

# HP-UX Software and Patching Management Using HP Server Automation

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Overview .....	2
Patch Management for HP-UX Prerequisites .....	2
HP-UX Patching Features .....	2
Importing HP-UX Depots .....	3
Importing the HP-UX Software Catalog File .....	4
Supported Operating Systems for HP-UX Patching .....	5
HP-UX Software Policy Management Tasks .....	5
Creating an HP-UX Software Policy .....	5
Opening an HP-UX Software Policy .....	6
Editing HP-UX Software Policy Properties .....	7
Adding the HP-UX Patch to a Software Policy .....	8
Removing Software from an HP-UX Software Policy .....	8
Viewing the History of an HP-UX Software Policy .....	9
Viewing Servers Attached to an HP-UX Software Policy .....	9
Locating HP-UX Software Policies in Folders .....	9
Importance of Custom Attribute .....	10
Patch Installation .....	10
Installation Flags .....	11
Installing an HP-UX Patch .....	11
Setting HP-UX Install Options .....	11
Setting Reboot Options for an HP-UX Patch Installation .....	12
Specifying Install Scripts for an HP-UX Patch Installation .....	12
Scheduling an HP-UX Patch Installation .....	13
Setting Up Email Notifications for an HP-UX Patch Installation .....	13
Previewing an HP-UX Patch Installation .....	14
Uninstalling HP-UX Patches and Bundles .....	16
HP-UX Patch Compliance .....	16

## Overview

HP-UX patches are delivered exclusively by HP as depots. Depots contain multiple patch products and each patch product contains multiple patch file sets. The depots can be uploaded into HP Server Automation (SA). With SA you can:

- Create HP-UX Software policies from HP-UX patches or patch bundles.
- Identify, install, and remove HP-UX patches from the server.
- Install software and patches by remediating software policies.
- Download information associated with each patch, including:
  - Platform settings including support for multi-platform patches
  - Patch dependencies
  - Reboot settings
- Perform compliance scans.

## Patch Management for HP-UX Prerequisites

To use the HP-UX Patching features, you must apply the SA 7.84 patch and perform the following tasks, which are explained in this document:

- Download the HP-UX Software Catalog file, `swa_catalog.xml`, from the ITRC website (<ftp://ftp.itrc.hp.com/export/patches>) and upload the catalog file using the `import_hpux_metadata` script.
- Upload the new patches and re-upload the existing HP-UX patches, depots, and bundles to the SA repository using the `import_hpux_depot` script.
- Update the HP-UX agent on all existing managed servers. The agent version should be greater than or equal to `opsware-agent-37.0.0.2.130`.

## HP-UX Patching Features

With HP-UX patching you can:

- Define HP-UX Software policies, which provides a model-based approach to managing your HP-UX servers. HP Server Automation enables you to create a model of your IT environment using HP-UX Software policies. HP-UX Software policies specify patches and scripts that can be installed on the managed servers.
- Install HP-UX patches bundles/patches on managed servers.
- Establish a patch installation process.

With HP-UX patching, you can separate and independently schedule the various stages of patch management: analysis, download, and installation. You can be notified of job status via email upon completion of each stage and associate a ticket ID with each job.

- Verify compliance status of servers to software policies

The Compliance View enables you to determine if servers are configured according to the Software policy and to remediate non-compliant servers.

- Search for software resources and servers.

In the SA Client, the Library provides a way to search for HP-UX packages, patches, and software policies using powerful and flexible search criteria such as availability, architecture, operating system, reboot options, and version, among others. You can also search for HP-UX software policies by name, folder name, availability, and operating system.

- View patch dependencies and patch applicability analysis while previewing patch installation.

## Importing HP-UX Depots

The HP-UX Depot importer script makes it easy to import HP-UX patches, bundles, and depots to the HP Server Automation Library. For each source depot, the tool creates a <depot name> Depot policy in the SA Library containing the depot's products.

The `import_hpux_depot` script needs the `.depot` extension to script input. The Standard HP-UX Bundles that are downloaded from `http://itrc.hp.com` have a `.depot` extension by default.

HP-UX patches downloaded from `http://itrc.hp.com` do not come with the `.depot` extension by default. These patches must be manually downloaded to an HP-UX server, unshared to create a `.depot` file, and uploaded to the SA Library using the `import_hpux_depot` script.

### Location

```
/opt/opsware/mm_wordbot/util/import_hpux_depots
```

### Usage

```
import_hpux_depots [options]
```

All `*.depot` files in the current working directory are imported to the Library.

```
import_hpux_depots [options] <source-directory>
```

All `*.depot` files in the specified directory are imported to the Library.

```
import_hpux_depots [options] <*.depot>
```

The explicitly specified depots are imported to the Library.

```
import_hpux_depots -h
```

Show additional options.

```
-h, --help
```

Show help message and exit.

```
-f, --force
```

Force depot products to be imported even if already in the Library.

```
-o OS, --os=OS
```

HP-UX release of depot products 10.20, 11.00, 11.11, 11.23, and 11.31.

Some patches are common to both 11.23 and 11.31 os versions. Use `-o=11.23` or `-o=11.31` to upload these patches to the SA Library.

```
-p POLICY_FOLDER, --policy_folder=POLICY_FOLDER
```

Path to Library folder in which to create policies

```
-n, --silent
```

Display errors only.

```
-u USERNAME, --username=USERNAME
```

Upload packages as specified user (default: opsware).

```
-v, --verbose
```

Display verbose output.

```
--manual
```

Show manual page and exit.

```
--version
```

Show version and exit.

`-b, --bundle-policies` create a policy for each depot bundle

For each bundle that appears in a source depot, the tool creates a `<bundle name>` Bundle policy in the Library containing the bundle's products using the `--bundle-policies` option.

`-s SPLIT, --split=SPLIT` How to split each depot (default: product): 'product', 'instance', 'none'

Products already in the Library are not re-imported unless `--force` is specified.

By default, depots containing multiple products are split by product so that each product is kept in the Library as its own self-contained depot. The split behavior is controlled by the `--split` option:

- `none` — Source depots are not split but are imported as is.
- `product` — Source depots are split by product. If a depot contains multiple instances of the same product (by name), the instances are kept together. This is the default.
- `instance` — Source depots are split by product instance. If a depot contains multiple instances of the same product (by name), each instance is split into its own depot.

Importing patches and depots using the SA OCC Client instead of scripts will not create software policies, and patch dependency will not work.

## Importing the HP-UX Software Catalog File

The HP-UX Software Catalog file is the HP-UX Patch Database in XML format. The catalog file is named `swa_catalog.xml` and can be downloaded from `ftp://ftp.itrc.hp.com/export/patches`.

The HP-UX Metadata script is used to import the HP-UX Software Catalog file to the HP Server Automation Library. This script can list dependent patches for any patch that exists in the software catalog file and indicate the dependent patches that are missing in the package repository.

### Location

`/opt/opsware/mm_wordbot/util/import_hpux_metadata`

### Usage

Options:

`-h, --help`

Shows the help message.

`-c HPUX_SW_CATALOG_FILE, --catalog_file=HPUX_SW_CATALOG_FILE`

Specifies the source location of the HP-UX software catalog file. The catalog file `swa_catalog.xml` can be downloaded from `ftp://ftp.itrc.hp.com/export/patches`.

`-a HPUX_ANALYZE_PATCHES, --analyze_patches=HPUX_ANALYZE_PATCHES`

Specifies the HP-UX patches that will be analyzed to indicate dependent patches missing in the package repository. Multiple HP-UX patches can be specified by separating them using a comma. You can specify to analyze all the HP-UX patches in the package repository by using the keyword "all."

`-n, --no_supersedence`

Flag is used with `-a` option indicating whether to use the superseded dependence tree or the basic dependence tree to report missing patches. The superseded dependence tree is the default behavior for HP-UX patching. It performs the most recent dependency check. The basic dependency tree performs the least recent dependence check.

`-d DISPLAY_DEPENDENCIES, --display_dependencies=DISPLAY_DEPENDENCIES`

Specifies HP-UX patches for which the dependencies should be displayed. The keyword "all" displays the dependencies for all patches in software catalog file.

## Supported Operating Systems for HP-UX Patching

The following operating system versions are supported for HP-UX patching by SA.

OS Version	Architecture
HP-UX 11.23	PA-RISC, Itanium
HP-UX 11.31	PA-RISC, Itanium

## HP-UX Software Policy Management Tasks

In SA, HP-UX Software policies enable you to install HP-UX software and patches on servers and groups of servers. When you create a software policy you can attach it to servers or groups of servers. When you remediate a server or group of servers, the patches specified in the attached policy are automatically installed. The remediation process compares what is actually installed on a server to the patches that should be installed on the server according to the policy. SA then determines what operations are required to make the server conform to the policy. The following sections describe how to manage HP-UX Software policies.

### Creating an HP-UX Software Policy

You can create a software policy in the SA client using either of the following views:

- Type View in the Library
- Folder View in the Library

You must have a set of permissions to create and manage an HP-UX Software policy. To obtain these permissions, contact your SA administrator. For more information, see the SA Administration Guide.

To use Type View in the Library, follow these steps:

- 1 From the Navigation pane, select **Library > By Type > Software Policies > HP-UX**. The list of software policies appears in the Content pane. By default, the software policies are organized by operating system families.
- 2 Select a specific operating system.
- 3 From the Actions menu, select **New**. The HP-UX Software Policy window opens.
- 4 In the Name field, enter the name of the HP-UX Software policy.
- 5 In the Description field, enter text that describes the purpose or contents of the policy.
- 6 Click **Browse** to specify the location for the HP-UX Software policy in the folder hierarchy. The Select Folder window opens. Select a folder in the Library to specify the location of the HP-UX Software policy and then click **Select**.
- 7 From the Availability drop-down list, select the SA server life cycle values for the HP-UX Software policy.
- 8 From the OS drop-down list, select the operating system family or specific operating systems in that family.
- 9 To save the changes, select **Save** from the File menu.

To use Folder View in the Library, follow these steps:

- 1 From the Navigation pane, select **Library > By Folder**. The folder hierarchy in the library appears in the Content pane.

- 2 Select the folder that should contain the HP-UX Software policy.
- 3 From the Actions menu, select **New HP-UX Software Policy**. The HP-UX Software Policy window opens.
- 4 In the Name field, enter the name of the HP-UX Software policy.
- 5 In the Description field, enter text that describes the purpose or contents of the policy.
- 6 Click **Browse** to change the location for the HP-UX Software policy in the folder hierarchy. The Select Folder window opens.
- 7 Select a folder in the Library to specify the location of the HP-UX Software policy and then click **Select**.
- 8 From the Availability drop-down list, select the SA server life cycle values for the HP-UX Software policy.
- 9 From the OS drop-down list, select the operating system family or specific operating systems in that family.
- 10 To save the changes, select **Save** from the File menu.

## Opening an HP-UX Software Policy

You can open a software policy in the SA client using any of the following:

- Search
- Devices
- Type View in the Library
- Folder View in the Library

To use Search, follow these steps:

- 1 From the Navigation pane, select **Search**.
- 2 Select HP-UX Software Policy from the drop-down list and then enter the name of the policy in the text field.
- 3 Select the -> icon. The search results appear in the Content pane.
- 4 From the Content pane, select the HP-UX Software policy and then select **Open** from the Actions menu. The HP-UX Software Policy window opens.

To use Devices, follow these steps:

- 1 From the Navigation pane, select **Devices > Servers > All Managed Servers**. The server list appears in the Content pane.

Or

From the Navigation pane, select **Devices > Device Groups**. The device groups list appears in the Content pane.

- 2 From the Content pane, select a server. From the Actions menu, select **Open**. The Server Explorer window opens.
- 3 From the Views pane, select **Management Policies > Software Policies**. The software policies attached to the server appear in the Content pane.
- 4 From the Content pane, select the software policy and then select **Open** from the Actions menu. The HP-UX Software Policy window opens.

To use Type View in the Library, follow these steps:

- 1 From the Navigation pane, select **Library > By Type > Software Policies > HP-UX**. The HP-UX Software policies appear in the Content pane.

- 2 From the Content pane, select the HP-UX Software policy and then select **Open** from the Actions menu. The HP-UX Software Policy window opens.

To use Folder View in the Library, follow these steps:

- 1 From the Navigation pane, select **Library > By Folder**. The folder hierarchy in the Library appears in the Content pane.
- 2 From the Content pane, select the HP-UX Software policy in a folder and then select **Open** from the Actions menu. The HP-UX Software Policy window opens.

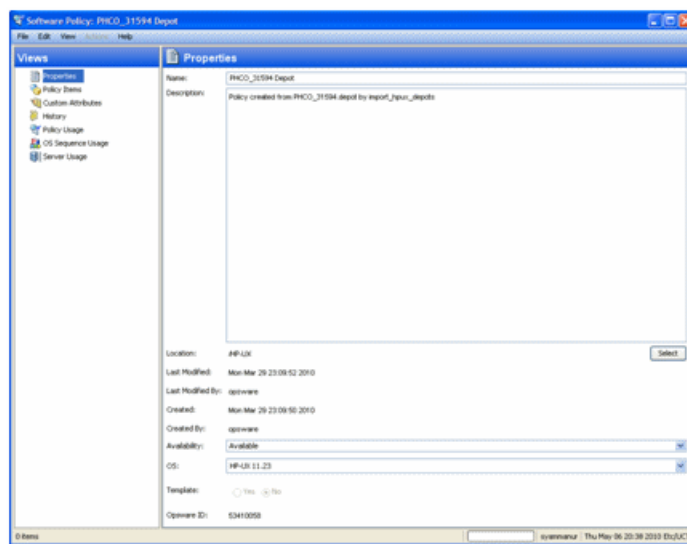
## Editing HP-UX Software Policy Properties

After you create an HP-UX Software policy, you can view and modify its properties. You can view properties such as the SA user that created the HP-UX Software policy, the date when it was created, and the SA ID of the HP-UX Software policy. You can also modify the name, description, availability, location of the HP-UX Software policy in the Library, and the operating systems of the HP-UX Software policy.

You must have a set of permissions to manage HP-UX Software policies. To obtain these permissions, contact your SA administrator. For more information, see the SA Administration Guide.

To define the properties of an HP-UX Software policy, follow these steps:

- 1 From the Navigation pane, select **Library > By Type > Software Policies > HP-UX**.
- 2 From the Content pane, select the HP-UX Software policy and open it. The HP-UX Software Policy window opens.



- 3 From the Views pane, select **Properties**. You can edit the name, description, location, life cycle, and operating systems for the HP-UX Software policy in the Content pane.
- 4 In the Name field, edit the name for the HP-UX Software policy.
- 5 In the Description field, edit the text that describes the purpose or contents of the policy.
- 6 Click **Browse** to change the location for the HP-UX Software policy in the folder hierarchy. The Select Folder window opens.
- 7 Select a folder in the Library to specify the location of the HP-UX Software policy and then click **Select**.
- 8 From the Availability drop-down list, select the SA server life cycle values for the HP-UX Software policy.
- 9 From the OS drop-down list, select the operating system family or specific operating systems in that family.

10 To save the changes, select **Save** from the File menu.

## Adding the HP-UX Patch to a Software Policy

After you create an HP-UX Software policy, you can add the HP-UX Patch, HP-UX software, and server scripts to it. Adding these does not install them on a managed server. You must attach the policy to a managed server and then remediate the server.

You must have a set of permissions to add HP-UX patches, HP-UX software, and server scripts to an HP-UX Software policy. To obtain these permissions, contact your SA administrator. For more information, see the SA Administration Guide.

To add software resources to a software policy, follow these steps:

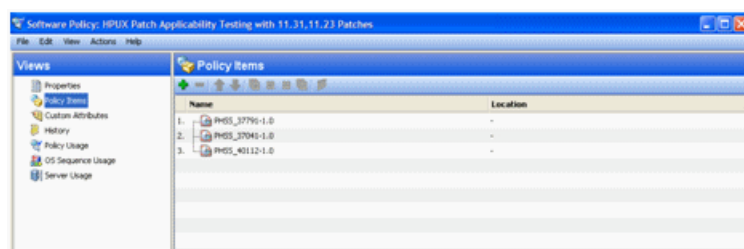
- 1 From the Navigation pane, select **Library > By Type > Software Policies > HP-UX**.
- 2 From the Content pane, select the HP-UX Software policy and open it. The HP-UX Software Policy window opens.
- 3 From the Views pane, select **Policy Items**.
- 4 Either select the + icon or, from the Actions menu, select **Add**. The Select Library Item window opens.
- 5 Select the **Browse Types** tab to display items that can be added to the HP-UX Software policy.
- 6 Select one or more items you want to add to the policy and click **Select**. The items are added to the policy.

Or

Select the **Browse Folders** tab to display the folder hierarchy in the Library and the list of items contained in the folders. Select one or more items you want to add to the policy and click **Select**. The items are added to the policy.

- 7 To change the order in which the software is installed, use the up and down arrows.
- 8 To remove a software from the policy, select the software and click the - (red) icon.
- 9 To save the changes to the policy, select **Save** from the File menu.

The following graphic shows an HP-UX Software policy that contains three patches in the SA Client.



## Removing Software from an HP-UX Software Policy

Removing HP-UX software from an HP-UX Software policy does not uninstall it from a managed server. It only removes the software from the policy. To uninstall the HP-UX software from a managed server, you must directly uninstall the HP-UX software from the managed server.

You must have a set of permissions to remove HP-UX software from an HP-UX Software policy. To obtain these permissions, contact your SA administrator. For more information, see the SA Administration Guide.

To remove HP-UX software from an HP-UX Software policy, follow these steps:

- 1 From the Navigation pane, select **Library > By Type > Software Policies > HP-UX** and select a version of HP-UX.



- 2 From the Content pane, select the HP-UX Software policy and open it. The HP-UX Software Policy window opens.
- 3 From the Views pane, select **Policy Items**.
- 4 Select the items that you want to remove from the list of policy items displayed in the Content pane.
- 5 Either click the - (red) icon or, from the Actions menu, select **Remove**.
- 6 To save your changes, select **Save** from the File menu.

## Viewing the History of an HP-UX Software Policy

To view the events associated with an HP-UX Software policy, follow these steps:

- 1 From the Navigation pane, select **Library > By Type > Software Policies > HP-UX** and select a version of HP-UX.
- 2 From the Content pane, select the HP-UX Software policy and open it. The HP-UX Software Policy window opens.
- 3 From the Views pane, select **History**. The events associated with the HP-UX Software policy will display in the Content pane. You can view the action performed on the policy, the user who performed the action, and the time when the action was performed.
- 4 From the Show drop-down list, select the time period you want to see the events from.

## Viewing Servers Attached to an HP-UX Software Policy

In the SA Client, you can view the list of all servers and device groups that have a selected HP-UX Software policy attached to them.

To view the servers that have a selected HP-UX Software policy attached to them, follow these steps:

- 1 From the Navigation pane, select **Library > By Type > Software Policies > HP-UX** and select a version of HP-UX.
- 2 From the Content pane, select the HP-UX Software policy and open it. The HP-UX Software Policy window opens.
- 3 From the Views pane, select **Servers**. The list of servers that have the selected HP-UX Software policy attached to them appears in the Content pane.

## Locating HP-UX Software Policies in Folders

To locate an HP-UX Software policy in the folder hierarchy, follow these steps:

- 1 From the Navigation pane, select **Library > By Type > Software Policies > HP-UX** and select a version of HP-UX.
- 2 From the Content pane, select the HP-UX Software policy.
- 3 From the Actions menu, select **Locate** in Folders. The folder hierarchy for the HP-UX Software policy appears in the Content pane.

# Importance of Custom Attribute

HP-UX Patching enables you to set a custom attribute by name (hpuxpatch\_dont\_supersede) to any managed server, as shown in the following graphic.



SA mandates the inclusion of the latest patches in the software policy with the custom attribute not set, which is the default behavior. With the custom attribute set, SA accepts the non-latest patches in the policy. To toggle the behavior, you can set the custom attribute or delete the custom attribute. Custom attribute cannot be set on the software policy.

## Patch Installation

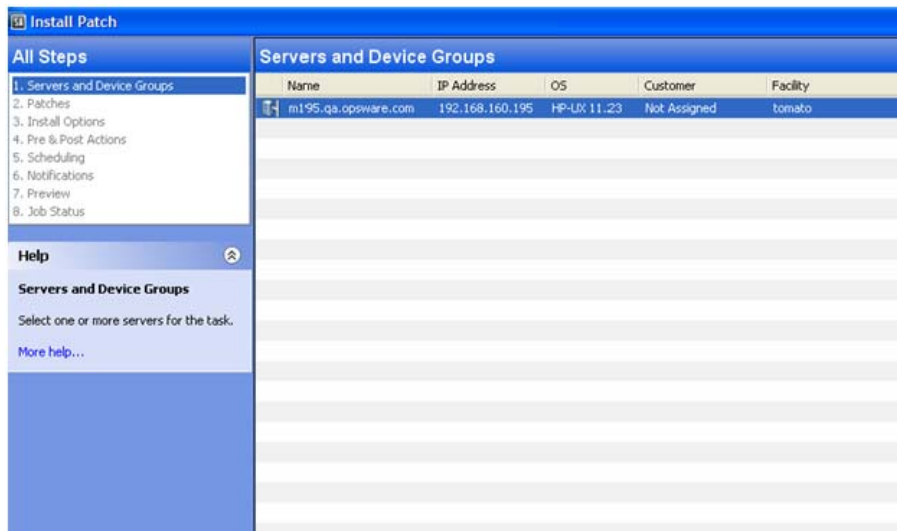
The patch installation process consists of two phases:

- Download Phase: This is when the patch is downloaded from SA to the managed server. This phase is commonly referred to as the staging phase.
- Installation Phase: This is when the patch is installed on the managed server. This phase is commonly referred to as the deployment phase.

You can specify whether you want the installation to occur immediately after the patch is downloaded (staged) or you can schedule it to occur at a later date and time. Patch Management also supports the need for best-effort installations of multiple patches by allowing you to specify that the patch installation process will continue even when an error occurs with one of the patches.

Patch Management displays the name of the command that installs the patch. The SA Agent runs this command on the managed server. You can override the default command-line arguments you want to perform the installation.

To optimally manage HP-UX patch installations, Patch Management enables you to manage server reboot options and pre- and post-installation scripts, simulate (preview) a patch installation, and set up email notifications to alert you about the status of the installation process. The Install Patch window, as shown in following graphic, guides you through the setup.



## Installation Flags

You can specify installation flags that are applied whenever an HP-UX patch is installed. However, SA also uses default installation flags and requires that patches be installed with these flags. You must therefore be certain that you do not specify any installation flags that override or contradict the default flags passed in by SA.

## Installing an HP-UX Patch

Before a patch can be installed on a managed server, it must be imported into SA, and its status must be Available. Administrators who have the required permissions can install patches that are marked Limited.

You must have a set of permissions to manage patches. To obtain these permissions, contact your SA Administrator. For more information, see the SA Administration Guide.

You can perform the installation by explicitly selecting patches and servers.

To install a patch on a managed server, follow these steps:

- 1 From the Navigation pane, select **Library** and then select **Patches**.
- 2 Expand the Patches and select a specific HP-UX operating system.
- 3 From the Content pane, select a patch.
- 4 From the View drop-down list, select **Servers** (or **Server Groups**).
- 5 From the Show drop-down list, select **Servers without Patch Installed** (or **Server Groups without Patch Installed**).
- 6 From the Preview pane, select one or more servers.
- 7 From the Actions menu, select **Install Patch**. The first step of the Install Patch window, Servers and Server Groups, opens.
- 8 After you complete a step, click **Next** to advance to the next step. Before you click **Start Job**, you can return to a completed step to make changes by clicking on it in the list of steps.
- 9 When you are ready to launch the installation job, click **Start Job**.

After you launch the job, you cannot change its parameters, even if the job is scheduled to run at a later time.

If the Install Patch window remains open until the job completes, Patch Management updates the Patch Compliance column in the All Managed Servers window with the revised compliance count (in parenthesis) for affected servers. Press **F5** or select **Refresh** from the View menu to update information in the Patch Preview pane.

## Setting HP-UX Install Options

You can specify the following types of patch installation options:

- Perform the patch installation immediately after the patch is downloaded or at a later date and time.
- Do not interrupt the patch installation process even when an error occurs with one of the patches.
- Use different command-line options to perform the installation.

To set these options, follow these steps:

- 1 From the Install Patch window, click **Next** to advance to the Install Options step.
- 2 Select one of the following Staged Install Options:
  - Continuous: Enables you to run all phases as an uninterrupted operation.
  - Staged: Enables you to schedule the download and installation to run separately.

- 3 Select the **Error Options** check box if you want the patch installation process to continue even when an error occurs with one of the patches. By default, this check box is not selected.
- 4 In the Install Command text box, enter command-line arguments for the command that is displayed.
- 5 Click **Next** to go to the next step or click **Cancel** to close the Install Patch window.

## Setting Reboot Options for an HP-UX Patch Installation

To minimize the downtime that server reboots can cause, you can control when servers will and will not be rebooted. You can adopt the vendor's reboot assignments, reboot a server each time a patch is installed on it, completely suppress all server reboots, or postpone reboots until all patches are installed.

When you are selecting reboot options in the Install Patch window, HP recommends that you use the HP-UX reboot recommendations, which is the "Reboot servers as specified by patch properties" option. If you cannot use the HP-UX reboot setting, select the single reboot option, which is the "Do not reboot servers until all patches are installed" option.

The following options determine whether the servers are rebooted after the patch is installed. These options apply only to the job launched by the Install Patch window. They do not change the Reboot Required option, which is on the Install Parameters tab of the patch properties window. Except for the first option, the following options override the Reboot Required option.

- Reboot servers as specified by patch properties  
By default, the decision to reboot depends on the Reboot Required option of the patch properties. The server is rebooted only once at the end. This is done to satisfy the patch dependency. In effect, the option works as the third option which is to not reboot servers until all patches are installed
- Reboot servers after each patch install  
Even if the Reboot Required option of the patch properties is not set, reboot the server. If multiple patches are installed, the server will be rebooted only once after all patches are installed.
- Do not reboot servers until all patches are installed  
If the Reboot Required option is set for some selected patches but not for others, the server is rebooted one time after all patches are installed. If the Reboot Required option is not set for any of the selected patches, the server is not rebooted.
- Suppress all server reboots  
Even if the Reboot Required option of the patch properties is set, do not reboot the server. (Because of vendor settings, some patches ignore the suppress option and force a reboot.)

To set reboot options, follow these steps:

- 1 From the Install Patch window, click **Next** to advance to the Pre & Post Actions step.
- 2 Select one of the Rebooting Options.
- 3 Click **Next** to go to the next step or click **Cancel** to close the Install Patch window.

## Specifying Install Scripts for an HP-UX Patch Installation

For each patch, you can specify a command or script to run before installation or after installation. A pre-install script, for example, could check a certain condition on the managed server. If the condition is not met or if the pre-install script fails, the patch is not installed. A pre-install script could also be used to shut down a service or application before it is patched. A post-install script could be used to perform a certain cleanup process on the managed server. You can also specify the following types of scripts to run on the managed server before or after an installation or download phase:

- Pre-Download: A script that runs before patches are downloaded from SA to the managed server. This is available only if you select Staged in the Install Options step.
- Post-Download: A script that runs after patches are downloaded from SA to the managed server and before the patch is installed. This is available only if you select Staged in the Install Options step.
- Pre-Install: A script that runs before patches are installed on the managed server.
- Post-Install: A script that runs after patches are installed on the managed server.

To specify a pre-install script, follow these steps:

- 1 From the Install Patch window, click **Next** to advance to the Pre & Post Actions step.
- 2 Select the Pre-Install tab. You may specify different scripts and options on each of the tabs.
- 3 Select **Enable Script**. This option enables the remainder of the fields on the tab. If Enable Script is not selected, the script will not run.
- 4 Select either **Saved Script** or **Ad-Hoc Script**.
- 5 A Saved Script was previously stored in SA with the SAS Web Client. To specify the script, click **Select**.
- 6 If the script requires command-line flags, enter the flags in the Command text box.
- 7 Specify the information in the User section. If you choose a system other than Local, enter the User Name, Password, and Domain. The script will be run by this user on the managed server.
- 8 To stop the installation if the script returns an error, select the **Error** check box.
- 9 Click **Next** to go to the next step or click **Cancel** to close the Install Patch window.

## Scheduling an HP-UX Patch Installation

Because the two phases of patching can be decoupled, you can schedule when you want patches installed (deployed) to occur independently of when patches are downloaded (staged).

To schedule a patch installation, follow these steps:

- 1 From the Install Patch window, click **Next** to advance to the Scheduling step.  
By default, the Scheduling step displays only the scheduling options for the install phase. If you selected Staged in the Install Options step, the scheduling options for the download phase are also displayed.
- 2 Select one of the following Install Phase options:
  - Run Task Immediately: This enables the system to perform a preview analysis in the Summary Review step. The scheduling option for the download phase is Run Immediately Following Download.
  - Run Task At: This enables you to specify a later date and time that you want the installation or download performed.
- 3 Click **Next** to go to the next step or click **Cancel** to close the Install Patch window. A scheduled patch installation can be cancelled (prior to its execution), even if the patch download has already completed.

## Setting Up Email Notifications for an HP-UX Patch Installation

You can set up email notifications to alert users when the download and installation operations complete successfully or with errors.

To set up email notifications, follow these steps:

- 1 From the Install Patch window, click **Next** to advance to the Notifications step.

- 2 To set the notification status on the success of a Job, select the icon. To set the notification status on the failure of a Job, select the icon. By default, the Notification step displays only the notification status for the installation phase.
- 3 Enter a Ticket ID to be associated with a Job in the Ticket ID field.
- 4 Click **Next** to go to the next step or click **Cancel** to close the Install Patch window.

If you previously selected Staged in the Install Options step, the Notifications pane displays notification options for both the download and installation phases.

## Previewing an HP-UX Patch Installation

The installation preview process provides an up-to-date report about the patch state of servers. The installation preview is an optional step that lets you see what patches, either single patch or patches part of standard HP-UX bundle, will be installed on managed servers and what type of server reboots are required. This preview process verifies whether the servers you selected for the patch installation already have that patch installed. In some cases, a server could already have the patch installed if a system administrator manually installed it, which means that Patch Management does not know about it.

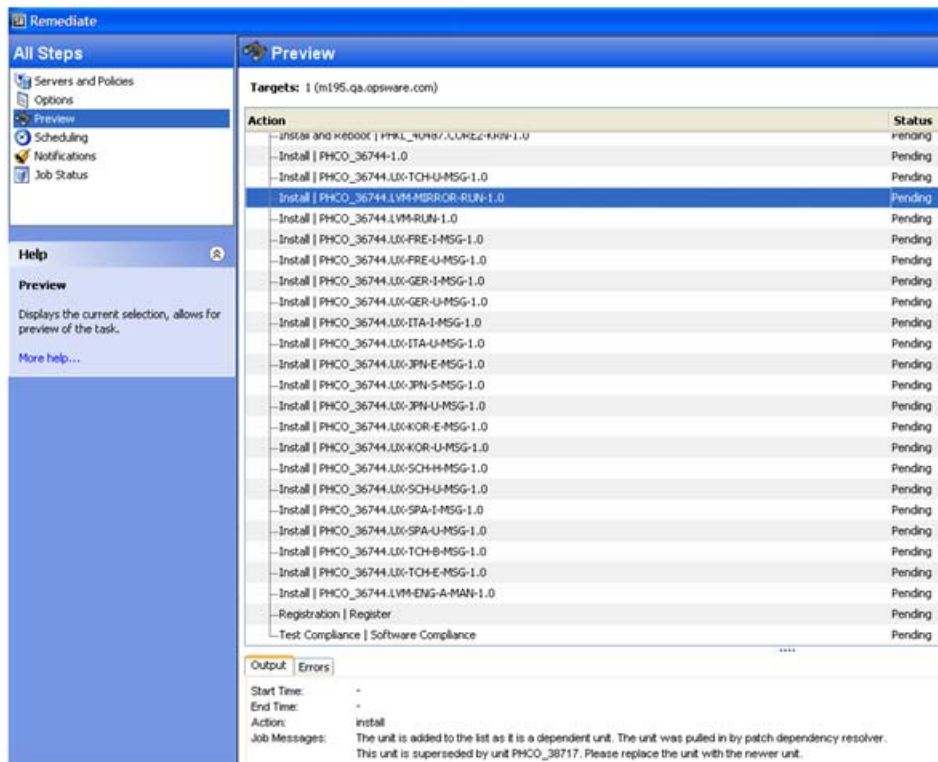
The preview process also reports on dependency information, such as patches that require certain HP-UX products, and patches that obsolete other patches or are obsoleted by other patches. If a dependency is not met, Patch Management displays an error message indicating this condition.

To preview a patch installation, follow these steps:

- 1 From the Install Patch window, click **Next** to advance to the Summary Review step.
- 2 Verify the information displayed for the Servers, Server Groups, and Patches at the top of the window.
- 3 (*Optional*) Click **Preview** to see the separate actions that will be performed when the patch is installed. To view the details of a previewed action, select a row in the table.
- 4 Click **Start Job** to launch the installation job or click **Cancel** to close the Install Patch window without launching the installation.

If you selected Run Task Immediately in the Scheduling step, the job begins now. If you selected Run Task At, the job will be launched at the specified time and date.

The following graphic shows the patch preview information.



## Viewing the Job Progress of an HP-UX Patch Installation

You can review progress information about a patch installation (job), such as whether actions completed or failed.

To display job progress information, follow these steps:

- 1 From the Install Patch window, click **Next** to advance to the Job Progress step. This starts the installation job.

The Progress bar and text indicate how many of the actions listed in the table were completed. For each server, the following actions can be performed:

- Analyze: SA examines the patches needed for the installation, checks the managed servers for the most recent patches installed, and determines other actions it must perform.
  - Download: The patch is downloaded from SA to the managed server.
  - Install: After being downloaded, the patch is installed.
  - Final Reboot: If this action is specified in the Pre & Post Actions step, the server is rebooted.
  - Pre/Post Install/Download Script: If this action is specified in the Pre & Post Actions step, a script is run before or after the uninstallation.
  - Install & Reboot: When a patch will be installed is also when the server will be rebooted.
  - Verify: Installed patches will be included in the software registration.
- 2 To view additional details about a specific action, select the row in the table to display the start and completion times of the job. From the Navigation pane, select Jobs and Sessions to review detailed information about the job.
  - 3 Click **Stop Job** to prevent the job from running or click **Close** to close the Install Patch window.

# Uninstalling HP-UX Patches and Bundles

Uninstallation of HP-UX Patch & Bundles is not supported in SA 7.84 Release. To uninstall the HP-UX patch and bundles from a managed server, you must directly uninstall the HP-UX patch and bundles from the managed server.






## HP-UX Patch Compliance

A HP-UX Patch compliance scan compares the HP-UX patches that are installed on a managed server with the HP-UX patch policies that are attached to the server. If the actual server configuration does not match the HP-UX patch policies attached to the server, the server is out of compliance with the HP-UX patch policies. In addition, if a patch in the patch policy has been superseded by a newer patch and the newer patch is installed on a server, that server will be marked as compliant.

In the SA Client, when you perform a patch compliance scan, the scan indicates the server's overall compliance with all the HP-UX patch policies attached to the server. Even if only one HP-UX patch policy attached to the server is not compliant, the server is considered non-compliant. You can then view the non-compliant server and remediate the server against the applicable patch policy.

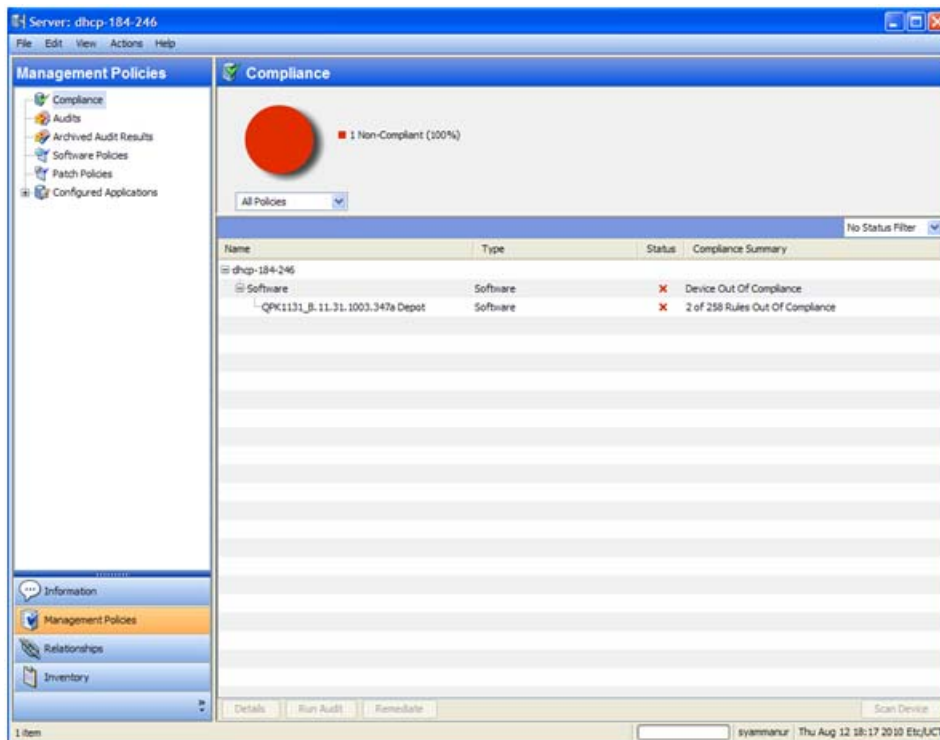
The SA Client displays the following compliance information for a patch policy:

### States of Patch Compliance for a Managed Server

Compliance Status of the Managed Server	Icon	Description
Compliant		All the patch policies attached to a server are compliant — all the patches specified in all the patch policies are installed on the server.
Non-compliant		At least one of the patch policies attached to the server is not compliant.
Scan Started		The patch compliance information is currently being gathered.
Scan Failed		The patch compliance scan was unable to run.
Scan Needed		The patch compliance information needs to be gathered or the compliance information may be inaccurate.
Not Applicable	—	The patch compliance information does not apply.



The following example show the patch compliance status for the Standard HP-UX bundle:



In the example, SA is reporting that the compliance status for the Standard HP-UX QPK bundle is “2 of 258 rules out of compliance.” The total number of patches within QPK bundle is 259. SA determined that one patch in this bundle is not applicable to this managed server. Therefore, it reports compliance status only for 258 patches instead of 259 patches.

SA also determined that two patches have superseded patches, and these superseded patches are installed on the server but not uploaded in the repository. Therefore, they are reported as out of compliance.

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