using your proxy server with this feature, download the firmware image to your desktop from Cisco.com and import the image from the desktop (see [Importing Images from the Client System Desktop to the WLSE](#), page 4-5).

- Step 2** To clear all of your entries in the window, click **Clear**.
- Step 3** To log into Cisco.com, click **Login**. The Cisco.com Import window changes to allow you to view the firmware images available on Cisco.com.
- Step 4** Click one of the entries in the Device Type column; the firmware versions available on Cisco.com are displayed. Select a firmware version from the entries in the Versions column; the image details are displayed, along with the **Add** button.



Note Images for Cisco Aironet 350 wireless bridges are listed in the Import window as Cisco Aironet 350 access point images (that is, the names begin with *AP*). To avoid confusion, you can rename these images after importing them. For more information, see [Editing Image Details on the WLSE, page 4-3](#).

Step 5 To add the image to the Selected Images list, click **Add**.

Step 6 Repeat steps 4 and 5 to add more images.

Step 7 To remove an image from the Selected Images list, click **Remove**.

Select the Overwrite Existing Images checkbox if you are importing an image version that is already stored on the WLSE. Otherwise, the image import will fail if the same version is already stored on the WLSE.

Step 8 Click **Import**. An informational popup window appears. *Do not close the popup window until you receive a message that either says the import was successful or the import failed.*

If the import is successful, a confirmation message appears and the image is saved on the WLSE.

If the import fails, an error message appears. The import may fail for one of the following reasons:

- The image you are trying to import is not valid. In that case, an error message appears.
- There is insufficient space on the WLSE to store images.
- You specified an image that already exists in the image library and you did not select the Overwrite Existing Image checkbox in Step 7.

Step 9 For information on uploading firmware to access points and bridges, see [Managing Firmware Jobs, page 4-9](#).

Using a Remote TFTP Server for Image Upload

You can download firmware images to a TFTP server and then upload them to access points and bridges. This method of uploading may be quicker than uploading from the WLSE if you have a slow link between the WLSE and the access points and bridges in your network.

To download firmware images, go to the following URL:

<http://www.cisco.com/public/sw-center/sw-wireless.shtml>

To make sure you are downloading a supported firmware release, see the Supported Devices Table for the CiscoWorks 1105 Wireless LAN Solution Engine on Cisco.com.

Use the normal procedure for creating firmware jobs described in [Managing Firmware Jobs, page 4-9](#). You specify the TFTP server and provide the filename in the last step; see [Finishing the Job, page 4-14](#).

**Note**

Even though you may be uploading images from a remote TFTP server, you still need to import those images to the WLSE. For information on importing images to the WLSE, see [Importing Images, page 4-4](#).

Managing Firmware Jobs

This window allows you view a list of all the firmware jobs in their various states. It also allows you to create, edit, filter, and delete firmware jobs.

The topics covered in this section are:

- [Creating a Firmware Job, page 4-18](#)
- [Using the Job Functions, page 4-18](#)
 - [Viewing Jobs by Job State, page 4-19](#)
 - [Filtering Jobs, page 4-21](#)
 - [Editing a Job, page 4-21](#)
 - [Deleting a Job, page 4-22](#)
 - [Viewing Job Run Details, page 4-22](#)

Related Topic

[Managing Firmware Images, page 4-1](#)

Job Choices

When you create or edit a firmware upload job, the following tasks appear in the left pane of the Jobs window. These tasks must be completed whether you are uploading images from the WLSE or from a remote TFTP server. You can omit scheduling the job and edit the job later to provide a schedule. You can complete tasks 1 through 4 in any order.

1. **Job Name**—See [Naming the Job, page 4-10](#).
2. **Select Image**—See [Selecting the Image, page 4-11](#).
3. **Select Devices**—See [Selecting Devices, page 4-12](#).
4. **Schedule Job**—See [Scheduling the Job, page 4-13](#).
5. **Finish**—After completing tasks 1 through 4, you validate and save the job—See [Finishing the Job, page 4-14](#).

**Caution**

Clicking on a any subtab (for example, Jobs or Images) before you have saved your entries in the Jobs window will cause the window to reset and you will lose all the information you entered.

Naming the Job

Procedure

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- Step 1** Click **Job Name**. The Job Name dialog box appears.

**Note**

Clicking **Clear** removes all the current entries in the window and any entries you have made in other Job windows up until that point.

Step 2 Complete the following:

Table 4-4 Job Name Parameters

Field	Description
Job Name	Enter a name for the job. For guidelines on naming jobs, see Naming Guidelines, page A-1 .
Description	Enter a description of the job. For guidelines on entering descriptions, see Naming Guidelines, page A-1 .
Protocol	Select the protocol to be used for the job: HTTP or SNMP.

Step 3 From the menu in the left pane, go to the next step, Select Image. See [Selecting the Image, page 4-11](#).

Selecting the Image

Procedure

- Step 1** Click **Select Image**. The Firmware Images selector appears.
- Step 2** Expand the device folder and select the image you want to upload. The Image Detail window opens.
- If the desired image does not appear, you must import it to the WLSE. For more information, see [Importing Images, page 4-4](#).
- Step 3** From the menu in the left pane, go to the next step, Select Devices. See [Selecting Devices, page 4-12](#).
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Selecting Devices

Procedure

Step 1 Click **Select Devices**. The Select Devices window appears. All managed devices are listed in the Device selector in the middle pane.



Note Clicking **Clear** removes all the current entries in the window and any entries you have made in other Job windows up until that point.

Step 2 To search for devices:

- From the list in the search area located in the middle pane, select the method for searching: by device name or IP address.
- Enter the IP address or name. You can use asterisks (*) as wildcards. An asterisk denotes any number of characters in a name or an entire octet in an IP address; for example, *AP or 172.*.*.*.
- Click **Go**. The matching devices appear in the Search Results folder in the device selector.

Step 3 To select devices for image upload, expand a folder that contains the devices you want to include in the job. Then click the device group folder. The group and all its devices are added to the Available Devices list.

For more information on device grouping, see [Managing Groups, page 6-37](#).

Step 4 From the Available Devices list, select a group or individual devices, then click **Add**. The devices appear in the Selected Devices list box.

The devices in the Selected Devices list box will receive the image you select.

Step 5 To add devices from other groups, repeat steps 3 and 4.

Step 6 To remove devices, select them from the Selected Devices list, then click **Remove**.

Step 7 From the menu in the left pane, go to the next step, Schedule Job. See [Scheduling the Job, page 4-13](#).

Related Topic

[Managing Groups, page 6-37](#)

Scheduling the Job

When scheduling a firmware job, you can select Run Now to start the job in 2 minutes, or you can schedule the job for a future date and time.

**Note**

You can save a job without scheduling it. You can edit the job later to add the scheduling information.

Procedure

Step 1 Click **Schedule Job**. The Schedule Job dialog box appears.

**Note**

Clicking **Clear** removes all the current entries in the window and any entries you have made in other Job windows up until that point.

Step 2 Schedule the job as follows:

- To run the job now, select the **Run Now** checkbox. The job will begin running immediately.

**Note**

Selecting this option ignores any date and time that you enter from the Start Date and Start Time lists.

- To schedule the job for a later date and time, select the month, day, and year from the Start Date lists and select the hour and minutes from the Start Time lists.

Step 3 From the menu in the left pane, go to the next step, Finish. See [Finishing the Job, page 4-14](#).

Finishing the Job

To validate, save, and add the job to the list of scheduled jobs:

Procedure

Step 1 Click **Finish** in the left pane to complete job creation. The Finish dialog box appears in the right pane. This dialog consists of an [Email settings section](#), a [Remote server settings section](#), a [Warnings section](#) and a [Validate and Save section](#).

Step 2 **Email settings section**

If you want email notification of job completion, complete the Email settings section:

Table 4-5 *Email Notification Settings for Firmware Jobs*

Field	Description
On completion, mail to	Enter a comma-separated list of email addresses to be notified when the job completes.
Email only if job fails	Select this checkbox if you want recipients to be notified only if the job fails.



Tip If email notification is not working, you may need to set up the mail route by specifying an SMTP server. See [Specifying an SMTP Mail Server, page 6-71](#).

Step 3 Remote server settings section

If images will be uploaded from a remote TFTP server (instead of being uploaded from the WLSE), complete the Remote server settings section:

Table 4-6 Remote TFTP Server Settings for Firmware Jobs

Field	Description
Use remote server	Select this checkbox to upload the image from a TFTP server. The remote server must have a tftp server running.
Remote server IP address	Enter the IP address of the TFTP server or select a server from the list of recently used servers. Every time you enter a remote server IP address, the address will be added to the Recently used servers list.
Recently used servers	
Remote server filename	The filename of the firmware image file on a remote server. The image file must reside in the main directory for TFTP access on the server.

Step 4 Warnings section

If warnings are detected for any devices during Validate and Save (Step 5), the job will fail for those devices unless you select the **Ignore Warnings** checkbox. If you prefer not to ignore warnings while the job runs, you can correct the warning conditions instead and then validate again.

Step 5 Validate and Save section

- a. Click **Validate** to verify that the job will run successfully. If you missed one or more of the numbered steps in the left pane, error messages are displayed (for example, *Devices not Selected*). Correct these errors and click **Validate** again. The Job Validation Summary window opens. For more information on this window, see [Job Validation Summary Window Details, page 4-17](#).

**Note**

It is recommended that you always validate a job before saving it. Also, you should check the image release notes on Cisco.com for the latest caveat information on the image.



Note If any fields in the Job Validation Summary window are marked *Error*, the job will fail for those devices unless you correct the error situation.

- b. Click **Save** to add the job to the list of scheduled jobs. The screen refreshes and the Job Save Summary window appears, showing the following information:

Table 4-7 Job Save Summary Window

Field	Description
Name	Name of the job.
Description	Job description, if any.
Image	Name of the image selected for the job.
Devices	Names of the devices selected for the job.
Groups	Names of groups selected for the job.
Schedule	Scheduled date and time for the job, or <i>No Schedule</i> if the job has not been scheduled.

- Step 6** To view the status of the job, select **Firmware > Jobs**. For more information, see [Viewing Jobs by Job State, page 4-19](#).
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Related Topics

- [Deleting a Job, page 4-22](#)
- [Viewing Jobs by Job State, page 4-19](#)
- [Viewing Job Run Details, page 4-22](#)

Job Validation Summary Window Details

The Job Validation Summary window shows the following information:

Table 4-8 Job Validation Summary Window

Field	Description
Image Selected, Version, and Device Type	The image name, image version, and device type that you selected when creating the job.
Image version validation	Whether the image version is valid.
Image known bugs validation	Whether there are any major caveats for this image.
Job protocol validation	Whether the job protocol (HTTP or SNMP) you selected is supported on this device.  Note Firmware update via SNMP is supported for firmware versions 11.08T and later.
Device-Image validation	Whether the image you selected is valid for this device. This field is marked <i>Error</i> if the image is not valid for the type of device you selected.

The Job Validation Summary fields are marked as follows:

- *Passed*—No problems were found.
- *Information*—No problems were found, but there is information you might want to know. For example, the image version you selected is already installed on the device.
- *Warning*—The operation is permitted but may not be advisable; for example, downgrading to an earlier image.

The selected image will not be applied to devices that have warnings associated with them, unless you deal with the warnings before saving the job. Use one of the following methods to deal with the warnings:

- Edit your job choices to fix the problems that caused the warnings.

- Select the **Ignore Warnings** checkbox in the Warnings section of the Finish dialog box. By default, warnings are not ignored.
- *Error*—The operation is not permitted. The image will not be applied to devices that have errors associated with them. It is recommended that you eliminate the errors before saving the job. If you save a job with errors, the corresponding devices will be ignored during the job run.

Creating a Firmware Job



Note

Your login determines whether you can use this option.

Procedure

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- Step 1** Select **Firmware > Jobs**. The Jobs window appears.
- Step 2** Enter a name for the job and click **Create Job**.
For guidelines on job names, see [Naming Guidelines, page A-1](#).
- Step 3** The window refreshes with the Job Creation menu in the left pane and the Job Name dialog box in the right pane.
- Step 4** Select the numbered choices in the left pane to create a job. For information on these choices, see [Job Choices, page 4-10](#).
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Using the Job Functions

To view job status, select **Firmware > Jobs**. The Jobs window appears. This window allows you to view job status, filter a job, edit a job, view details about a job, and undo a job.

Job data is retained for 30 days by default. To change the retention period, see [Managing System Parameters, page 6-73](#).



Note

Your login determines whether you can use these options.

The topics covered in this section are:

- [Viewing Jobs by Job State, page 4-19](#)
- [Filtering Jobs, page 4-21](#)
- [Editing a Job, page 4-21](#)
- [Deleting a Job, page 4-22](#)
- [Viewing Job Run Details, page 4-22](#)

Related Topic

[Creating a Firmware Job, page 4-18](#)

Viewing Jobs by Job State

Procedure

- Step 1** From the Job State list, select the type of job whose status you want to check. The window refreshes and the jobs are displayed.

The information displayed depends on which Job State you selected: [Scheduled](#), [Unscheduled](#), [Running](#), or [All](#):

- Scheduled

Field	Description
Job Name	The job name.
Next Schedule	For scheduled jobs, this indicates when the job will run. For completed jobs, this is the time the job ran.
Last Run Status	The status of the last run.

- Unscheduled

Field	Description
Job Name	The job name.

Field	Description
Next Schedule	For scheduled jobs, this indicates when the job will run. For completed jobs, this is the time the job ran.
Last Run Status	The status of the last run.

- Running

Field	Description
Job Name	The job name.
Job Start Time	The time the job started.
Percent Complete	The percent of the job that has completed running.
Next Schedule	Firmware jobs are not recurring.

- All

Field	Description
Job Name	The job name.
Job State	The state of the job. Note A job in the DidNotStart state must be rescheduled.
Next Schedule	For scheduled jobs, this indicates when the job will run. For completed jobs, this is when the job ran.
Last Run Status	The status of the job the last time it ran.

Step 2 To sort table data, click on the column heading by which you want to sort the data:

- A triangle indicates ascending order.
- An upside-down triangle indicates descending order.
- No triangle indicates that the data is not sorted.

Step 3 You can do any of the following:

- Filter the job—See [Filtering Jobs](#), page 4-21.
- Edit the job—See [Editing a Job](#), page 4-21.

- Delete the job—See [Deleting a Job](#), page 4-22.
 - View job run details—See [Viewing Job Run Details](#), page 4-22.
 - Refresh the screen—Click **Refresh**.
-

Filtering Jobs

Use this option to display a limited set of jobs, making it easier to search for a particular job by name.

Procedure

- Step 1** Click **Filter Job**. The Filter Job dialog box appears.
- Step 2** Enter the name, or part of the name. You can use % as a wildcard: for example, entering %name% displays all the jobs that contain the word “name.”
- Step 3** Click **Apply filter**. The Job window refreshes and the matching jobs are displayed in the Jobs list.



Note The filter remains in effect until the page is refreshed.

Editing a Job

Use this option to edit jobs from the displayed list of jobs.

Procedure

- Step 1** From the list of jobs, select the job that you want to edit.
- Step 2** Click **Edit**. The Job Name dialog box appears.
- Step 3** Select choices in the Job Creation Menu. For descriptions of the choices, see [Job Choices](#), page 4-10.
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Deleting a Job

Use this option to delete jobs from the displayed list of jobs. Jobs that are scheduled, unscheduled, completed, or did not start can be deleted. Jobs that are running cannot be deleted.

Procedure

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- Step 1** From the list of jobs, select the job that you want to delete.
 - Step 2** Click **Delete**.
 - Step 3** Click **OK** in the popup windows.
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Viewing Job Run Details

Use this option to view details about a job.

Procedure

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- Step 1** From the All Jobs table displayed in the **Firmware > Jobs** window, select a job, then click **Job Run Detail**.
 - Step 2** The details window appears with the Job Runs table:

Field	Description
Select Run	Used to select a job to see its details.
Job Start Time	The time the job started.
Job End Time	The time the job ended.
Job Status	The status of the job.
Percent Complete	The percent of the job that completed.

Step 3 Do any of the following:

- To view details for a particular job run, select the job, then click **Show Run Details**. The Job Run details table appears. For more information on this table, see [Job Run Details Table, page 4-23](#).)
 - To view the job run log, click **Job Run Log**. A window displays all the details for the selected job number.
 - To refresh the table, click **Refresh**.
-

Job Run Details Table

The Job Runs Details table displays the following information:

Field	Description
Device Name	The name of the device.
Start Time	The time the job started.
End Time	The time the job ended.
Status	The status of the job.

To sort table data, click on the column heading by which you want to sort the data:

- A triangle indicates ascending order.
- An upside-down triangle indicates descending order.
- No triangle indicates that the data is not sorted.

