

IBM Endpoint Manager  
Version 9.1

*Patch Management for CentOS  
User's Guide*





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**Note**

Before using this information and the product it supports, read the information in "Notices" on page 27.

This edition applies to version 9, release 1, modification level 0 of IBM Endpoint Manager (product number 5725-C45) and to all subsequent releases and modifications until otherwise indicated in new editions.

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## Chapter 1. Overview

IBM® Endpoint Manager Patch Management for CentOS Linux keeps your Linux clients current with the latest updates and service packs.

Patch management for CentOS is available through the following Fixlet® sites:

- Patches for CentOS 5
- Patches for CentOS 6

For each new patch or update that becomes available, Endpoint Manager releases a Fixlet that can identify and remediate all the computers in your enterprise that need it. With a few keystrokes, the Endpoint Manager Console Operator can apply the patch to all the relevant computers and visualize its progress as it deploys throughout the network. The Endpoint Manager agent checks the operating system version, file versions, the language of the system and other relevant factors to determine when and if a patch is necessary.

Endpoint Manager tests each Fixlet in its laboratory before it is released and often finds issues that are dealt with by attaching extra notes to the Fixlet. These notes typically allow the Console Operator to work around the problem, adding extra value to the patching process. Endpoint Manager incorporates also user feedback into notes, ensuring that you receive the latest information.

Fixlets allow you to manage large numbers of updates and patches with comparative ease, enabling automated, highly targeted deployment on any schedule that you want. Large downloads can be phased to optimize network bandwidth and the entire deployment process can be monitored, graphed, and recorded for inventory or audit control.

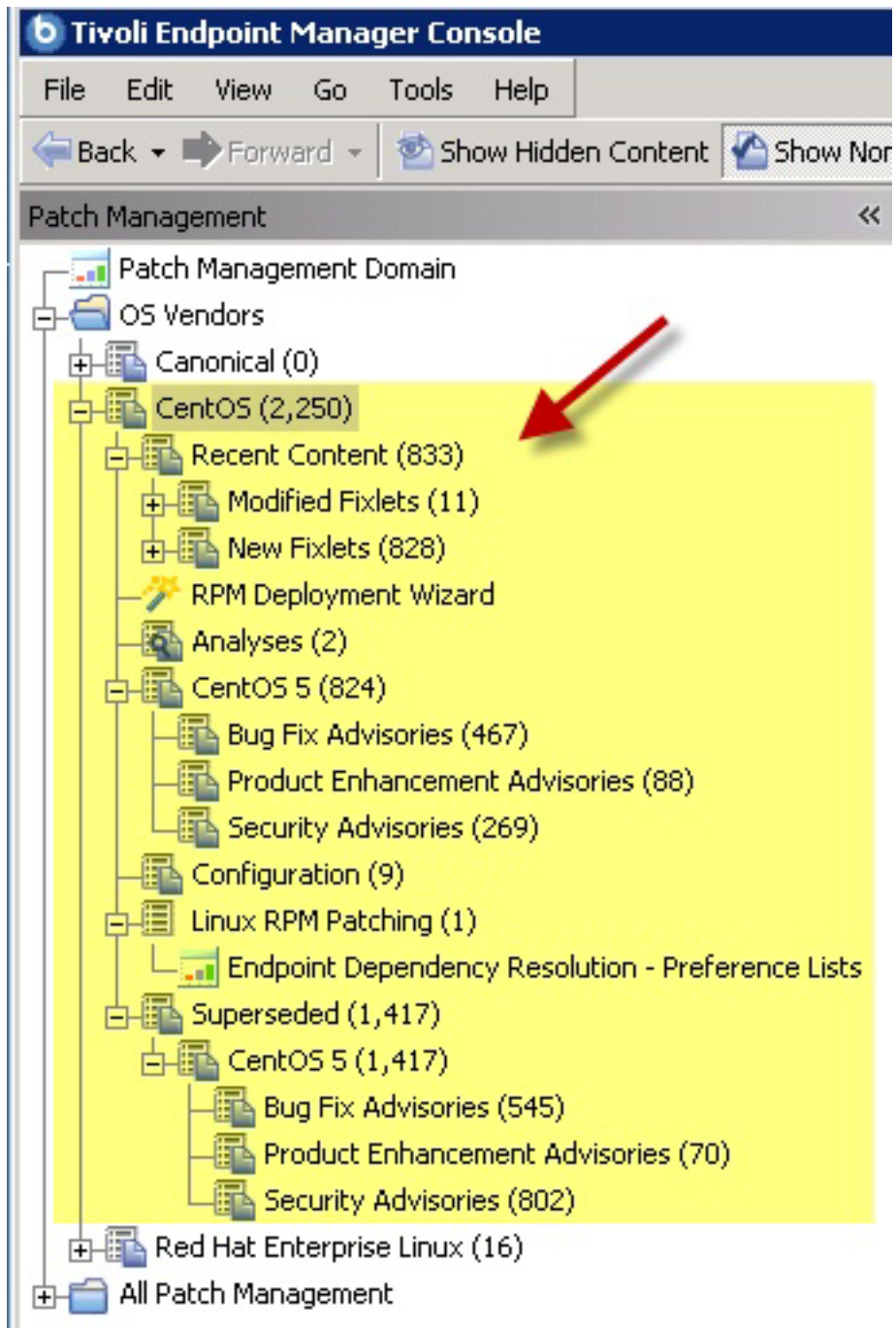


Figure 1. Patch Management navigation tree

## Supported Platforms

Endpoint Manager Patch Management for CentOS Linux provides CentOS Security Advisories, Fix Advisories, and Enhancement Advisories on the CentOS Linux 5 and 6 platforms.



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## Chapter 2. Setup

Setting up your environment for patch management.

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### Site subscription

Sites are collections of Fixlet messages that are created internally by you, by IBM, or by vendors.

Subscribe to a site to access the Fixlet messages to patch systems in your deployment.

You can add a site subscription by acquiring a Masthead file from a vendor or from IBM or by using the Licensing Dashboard. For more information about subscribing to Fixlet sites, see the *IBM Endpoint Manager Installation Guide*.

For more information about sites, see the *IBM Endpoint Manager Console Operator's Guide*.

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### Download plug-ins

Download plug-ins are executable programs that download a specified patch from the website of the patch vendor. To ease the process of caching, Fixlets have an incorporated protocol that uses download plug-ins.

For the Fixlet to recognize the protocol, the related download plug-in must be registered. You must use the Manage Download Plug-ins dashboard to register the download plug-in. After you register the plug-in, you can run the Fixlets to download, cache, and deploy patches from the IBM Endpoint Manager console.

If you already registered the plug-in, you can use the Manage Download Plug-ins dashboard to run the update. You must use the dashboard also to unregister and configure the download plug-in. For more information about the dashboard, see the following topics.

**Note:** Use the official mirror server configuration when you plan to download large amounts of packages. Specify the mirror server URL and credentials during the download plug-in registration or configuration to avoid being locked out of your account.

**Note:** If you install the download plug-in on relays, it is suggested that you also install it on the server.

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### Manage Download Plug-ins dashboard

Use the Manage Download Plug-ins dashboard to oversee and manage download plug-ins in your deployment.

You can use the Manage Download Plug-ins dashboard to register, unregister, configure, and upgrade the download plug-ins for different patch vendors. For more information about these features, see the following topics.

You must subscribe to the Patching Support site to gain access to this dashboard. To view the Manage Download Plug-ins dashboard, go to **Patch Management domain > All Patch Management > Dashboards > Manage Download Plug-ins**.

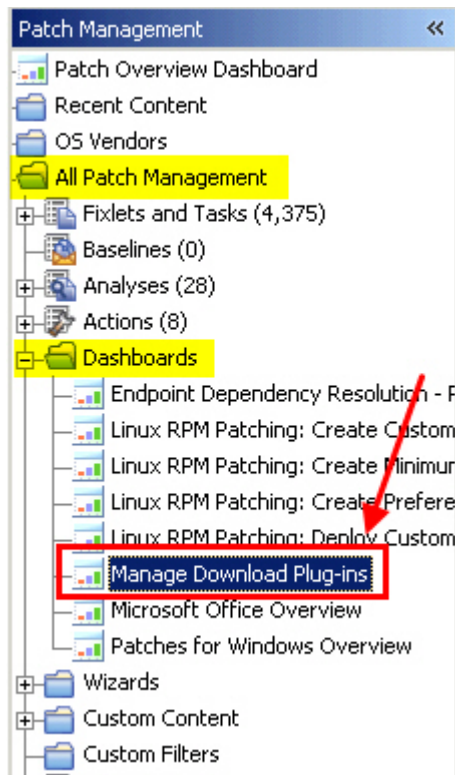


Figure 2. Patch Management navigation tree

The dashboard displays all the servers and windows-only relays in your deployment. Select a server or relay to view all the plug-ins for that computer. The dashboard shows you also the version and status for each plug-in in one consolidated view.

**Manage Download Plug-ins**

You can use this dashboard to manage download plug-ins for different vendor sites on servers and relays. Select a server or relay to view the applicable download plug-ins.

**Servers And Relays**

Name	Operating System	Type	Encryption Enabled
ACROBATX-XP-X64	WinXP-2003 5.2.3790	Relay	Yes
TEM-NW-BESSRV	Win2008R2 6.1.7600	Server	Yes

**Plug-ins**

Register Unregister Configure Upgrade

Plug-in Name	Plug-in Version	Status
AIX Plug-in	1.8.0.0	New Version Available
CentOS Plug-in	N/A	Not Supported
HP-UX Plug-in	2.0.0.0	Up-To-Date
RedHat Plug-in	2.0.0.0	Up-To-Date
Solaris Plug-in	1.7.0.0	New Version Available
SUSE Plug-in	N/A	Not Supported

Figure 3. Manage Download Plug-ins dashboard

A plug-in can be in one of the following states:

- Not Installed
- New Version Available
- Up-To-Date
- Not Supported

**Note:** CentOS and SUSE Linux download plug-ins are not supported in relays.

The dashboard has a live keyword search capability. You can search based on the naming convention of the servers, relays, and plug-ins.

## Registering the CentOS download plug-in

Use the Manage Download Plug-ins dashboard to register the download plug-in for CentOS.

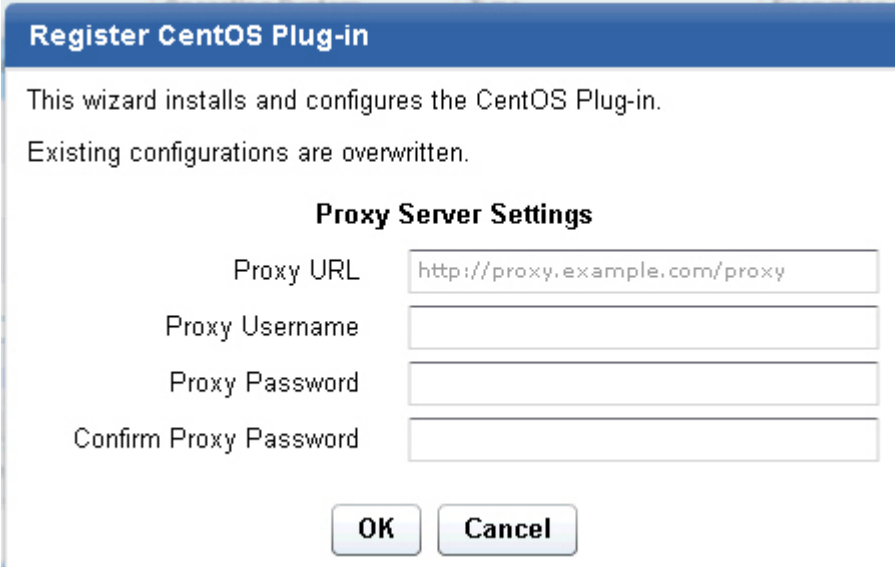
You must complete the following tasks:

- Subscribe to the **Patching Support** site to gain access to the Manage Download Plug-ins dashboard.
- Enable the **Encryption for Clients** Fixlet on servers and relays for which you want to register the download plug-in.
- Activate the **Encryption Analysis for Clients** analysis and **Download Plug-in Versions** analysis.

When you register the download plug-in on a computer without the plug-in, the plug-in is automatically installed and the configuration file is created.

If a download plug-in is already installed on the computer, the configuration file is overwritten.

1. From the Patch Management domain, click **All Patch Management > Dashboards > Manage Download Plug-ins dashboard**.
2. From the Servers and Relays table, select the server or relay on which the download plug-in is to be registered.
3. From the Plug-ins table, select **CentOS Plug-in**.
4. Click **Register**. The Register CentOS Plug-in wizard displays.



**Register CentOS Plug-in**

This wizard installs and configures the CentOS Plug-in.  
Existing configurations are overwritten.

**Proxy Server Settings**

Proxy URL

Proxy Username

Proxy Password

Confirm Proxy Password

**OK** **Cancel**

Figure 4. Register CentOS download plug-in wizard

5. Optional: Enter the proxy parameters if the downloads must go through a proxy server.

**Proxy URL**

The URL of your proxy server. It must be a well-formed URL, which contains a protocol and a host name. The URL is usually the IP address or DNS name of your proxy server and its port, which is separated by a colon. For example: `http://192.168.100.10:8080`.

**Proxy Username**

Your proxy user name if your proxy server requires authentication. It is usually in the form of `domain\username`.

**Proxy Password**

Your proxy password if your proxy server requires authentication.

**Confirm Proxy Password**

Your proxy password for confirmation.

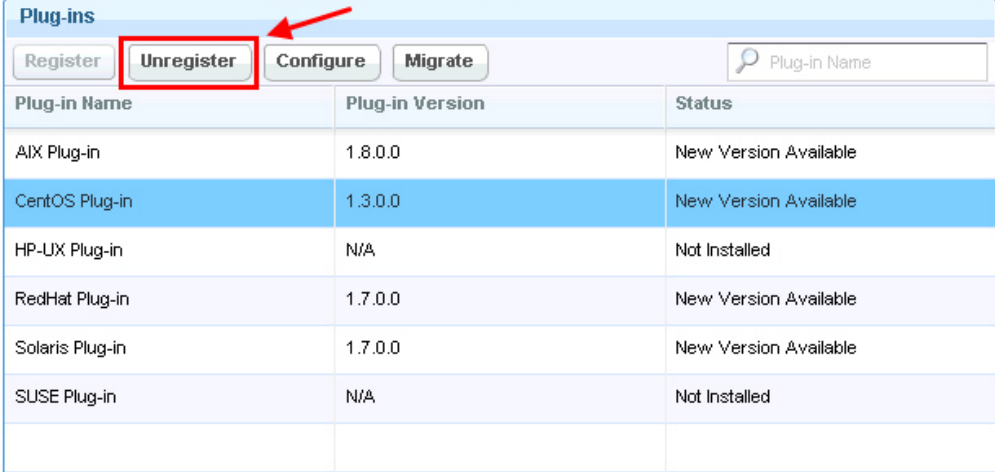
6. Click **OK**. The Take Action dialog displays.
7. Select the target computer.
8. Click **OK**.

You successfully registered the CentOS download plug-in.

## Unregistering the CentOS download plug-in

Use the Manage Download Plug-ins dashboard to unregister the download plug-in for CentOS.

1. From the Patch Management domain, click **All Patch Management > Dashboards > Manage Download Plug-ins dashboard**.
2. From the Servers and Relays table, select the server or relay on which the download plug-in is to be unregistered.
3. From the Plug-ins table, select **CentOS Plug-in**.
4. Click **Unregister**.



The screenshot shows a web interface titled "Plug-ins". At the top, there are four buttons: "Register", "Unregister", "Configure", and "Migrate". The "Unregister" button is highlighted with a red box, and a red arrow points to it from the right. To the right of the buttons is a search box labeled "Plug-in Name". Below the buttons is a table with three columns: "Plug-in Name", "Plug-in Version", and "Status". The table contains the following data:

Plug-in Name	Plug-in Version	Status
AIX Plug-in	1.8.0.0	New Version Available
CentOS Plug-in	1.3.0.0	New Version Available
HP-LIX Plug-in	N/A	Not Installed
RedHat Plug-in	1.7.0.0	New Version Available
Solaris Plug-in	1.7.0.0	New Version Available
SUSE Plug-in	N/A	Not Installed

Figure 5. Unregister the CentOS download plug-in

The Take Action dialog displays.

5. Select the target computer.
6. Click **OK**.

You successfully unregistered the CentOS download plug-in.

## Configuring the CentOS download plug-in

Use the Manage Download Plug-ins dashboard to configure the download plug-in for CentOS.

You might want to take note of your existing configuration for the download plug-in. Existing configurations are overwritten when you configure the download plug-in.

1. From the Patch Management domain, click **All Patch Management > Dashboards > Manage Download Plug-ins dashboard**.
2. From the Servers and Relays table, select the server or relay on which the download plug-in is to be configured.
3. From the Plug-ins table, select **CentOS Plug-in**.
4. Click **Configure**. The Configure CentOS Plug-in wizard displays.

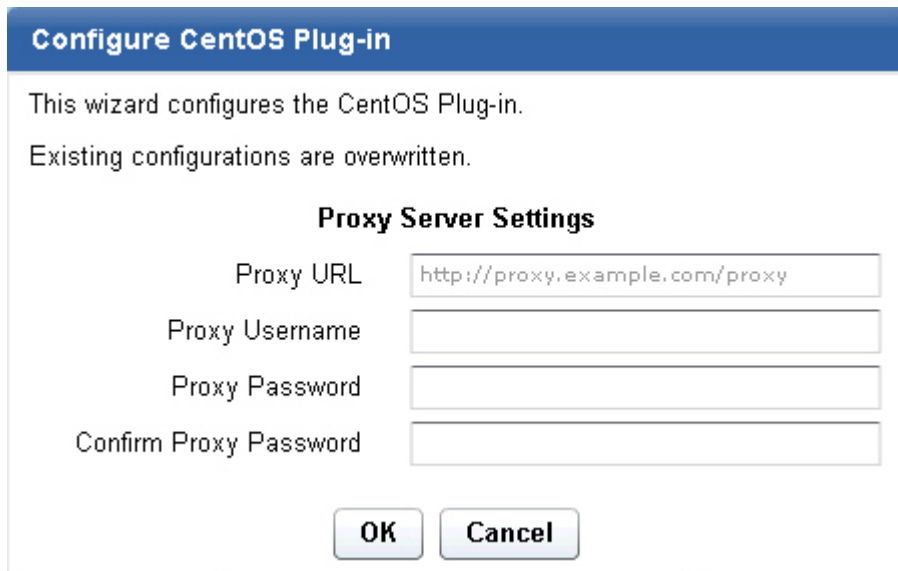


Figure 6. Configure CentOS download plug-in wizard

- Optional: Enter the proxy parameters if the downloads must go through a proxy server.

**Proxy URL**

The URL of your proxy server. It must be a well-formed URL, which contains a protocol and a host name. The URL is usually the IP address or DNS name of your proxy server and its port, which is separated by a colon. For example: `http://192.168.100.10:8080`.

**Proxy Username**

Your proxy user name if your proxy server requires authentication. It is usually in the form of `domain\username`.

**Proxy Password**

Your proxy password if your proxy server requires authentication.

**Confirm Proxy Password**

Your proxy password for confirmation.

- Click **OK**. The Take Action dialog displays.
- Select the target computer.
- Click **OK**.

You successfully configured the CentOS download plug-in.

## Migrating the CentOS download plug-in

You must migrate the CentOS download plug-in if the plug-in version is earlier than 2.0.0.0. You only need to do this once. The download plug-in is upgraded to the latest version after migration.

You might want to take note of your existing configuration for the download plug-in. Existing configurations are overwritten when you migrate the download plug-in.

- From the Patch Management domain, click **All Patch Management > Dashboards > Manage Download Plug-ins dashboard**.

2. From the Servers and Relays table, select the server or relay on which the download plug-in is to be migrated.
3. From the Plug-ins table, select **CentOS Plug-in**.
4. Click **Migrate**. The Migrate CentOS Plug-in wizard displays.

**Migrate CentOS Plug-in**

Migrate plug-ins that are earlier than version 2.0.0.0.

This wizard migrates the CentOS Plug-in and upgrades it to the latest version.

Existing configuration are overwritten.

**Proxy Server Settings**

Proxy URL

Proxy Username

Proxy Password

Confirm Proxy Password

Figure 7. Migrate CentOS download plug-in wizard

5. Optional: Enter the proxy parameters if the downloads must go through a proxy server.

**Proxy URL**

The URL of your proxy server. It must be a well-formed URL, which contains a protocol and a host name. The URL is usually the IP address or DNS name of your proxy server and its port, which is separated by a colon. For example: `http://192.168.100.10:8080`.

**Proxy Username**

Your proxy user name if your proxy server requires authentication. It is usually in the form of `domain\username`.

**Proxy Password**

Your proxy password if your proxy server requires authentication.

**Confirm Proxy Password**

Your proxy password for confirmation.

6. Select the target computer on which the download plug-in is to be upgraded.
7. Click **OK**.

You successfully migrated and upgraded the CentOS download plug-in.

## Upgrading the CentOS download plug-in

Use the Manage Download Plug-ins dashboard to upgrade the download plug-in for CentOS.

1. From the Patch Management domain, click **All Patch Management > Dashboards > Manage Download Plug-ins dashboard**.
2. From the Servers and Relays table, select the server or relay on which the download plug-in is to be upgraded.
3. From the Plug-ins table, select **CentOS Plug-in**.
4. Click **Upgrade**. The Take Action dialog displays.
5. Select the target computer.
6. Click **OK**.

You now have the latest version of the CentOS download plug-in installed.



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## Chapter 3. Using Patch Management for CentOS Linux

Learn how to patch CentOS endpoints.

To view the corresponding Red Hat bulletin for a particular Fixlet, select the *Click here to view the patch* action to view the patch page.

If an action is successful, the results are saved in a log file on the endpoint. You can activate an analysis to view the results. You can navigate to the analysis by clicking Analyses in the navigation tree and selecting "Endpoint Dependency Resolution - Deployment Results".

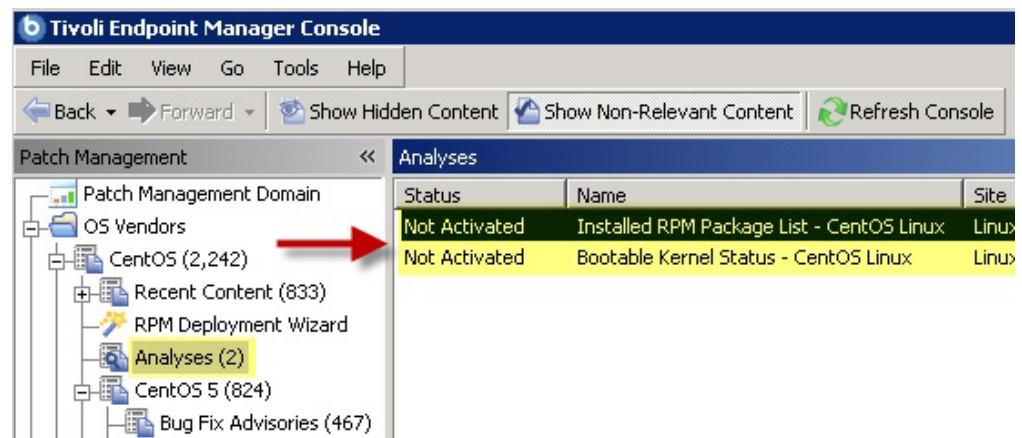


Figure 8. List of Analyses

From there, click *Activate*.

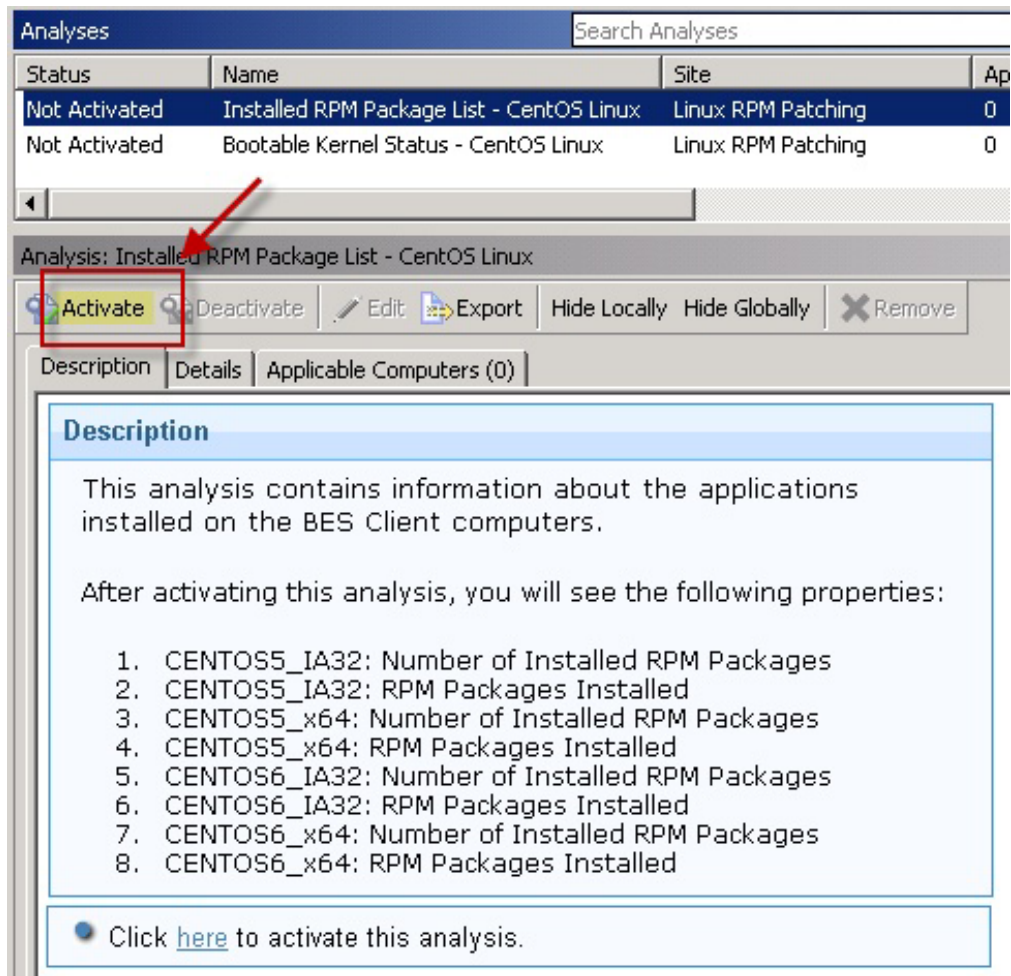


Figure 9. Activate the analysis

Click the Results tab in the Analysis window that is displayed after you activate the analysis.

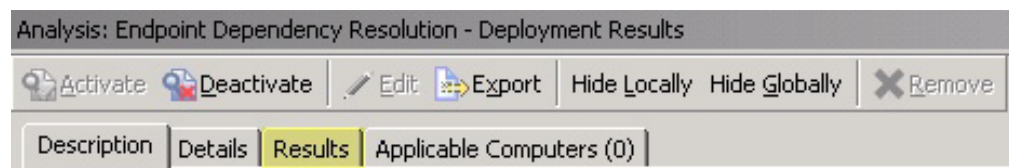


Figure 10. Results tab

When you review the properties of an endpoint, you can view the current deployment information on that system. To view this data, navigate on the *All Content* domain and select the *Computers* node. In the work area select the computer you want to inspect. Scroll down to the Deployment Results.

You can limit the length of the output by running the *Endpoint Dependency Resolution – Set deployment results analysis report length* task. To access this task, click OS Vendors from the navigation tree, and then click the *CentOS 5 or 6* and *Configuration* subnodes.

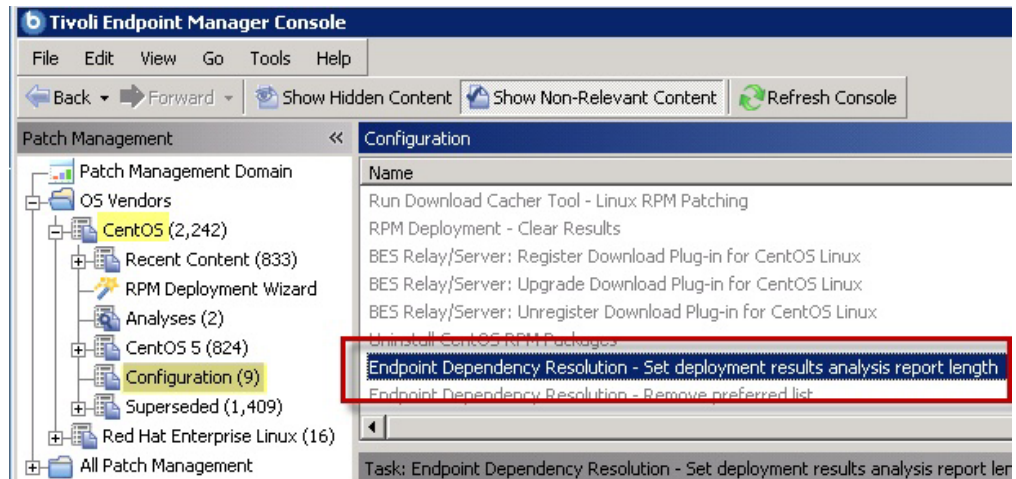


Figure 11. Endpoint Dependency Resolution – Set deployment results analysis report length task

Click *Take Action* and enter the number of entries, then click *OK*. The default analysis length is 100 entries.

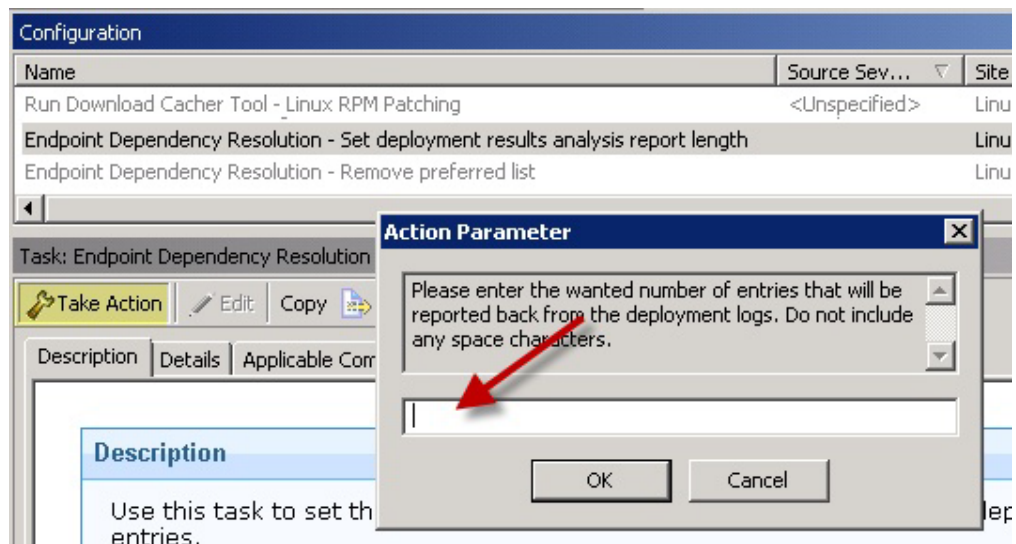


Figure 12. Action Parameter for number of entries

When running a CentOS Linux patch Fixlet, you can also deploy a test run before applying the patch. You can view the Deployment Results analysis to determine if the dependencies have been successfully resolved and if an installation will be successful.

**Note:** When using the test run feature, the action reports back as Fixed, even if the test fails.

Kernel Fixlets provide the option to upgrade or install all kernel packages. The upgrade option replaces existing kernel packages with later versions. The install option installs the later kernel packages next to the previous versions. The default

behavior for kernel updates is to install packages side by side. Additionally, each kernel update Fixlet provides the ability to test each of these options.

---

## Use the RPM Deployment Wizard

Use the RPM Deployment Wizard to facilitate deployment of RPM packages.

This wizard does not resolve dependencies and is only meant to handle simple deployment cases. In the Content Filters part of the navigation tree, click **OS Vendors > CentOS Linux > RPM Deployment Wizard**.

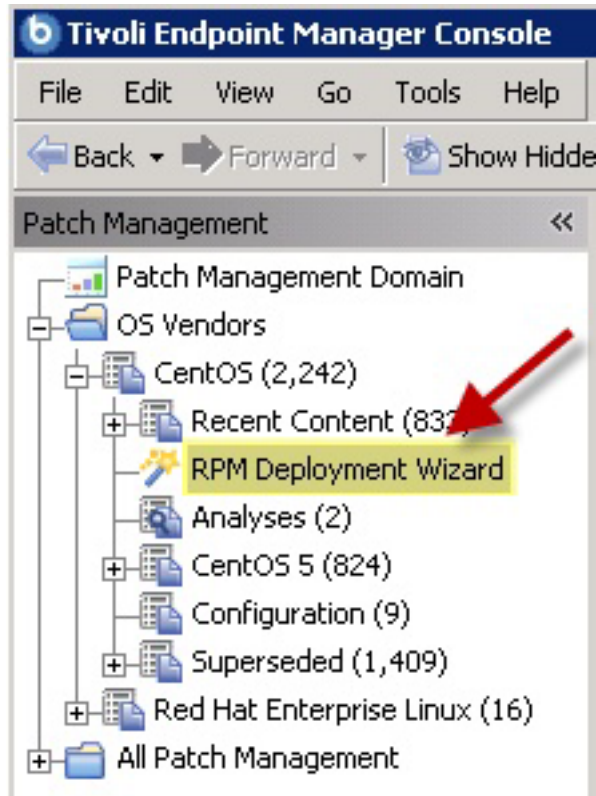


Figure 13. RPM Deployment Wizard in the navigation pane

When the Wizard opens, enter the RPM package that you want to deploy.

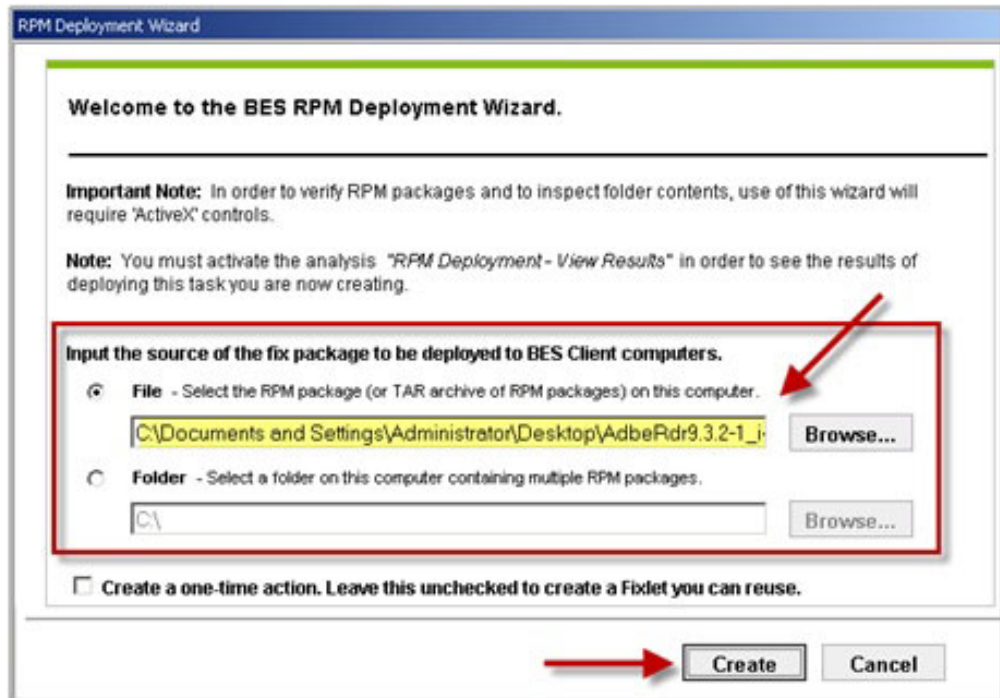


Figure 14. Specify the source RPM package

Select the check box if you want to create a one-time action, or leave blank to create a Fixlet you can reuse. When complete, click **Create**. You see the following progress screen:

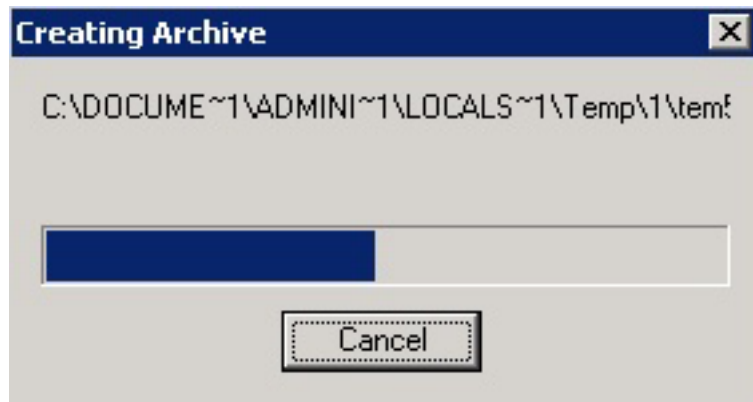


Figure 15. Progress screen - Creating archive

When the first Task window opens, click **OK** and enter your Private Key Password. Then click in the Actions box to start deployment.

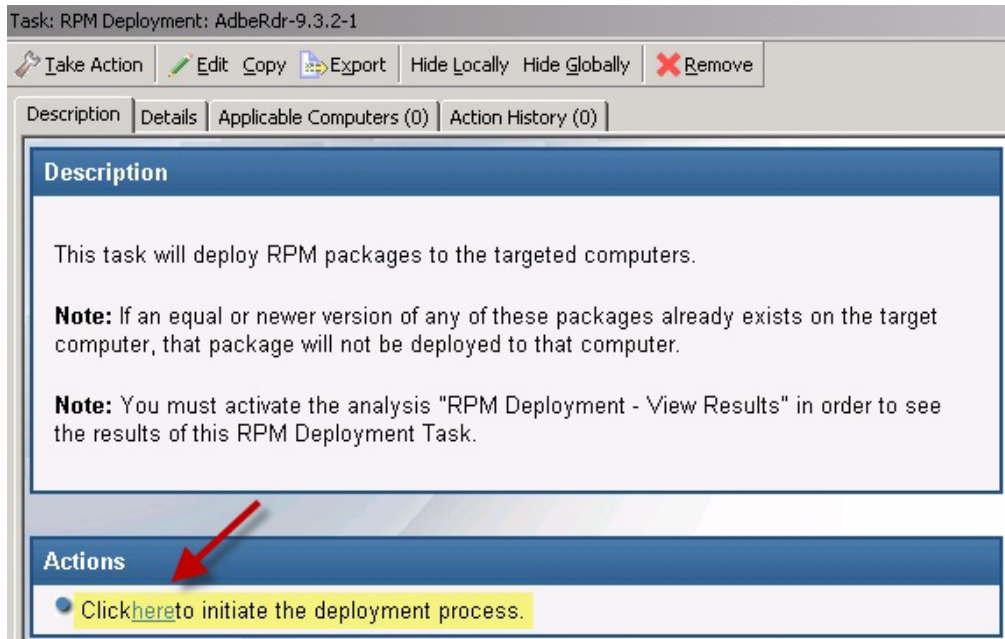


Figure 16. Task window - Actions box

When the Take Action dialog opens, use the tabs across the top of the window to set parameters for this Action. Click **OK** and enter your Private Key Password. The Wizard deploys this action to your clients.

## Manage Preference Lists

Preference lists are lists of packages that affect the dependencies that are installed for systems patched by content with endpoint dependency resolution.

The following conditions apply to packages:

- Packages included in *forbidden* preference lists are forbidden when dependencies are resolved.
- Packages included in *preferred* preference lists are preferred over packages not in the list when dependencies are resolved.
- Packages included higher in the preference lists are preferred over lower packages. You can manage these preference lists by using the Preference Lists Dashboard.

### Using the Preference Lists Dashboard

You can navigate to the dashboard by expanding the Linux RPM Patching node and selecting the *Endpoint Dependency Resolution - Preference Lists* dashboard.

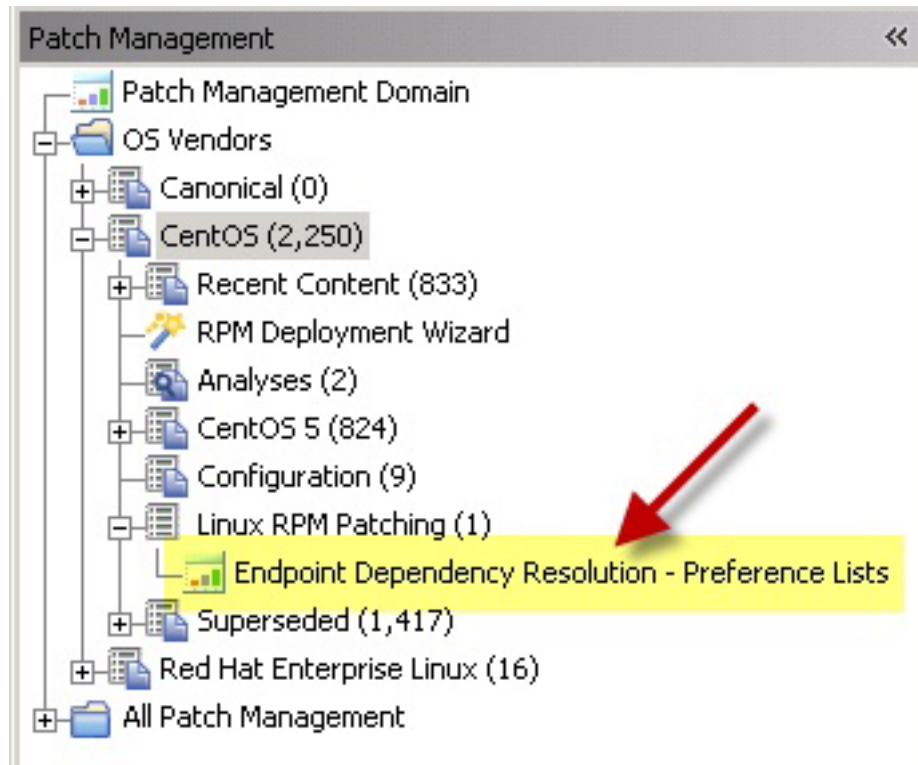


Figure 17. Navigate to the Endpoint Dependency Resolution - Preference Lists wizard

To create new Forbidden package lists, click **New Forbidden Package List**.

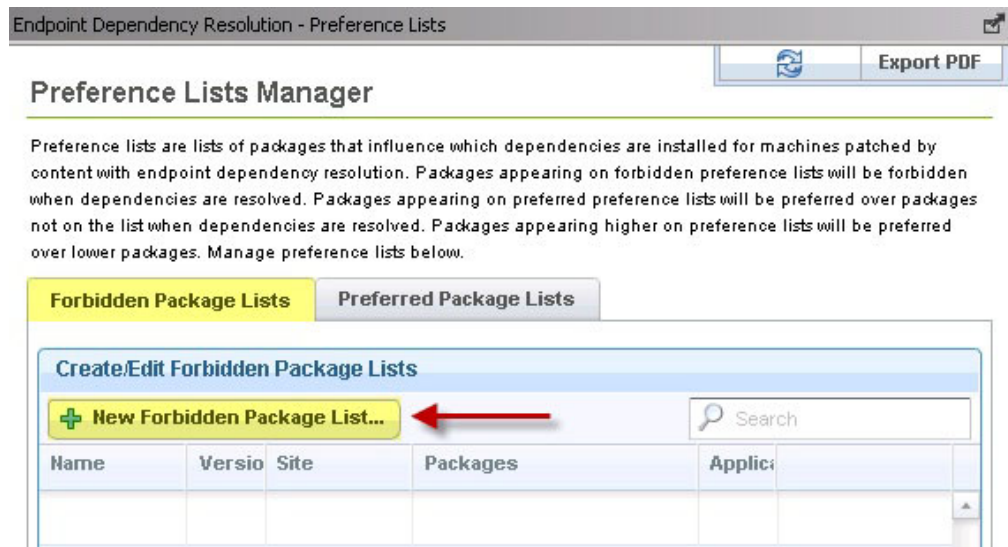


Figure 18. Preference Lists Manager

In the next dialog, you select a site for the preference lists. Endpoints subscribed to this site are relevant to this preference list. Choose a site and click **Next**.

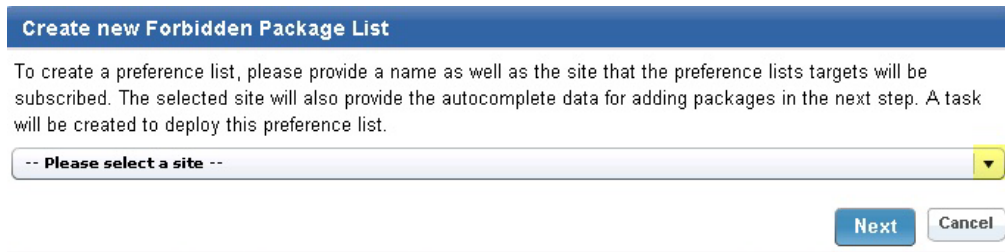


Figure 19. Create new Forbidden Package List

After entering a name for the list, you can begin populating your preference list with packages. Type the name in the **Package to Add** field and click **Add**. As you type, autocomplete suggestions are shown. These suggestions are populated using target packages from the selected site. After completing your list, click **Save**, click **OK**, and enter your Private Key Password. A task that deploys this preference list is displayed in the navigation tree.

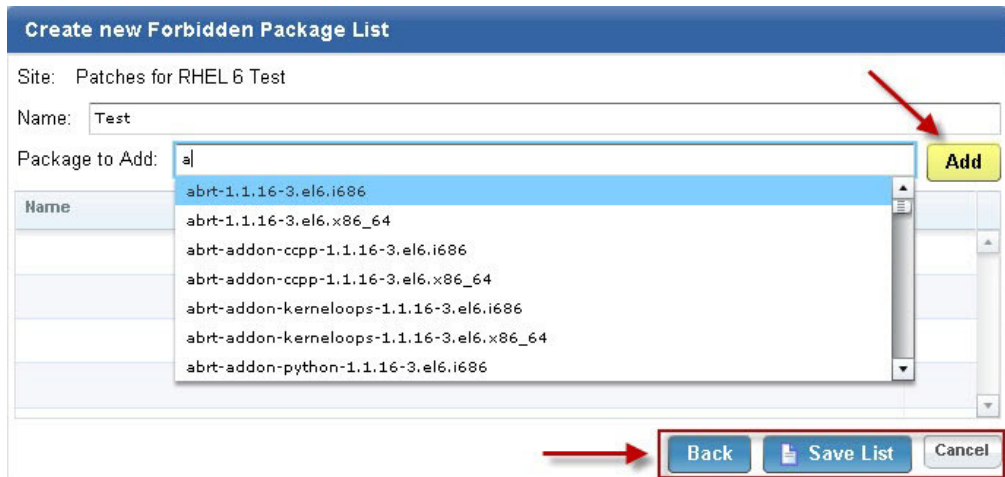


Figure 20. Add package

To edit a preference list, click **Edit** for that particular list.

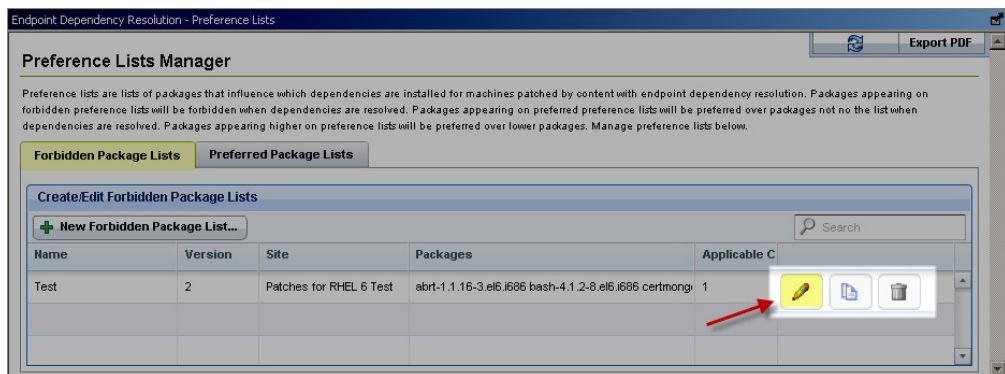


Figure 21. Edit Forbidden Package List



This opens the same dialog as before and allows you to edit the name and packages in the list. Click **Save**. To edit the task, click **Edit**. To redeploy the latest version of this list to all systems that already have the list, click **Edit and Redeploy**. Then click **OK** and enter your Private Key Password.

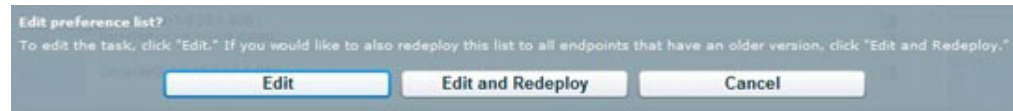


Figure 22. Edit dialog

To create a copy of a preference list, click copy for that particular list.

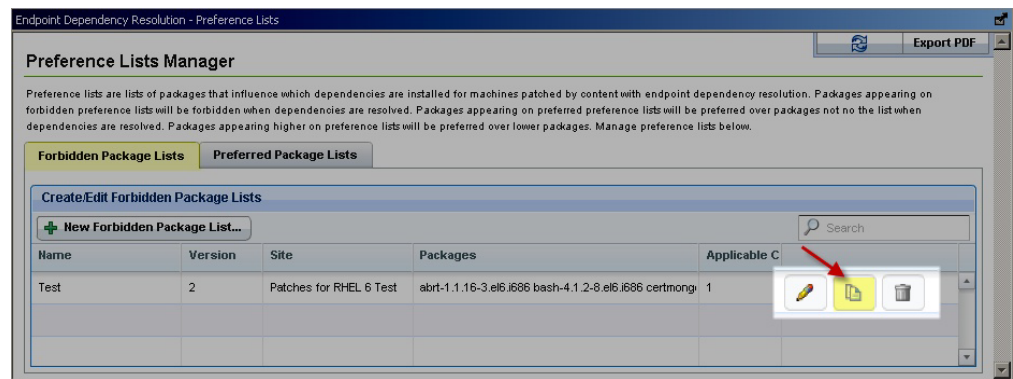


Figure 23. Copy button

A dialog is created with a nearly identical set of data populated throughout the fields. The **Name** field has the word *copy* at the end. Click **Save** to create the new task. To delete a preference list, click **Delete** for that particular list.

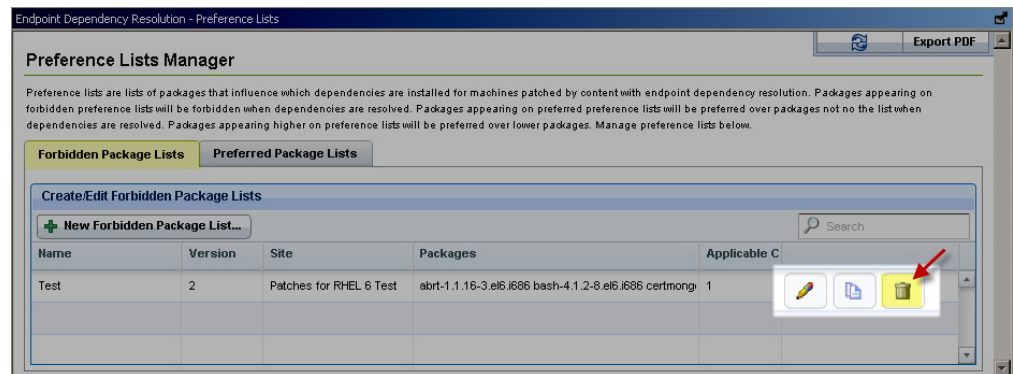


Figure 24. Delete button

To delete the task, click **Delete**. To delete the task and issue an action to remove the preference list from all endpoints that have the list, click **Delete and Update**.

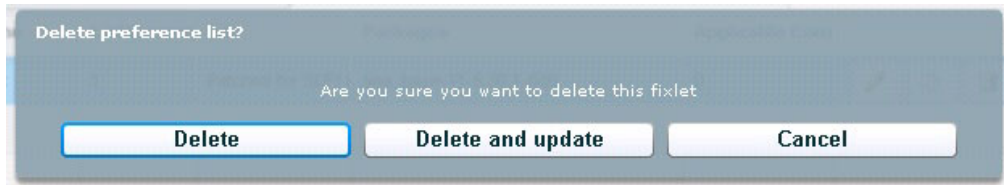


Figure 25. Delete dialog

Preferred package lists can be created and managed in the same way as forbidden packages lists. The controls are listed under the Preferred Package Lists tab of the Preference Lists Dashboard.

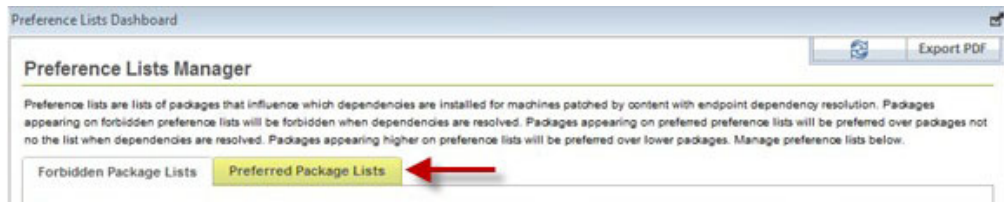


Figure 26. Preferred Package Lists tab

Packages are ordered from top to bottom in preference lists. Drag and drop packages to specify priority.

You can view deployed preference lists and their associated metadata by activating an analysis. Navigate to the analysis by clicking the Analyses node and selecting **Endpoint Dependency Resolution - Preference Lists**. Click the analysis and select **Activate** from the right-click menu.

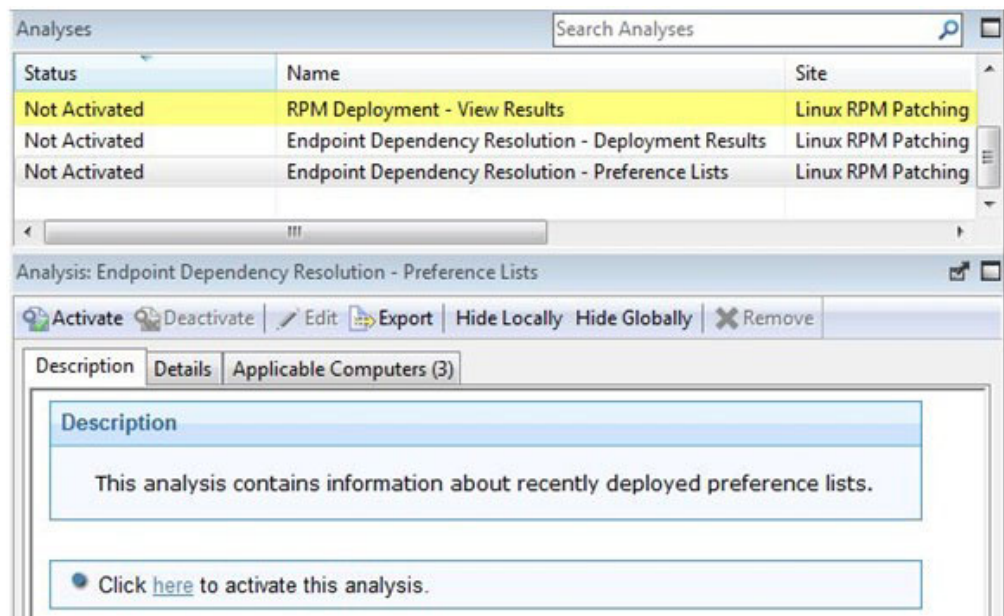
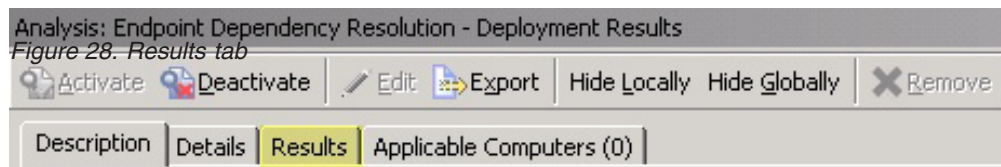


Figure 27. List of analyses

After you activate the analysis, a Results tab displays in the menu. Click **Results**.



When you review an endpoint's properties, you can view the current preference list information on that system.

To remove a preference list from an endpoint, run either the **Remove Endpoint Dependency Resolution – Remove preferred list** or the **Remove Endpoint Dependency Resolution – Remove forbidden list** tasks.

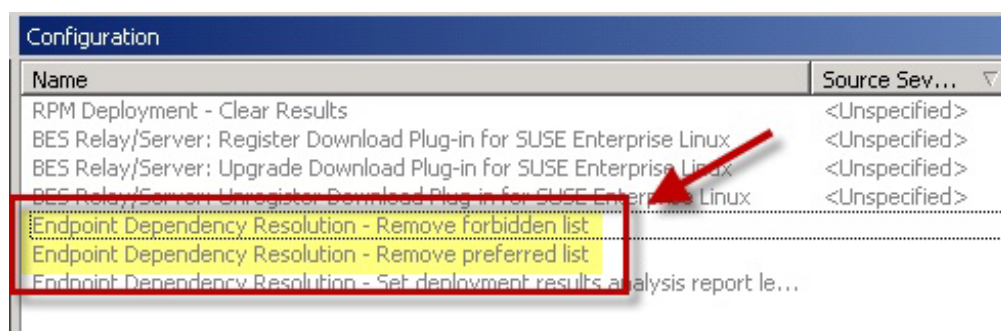


Figure 29. Available Fixlets to remove a preference list

## Uninstall CentOS Linux Patches

Endpoint Manager provides a specific task that removes CentOS RPM packages.

**Note:** This task does not uninstall a package if another installed package depends on the package that you are trying to remove.

Click **OS Vendors** in the navigation tree and select **CentOS**. You see the **Uninstall CentOS RPM Packages** patch in the List Panel on the right.

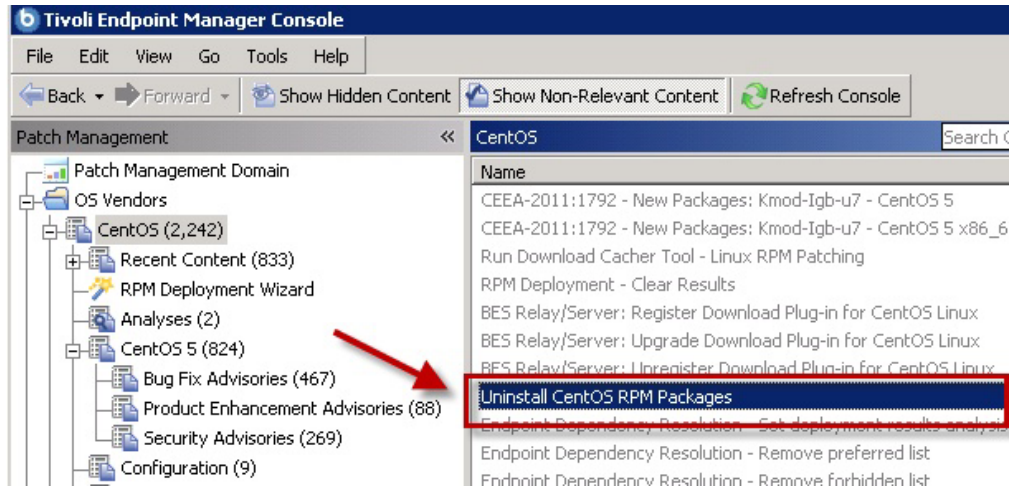


Figure 30. Uninstall CentOS RPM Packages Fixlet

Double-click this Task to open the dialog, and then click in the Actions box to start the uninstall action.

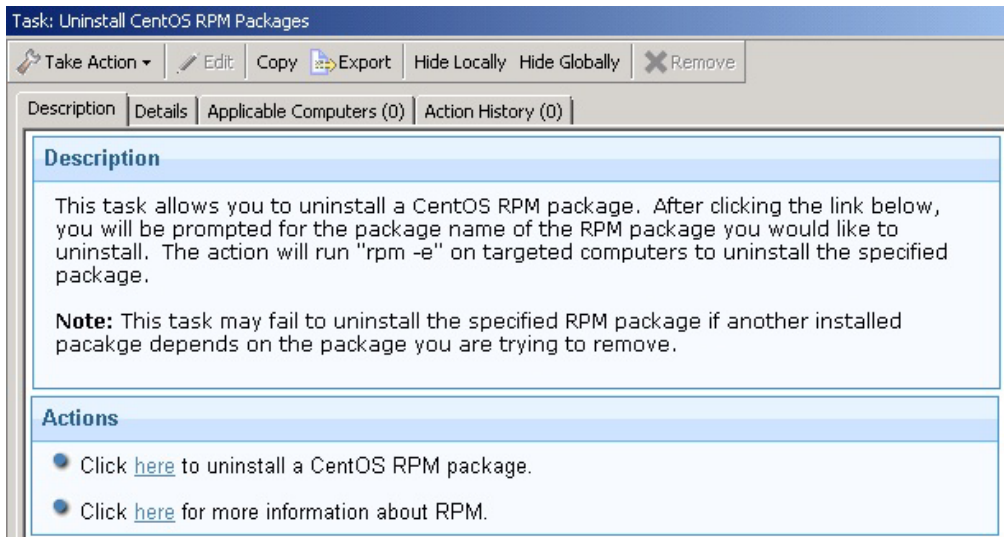


Figure 31. Uninstall CentOS RPM Packages Fixlet - Description Tab

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## Appendix A. Frequently Asked Questions

To better understand Patch Management for CentOS, read the following questions and answers.

### **What are superseded patches?**

Superseded Fixlets are Fixlets that contain outdated packages. If a Fixlet is superseded, then there exists a newer Fixlet with newer versions of the packages. The newer Fixlet ID can be found in the description of the superseded Fixlet.

### **Where are the deployment logs located on endpoints?**

The logs are located in a folder called EDRDeployData in the client folder. (/var/opt/BESClient/EDRDeployData).

### **Why is my action reporting back as a failed download?**

Make sure your download plug-in has been updated to the latest version and is registered with the correct credentials.

### **If I have registered the latest plug-ins, why do downloads still fail?**

There is a known issue with version 8.0.627 not recognizing the whitelist for dynamic downloads. Upgrade to the latest version of IBM Endpoint Manager to resolve the issue.

### **What do I do when action reports back with an “EDR Plugin failure, Invalid set of initially installed packages ? ”**

There is at least one conflict between the packages that exist on the system. The resolver will not work until the conflicting packages are removed.

### **Why is there XML in the deployment results?**

The XML is from the error output of the resolver when the resolver fails to produce a solution. You can look at the description in the “errorType” tag to gain a better understanding of why the failure occurred.

### **What do I do when the deployment results display a “Dependency Resolver Failure, noSolution ? ”**

If the resolver finds that there is no solution, the system cannot install all targets and dependencies because of a conflict between these files and the endpoint files.

### **How often are new dependency graphs generated?**

Dependency graphs are generated every Monday, Wednesday, and Friday.

### **What do I do when an action reports back with an installation failure?**

Check to see if the conflict is caused by a vendor-acquired package. These must be removed for the installation to occur.

**Why does the resolver function select a lower priority package over a higher priority one?**

The resolver will not select a preferred package if selecting that package creates a conflict with another package. Therefore, it is possible for a lower priority package to be selected.

**How do I verify if the download plug-in was registered correctly?**

Run a Fixlet with an action task to verify if the download plug-in is registered correctly. Verify that the patch download is successful. Otherwise, you might need to unregister the download plug-in and register it again.

**How do I register a download plug-in? Do I use the register download plug-in task or the Manage Download Plug-in dashboard?**

To register a download plug-in, you must use the Manage Download Plug-in dashboard in the Patching Support site. Existing register download plug-in tasks are being deprecated. To learn more about plug-in registration, see “Registering the CentOS download plug-in” on page 5.

**Note:** You must also use the Manage Download Plug-in dashboard to unregister, configure, and upgrade download plug-ins. The existing unregister and edit download plug-in tasks are being deprecated. For more information about the dashboard, see the topic on Manage Download Plug-ins dashboard in the IBM Endpoint Manager Information Center.

**I was expecting the password to be obfuscated, but it's still in clear text. Why is that?**

Check if your download plug-in version is earlier than 2.0. If so, you are still using an old version of the download plug-in that stores credentials in clear text. To encrypt credentials, upgrade your download plug-in to version 2.0 or later from the Manage Download plug-ins dashboard in the Patching Support site.

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## Appendix B. Support

For more information about this product, see the following resources:

- [http://pic.dhe.ibm.com/infocenter/tivihelp/v26r1/topic/com.ibm.tem.doc\\_9.1/welcome/welcome.html](http://pic.dhe.ibm.com/infocenter/tivihelp/v26r1/topic/com.ibm.tem.doc_9.1/welcome/welcome.html)
- IBM Endpoint Manager Support site
- IBM Endpoint Manager wiki
- Knowledge Base
- Forums and Communities





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