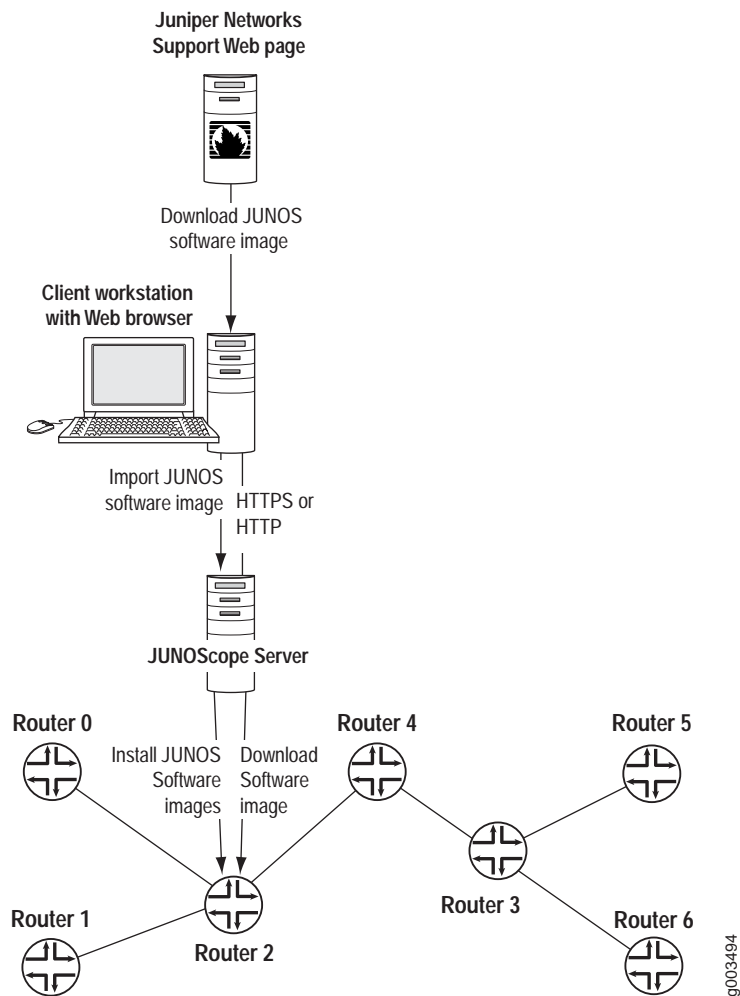


Chapter 28

Using the Software Manager

This chapter describes how to use the Software Manager, a licensable module, to manage the installation and deployment of software images on devices in the network. See Figure 9.

Figure 9: JUNOScope Software Manager Operations



You can download software images from the Juniper Networks Support Web page to the local file system of your workstation. You can import these software images into the JUNOScope server,

You can download a software image to a device or group of devices, and install that image immediately or at a scheduled time. You can install an image previously downloaded onto a device or directly from the JUNOScope server.

Using the Software Manager, the installation process occurs according to the installation options that you select; see “Select the installation option(s) that you want.” on page 317. Once installation is complete, the Software Manager reboots the device, and verifies that the software that is running on the device matches the software image installed.

You must have superuser privileges to use the Software Manager.

The following topics describe how to manage software images:

- Importing a Software Image on page 310
- Managing Software Images on page 311
- Downloading a Software Image and Saving a Download Software Image Operation on page 312
- Installing a Software Image and Saving a Software Image Installation Operation on page 316
- Deleting a Software Image on page 322

Importing a Software Image

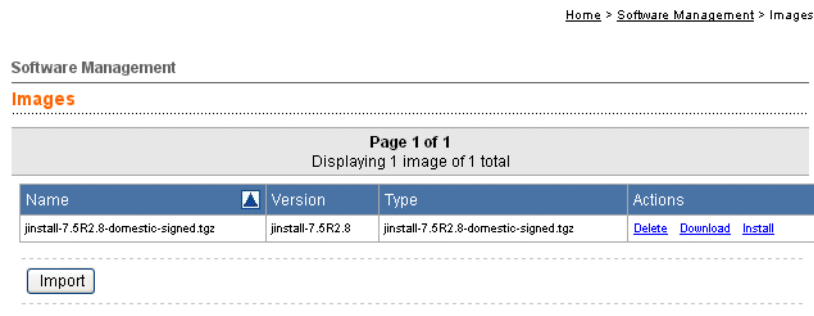
Before you can install a software image using the Software Manager, you must first download it from the Juniper Networks Support Web page to the local file system of your workstation, then import it into the JUNOScope server.

To download software images from the Juniper Networks software download page, you must have a service contract and an access account. If you do not have an access account, complete the registration form at the Juniper Networks Web site: <https://www.juniper.net/registration/Register.jsp>.

To import a software image into the JUNOScope software, follow these steps:

1. Download the software image you need from the Juniper Networks Support Web site, <http://www.juniper.net/support/> to your workstation.
 - a. Select the **Canada and US, Worldwide**, or **JUNOS-FIPs** editions.
 - b. Select the software release that you want.
2. Log in to the JUNOScope software and click **Software Management > Images**.

The Images dialog box appears. If you have not imported any software images, the Images dialog box is empty.



- Click Import.

The Import Software Image dialog box appears.



- Use Browse to navigate to the software image file on the local file system that you want to import. For example, you can import a software image file, such as `jinstall-7.5R2.8-domestic-signed.tgz`, to install on M-series and T-series routing platforms.
- Click Import.

The JUNOS software imports the software image. This operation may take a while, depending on the size of the image and the connection speed between the local machine and the JUNOScope server. The imported software image file appears in the Images dialog box. For more information about how to manage software images in the Images dialog box, see “Managing Software Images” on page 311.

Managing Software Images

From the Images dialog box, you can:

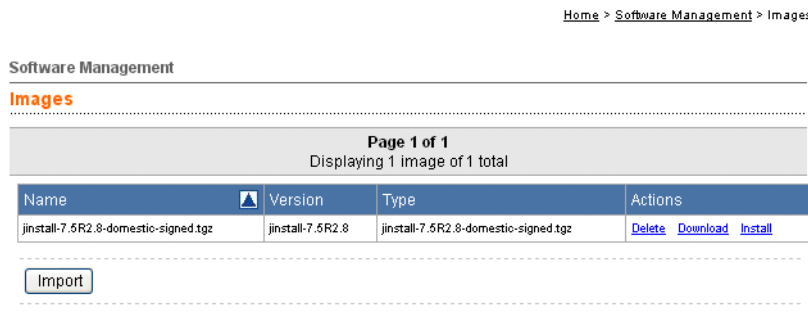
- Import other software images into the JUNOScope software from the local file system. If you have not imported any software images, the Images dialog box is empty. For more information about importing software images see “Importing a Software Image” on page 310.
- Delete a software image by clicking the Delete link. For more information about deleting software images, see “Deleting a Software Image” on page 322.

- Download a software image to a device or a group of devices immediately or at a scheduled time by clicking the Download link. For more information about downloading software images, see “Downloading a Software Image and Saving a Download Software Image Operation” on page 312
- Install a software image to a device or a group of devices immediately or at a scheduled time by clicking the Install link. For more information about installing a software image, see “Installing a Software Image and Saving a Software Image Installation Operation” on page 316

To view and manage software images, do the following:

- In the JUNOScope main window, click Software Management > Images.

The Images dialog box appears.



Imported software images are listed in the Images dialog box by image name, version, and type.

You can sort the Images table data by clicking a column name. Clicking the column name toggles between ascending and descending sort order.

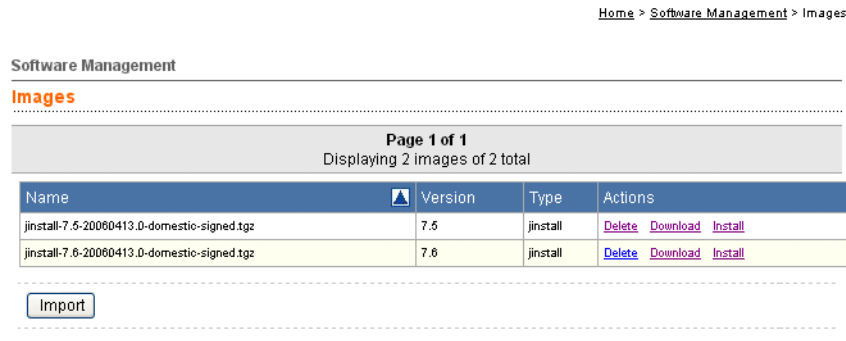
Downloading a Software Image and Saving a Download Software Image Operation

You can download a software image to a device or a group of devices immediately or at a scheduled time. You can save a software image download operation so that you can combine it with other operations. For example, you can combine saved download and install operations using the Task Manager (Saved Operations) and schedule them to run simultaneously at a scheduled time.

To download a software image to a device and save a download software image operation, follow these steps:

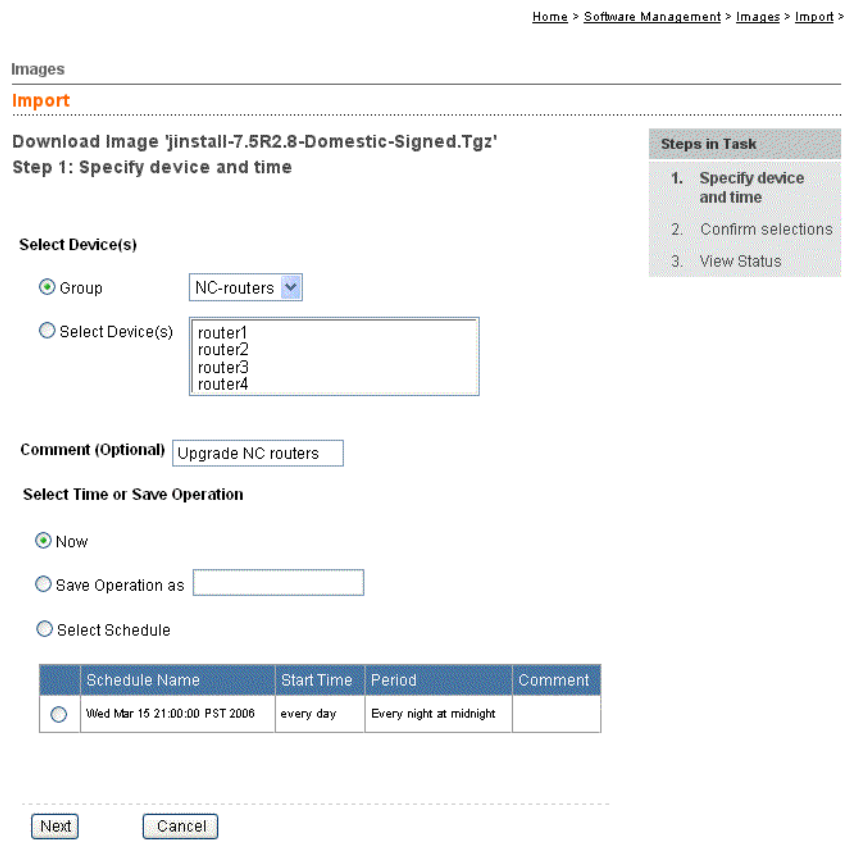
1. In the JUNOScope main window, click Software Management > Images.

The Images dialog box appears.



- Click the Download link for the software image that you want to download.

The Download Image dialog box appears.



- Select the Group or Select Device(s) option button.
- Select the group or devices that you want from the Group or Select Device(s) list box. Shift-click to select multiple devices from the Select Device(s) drop-down list box.

5. In the Comment text box, type an optional descriptive comment about the software image download that you want to perform.
6. Select when you want the software image download to occur by clicking the appropriate option button:
 - Now—(Default) Performs a software image download immediately after you confirm it.
 - Save Operation as—Saves the current operation in the Settings > Saved Operations table so you can combine that operation with other JUNOScope operations or run that operation at a later time. Click the Save Operation as option button, then type an operation name in the text box.
 - Select Schedule—Performs a software image download at the scheduled time interval. Select the schedule that you want in the schedule table.
7. Click Next.
 - The Please Confirm—Download Image dialog box appears if you selected the Now option.

JUNOScope

Download Image 'jinstall-7.5R2.8-Domestic-Signed.Tgz'



- The Please Confirm—Save Operation dialog box appears if you selected the Save Operation as option.

JUNOScope

Download Image 'jinstall-7.6-20060413.0-Domestic-Signed.Tgz'



8. Confirm that the download software image or save download software image options that you selected are correct.

9. Click Finish to perform the operation that you confirmed.
 - If you selected the Now option, the software image is downloaded to the device or group of devices that you specified immediately
 - If you selected the Save Operation as option, the operation is saved and listed in the Settings > Saved Operations dialog box. To view the saved operation, click Settings > Saved Operations. For more information about saving operations, see “Using Task Manager (Saved Operations)” on page 153.
 - If you selected the Select Schedule option and selected a schedule, the software image is downloaded when the operation is scheduled to be run.

When the software image download process is complete, the Status—View Status Records dialog box appears.

[Home](#) > [Monitor](#) > [Status](#)

Monitor

Status

View Status Records

2 results returned(2 success,0 error,0 other)
2 results displayed(2 success,0 error,0 other)

Page 1 of 1
Displaying 2 statuses of 2 total

Operation Name	Operation Type	Device Name	Report Name	User	Status	Start Time	Last Updated Time	Message
	download	router1.prod.network.net	N/A	admin	success	Thu Apr 13 16:14:07 PDT 2006	Thu Apr 13 16:14:51 PDT 2006	Successfully downloaded 'http://123.123.123.1:8080/fik/download/image/install-7.5R2.8-domestic-signed.tgz' to target router1.prod.network.net
	download	N/A	N/A	admin	success	Thu Apr 13 16:14:07 PDT 2006	Thu Apr 13 16:14:51 PDT 2006	success

The Status—View Status Records dialog box lists the software image download operation by operation name, operation type, report name, username, operation status, last updated time, and operation system log message. The software download operation status can be successful, failed, writing, pending, rebooting, connecting, or working.

10. Check the status of the operation that you specified, then click OK.

Installing a Software Image and Saving a Software Image Installation Operation

From the Images dialog box, you can install software images that have been imported into the JUNOScope software and downloaded to a device or a group of devices. You can install an image previously downloaded onto a device or directly from the JUNOScope server.

Using Software Manager, the installation process occurs according to the installation options that you select; see Step 3. If you select the Archive Data and Executable Areas (Snapshot) option, Software Manager performs a **request system snapshot** command before installing the software. If the command fails, the JUNOS software is not installed.

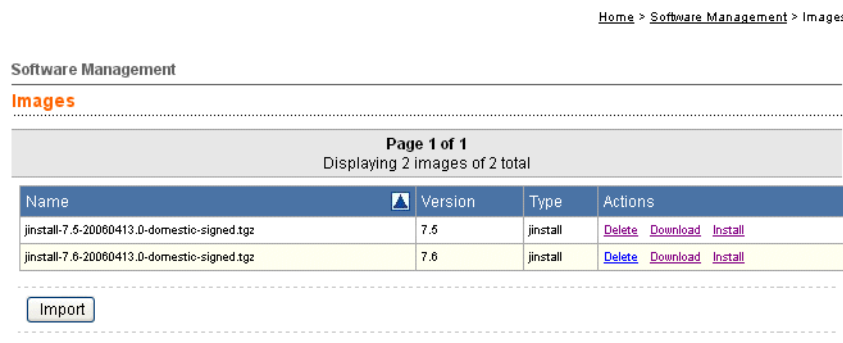
Once installation is complete, Software Manager reboots the device and reestablishes connection. Finally, Software Manager verifies that the software running on the device matches the software image installed.

You can save an install software image operation so that you can combine it with other operations or run it at a later time.

To install a software image and save an install software image operation, follow these steps:

1. In the JUNOScope main window, click Software Management > Images.

The Images dialog box appears.



2. Click the Install link for the software image that you want to install.

The Install Image dialog box appears.

Home > Software Management > Images > Import >

Images

Import

Install Image 'jinstall-7.5R2.8-Domestic-Signed.Tgz'
Step 1: Specify installation options, device and time

Steps in Task

1. Specify installation options, device and time
2. Confirm selections
3. View Status

Installation Options

Use Image Already Downloaded Onto Device

Archive Data And Executable Areas (Snapshot)

Check Compatibility With Current Configuration

Load Succeeds If At Least One Statement Is Valid

Remove The Package After Successful Installation

Select Device(s)

Group NC-routers

Select Device(s) router1
router2
router3
router4

Comment (Optional)

Select Time or Save Operation

Now

Save Operation as

Select Schedule

	Schedule Name	Start Time	Period	Comment
<input type="radio"/>	Wed Mar 15 21:00:00 PST 2006	every day	Every night at midnight	

3. Select the installation option(s) that you want.

- Use Image Already Downloaded Onto Device—Installs an image that has already been downloaded to the `/var/tmp` directory of a device.
- Archive Data And Executable Areas (Snapshot)—(Default) This option is the equivalent of the JUNOS software `request system snapshot` command. The command backs up the currently running and active file system partitions on the router to standby partitions that are not running. Specifically, the root file system (`/`) is backed up to `/altroot`, and `/config` is backed up to `/altconfig`. The root and `/config` file systems are on the router's flash drive, and the `/altroot` and `/altconfig` file systems are on the router's hard drive. After you run the `request system snapshot` command, you cannot return to the previous version of the software, because the running and backup copies of the software are identical.

The `request system snapshot` command can fail on J-series devices when there is no compact flash to back up the system.

- Check Compatibility With Current Configuration—(Default) Validates the software image that you want to install against the current configuration as a prerequisite to installing the software image. If the current configuration is not compatible with the software image, the installation will not continue. This is equivalent to using the JUNOS `request system software add validate` CLI command. This is the default behavior when the software image being added is a different release.
 - Load Succeeds If At Least One Statement Is Valid —Activates a partial load and treats parsing errors as warnings instead of errors. Even if some of the statements (but not all) are invalid, the software installation succeeds. This option is the equivalent of using the `request system software add <image> best-effort-load` CLI command.
 - Remove The Package After Successful Installation—Allows the system to find enough room to upgrade a new software image. Use this option when installing a software image from a local directory on a device that has minimal storage space. This command is equivalent to the `request system software add uplink` CLI command.
4. Select the Group or Select Device(s) option button.
 5. Select the group or devices that you want from the Group or Select Device(s) list box. Shift-click to select multiple devices from the Select Device(s) drop-down list box.
 6. In the Comment text box, type an optional descriptive comment about the software image installation operation.
 7. Select when you want the software image installation to occur and to save the operation by clicking the appropriate option button:
 - Now—(Default) Performs a software image installation immediately after you confirm it.
 - Save Operation as—Saves the current operation in the Settings > Saved Operations table so you can combine that operation with other JUNOScope operations or run that operation at a later time. Click the Save Operation as option button, then type an operation name in the text box.
 - Select Schedule—Performs a software image installation at the scheduled time interval. Select the Select Schedule option, then select the schedule that you want in the schedule table.
 8. Click Next.
 - If you selected the Now option, the Please Confirm—Install Image dialog box appears.

Images

Import

Install Image 'jinstall-7.5R2.8-Domestic-Signed.Tgz'

Step 2: Confirm selections

Please Confirm:

Install image 'jinstall-7.5R2.8-domestic-signed.tgz' now onto device(s)

- router1.production.network.net

Steps in Task

1. Specify installation options, device and time
2. **Confirm selections**
3. View Status

- If you selected the Save Operation as option, the Please Confirm—Save Install Image dialog box appears.

[Home](#) > [Software Management](#) > [Images](#) > [Import](#) >

Images

Import

Install Image 'jinstall-7.6-20060413.0-Domestic-Signed.Tgz'

Step 2: Confirm selections

Please Confirm:

Save operation: Install image 'jinstall-7.6-20060413.0-domestic-signed.tgz' using name install jinstall 7.6 image onto members of group 'customer-xyz'

Steps in Task

1. Specify installation options, device and time
2. **Confirm selections**
3. View Status

9. Confirm that the software image install options that you selected are correct.
10. Click Finish to confirm the software image install operation that you specified.
 - If you selected the Now option, software image installation occurs immediately.
 - If you selected the Save Operation as option, the operation is saved in the Settings > Saved Operations table. To view the saved operation, click Settings > Saved Operations. For more information about managing saved JUNOScope operations, see “Using Task Manager (Saved Operations)” on page 153.
 - If you selected the Select Schedule option, the software image installation occurs when the operation is scheduled to be run.

When the software image install process is complete, the Status—View Status Records dialog box appears.

Home > Monitor > Status

Monitor

Status

View Status Records

2 results returned(0 success,0 error,2 other)
 2 results displayed(0 success,0 error,2 other)

Page 1 of 1
 Displaying 2 statuses of 2 total

Operation Name	Operation Type	Device Name	Report Name	User	Status	Start Time	Last Updated Time	Message
	install	N/A	N/A	admin	waiting	Wed Apr 19 16:54:50 PDT 2006	Wed Apr 19 16:54:50 PDT 2006	Waiting for 1 of 1 steps to complete
	install	router1.prod.network.net	N/A	admin	working	Wed Apr 19 16:54:50 PDT 2006	Wed Apr 19 16:54:50 PDT 2006	working

The Status—View Status Records dialog box lists the software image download operation by operation name, operation type, report name, username, operation status, last updated time, and operation system log message. The Archive operation status can be successful, failed, writing, pending, connecting, or working.

The Software Manager reboots the device after the software is installed.

Home > Monitor > Status

Monitor

Status

View Status Records

2 results returned(1 success,0 error,1 other)
 2 results displayed(1 success,0 error,1 other)

Page 1 of 1
 Displaying 2 statuses of 2 total

Operation Name	Operation Type	Device Name	Report Name	User	Status	Start Time	Last Updated Time	Message
	install	router1.prod.network.net	N/A	admin	rebooting	Wed Apr 19 16:54:50 PDT 2006	Wed Apr 19 16:59:06 PDT 2006	Rebooting cuervo.englab.juniper.net with new image 'http://123.123.123.1:8080/ftk/download/image/install-7.5R2.8-domestic-signed.tgz'. The running version has not been verified yet.
	install	N/A	N/A	admin	success	Wed Apr 19 16:54:50 PDT 2006	Wed Apr 19 16:59:06 PDT 2006	success

After the device reboots, connection must be reestablished with the device. If connection is not established within a specified time, a “could not open connection” error message appears in the View Status Records dialog box table.

If connection is not established with the device it may be because of one of the following reasons, and you may have to install the software manually:

- The request system snapshot command may not work on some devices.
- There may not be enough available disk space on the device.
- The newly installed software may not be compatible with the existing configuration.
- The newly installed software may not be compatible with the Physical Interface Cards (PICs) that are installed on the device.

[Home](#) > [Monitor](#) > [Status](#)

Monitor

Status

View Status Records

2 results returned(1 success,0 error,1 other)
2 results displayed(1 success,0 error,1 other)

Page 1 of 1
Displaying 2 statuses of 2 total

Operation Name	Operation Type	Device Name	Report Name	User	Status	Start Time	Last Updated Time	Message
	install	N/A	N/A	admin	success	Wed Apr 19 16:54:50 PDT 2006	Wed Apr 19 16:59:06 PDT 2006	success
	install	router1.prod.network.net	N/A	admin	working	Wed Apr 19 16:54:50 PDT 2006	Wed Apr 19 17:03:07 PDT 2006	cuervo.englab.juniper.net has rebooted. Verifying running software matches jinstall-7.5R2.8-domestic-signed.tgz

11. Click OK.

Deleting a Software Image

You can delete software images that are no longer needed from the Software Manager.

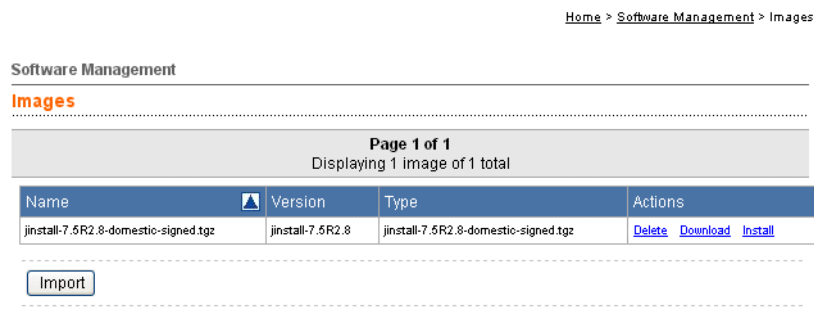


NOTE: You cannot delete a software image that is associated with an active operation schedule. To delete that image, you must click Manage Operations and delete the schedule associated with the image first, then delete the image using the following procedure.

To delete a software image, follow these steps:

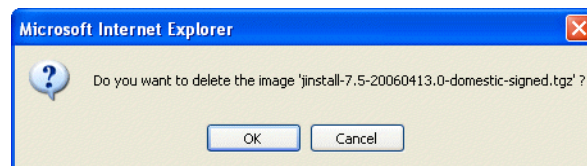
1. In the JUNOScope main window, click Software Management > Images.

The Images dialog box appears.



2. Click the Delete link for the software image that you want to delete.

A confirmation dialog box appears.



3. Click OK.

The image is deleted from the JUNOScope software. Any operations scheduled for the deleted image will fail unless you delete the scheduled operation using Monitor > Operations, see “Managing Operations” on page 211.