



BigFix Enterprise System  
*Linux RPM Patching*

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Quick Start Guide

Version 7.2

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All inquiries regarding the foregoing should be addressed to:

BigFix, Inc.  
1480 64th Street, Suite 200  
Emeryville, California 94608

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# Introduction

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## Audience

This guide is meant for Administrators and IT managers who want to manage their Linux software packages more efficiently and with less trepidation. Linux deployments are quite flexible, but the price for that is complexity: you may have several versions of a package that you want to switch between. Suddenly, version control becomes a major project.

**The Linux RPM Patching** Application uses Fixlet technology to precisely target the exact subset of your clients that require patches, updates or rollbacks. From a central BigFix Console, you can visualize software updates as they roll out across your network. Using white lists and black lists, you can set compliance policy corporate-wide or in any departments you choose.

## Versions

The document includes the functionality introduced in the BigFix Enterprise Suite Version 7.2.

## Supported Platforms

This version of Linux RPM Patching currently supports RPM packages that are published and supported by Red Hat and SUSE. The following platforms are supported:

Red Hat Enterprise Linux 5	SuSE Linux Enterprise Server 9
Red Hat Enterprise Linux 4	SuSE Linux Enterprise Desktop 10
Red Hat Enterprise Linux 3	SuSE Linux Enterprise Server 10

Although both SuSE and Red Hat are supported, only Red Hat currently has predefined Fixlet messages for users to customize.

## Terms Used in this Guide

Software package managers have a vocabulary of their own:

- **Target RPMs** – The RPM packages you will be deploying.
- **Dependency RPMs** – The RPM packages that are required for Target RPMs to be installed successfully.
- **Minimum Package List (MPL)** – A list of packages that are commonly installed on most systems. Consider it the least common denominator among the packages installed on your clients.
- **White List** – A list of packages that will be preferred when the dependency resolver is deciding which RPM to use to satisfy a particular dependency.
- **Black List** – A list of packages that are forbidden in both target and dependency RPMs.

## Dependency Resolution

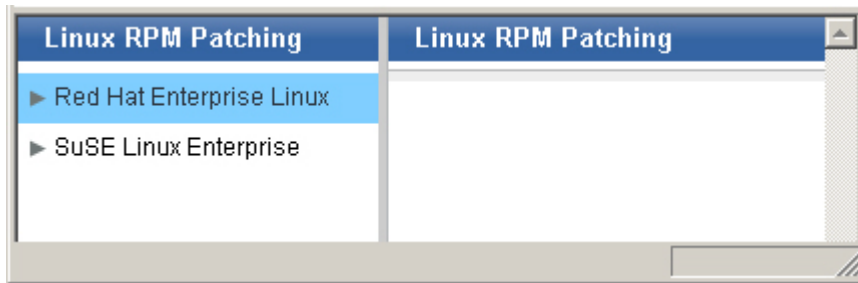
Before Linux packages can be installed they need to satisfy certain dependencies and criteria, some of which you can specify. The sequence that is followed to resolve these criteria is as follows:

1. **Black list** – Your list of packages to exclude is the first criteria to be checked.
2. **White list** – You can specify packages to prefer.
3. **Package Upgrade Option** – If a package upgrade is necessary, the resolution depends on the user's preference of oldest or latest:
  - a. **Oldest** selects the *minimum* version that both satisfies the dependencies and results in an upgrade of the existing package.
  - b. **Latest** selects the *most recent* version of the package which satisfies the dependency.
4. **Add new package** (dependency RPM) – always use the latest version available whenever a package must be added. This is an implicit option.
5. **Architecture Preference** – If two packages from two different architectures satisfy the same dependency, the choice turns on the architecture. This is an implicit option and the preference is made in this order:
  - a. x86\_64
  - b. i686
  - c. i386
6. **No Preference** – When two different packages satisfy the above dependencies, the selection will be chosen by a repeatable random function.

# Using the Dashboard

## Starting up the Dashboard

The Dashboard is the central starting point for Linux RPM Patching. Select **Linux RPM Patching** from the **Dashboards** menu. After loading, the uninitialized Dashboard appears in a new window.

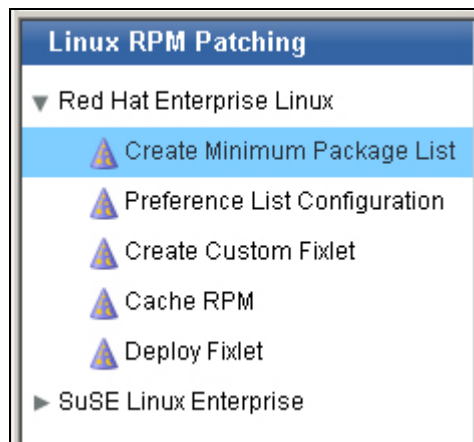


These options let you select either Red Hat or SuSE operating systems.

## Creating a Minimum Package List

You can create a custom Minimum Package List (MPL) to satisfy your internal policy environment. This list can then be used as a part of your Preference List Configuration. Here's how:

1. Click the Red Hat option to open it. There are five main areas of functionality.



2. Click the **Create Minimum Package List** section. A new screen appears.

The screenshot shows a web interface for creating a Minimum Package List (MPL). At the top, a yellow warning banner states: "Warning -- The following analyses necessary to view this dashboard are not activated:" followed by two links: "Installed RPM Package List - Red Hat Enterprise Linux" and "Bootable Kernel Status - Red Hat Enterprise Linux". An "Activate..." button is to the right. Below the banner is a green header "Filter Computers by Operating System". The main area contains three sections: 1. "Version:" with a "Select Version" dropdown, "Edition:" with an "AS" dropdown, and "Architecture:" with an "IA32" dropdown. 2. "Select Computer from List" with a text input field and a label "Select computer to display its installed RPM Package List". 3. "Validate or Remove Package from Dependency Resolution Calculation" which includes a "Filter By Name:" input, a large list box, and three buttons: "Validate", "Remove", and "Reset". To the right of these buttons is an "Excluded Packages:" list box. Below the list box is a legend: "Symbols: R-Removed, U-Unsupported, M-Multiple versions." At the bottom, there is a "Save MPL To:" input field, a "Finish" button, and a "Save MPL To" button.

3. Click to **Activate** the Analysis. Enter your password when prompted. The Action will propagate to your BES Client computers.
4. Select an Operating System from the **Version** pull-down menu. The Clients, in response, will send back their list of installed RPM packages, which may take a few minutes. When all the lists have been received, the screen is redisplayed with a list of relevant computers.

**Minimum Package List Creation**

**Filter Computers by Operating System**

Version: **RHEL5** Edition: **Server** Architecture: **X86\_64**

**Select Computer from List**

Select computer to display its installed RPM Package List

Computer ID	Computer Name	IP Address	Package Count
5780396	localhost.localdomain	192.168.105.236	1256
5964750	localhost.localdomain	192.168.106.133	1249
13256196	localhost.localdomain	192.168.104.246	836

**Validate or Remove Package from Dependency Resolution Calculation**

Filter By Name:

BESAgent-7.2.4.75-1.x86\_64  
Deployment\_Guide-en-US-5.2-9.noarch  
GConf2-2.14.0-9.el5.i386  
GConf2-2.14.0-9.el5.x86\_64  
GConf2-devel-2.14.0-9.el5.i386  
GConf2-devel-2.14.0-9.el5.x86\_64  
ImageMagick-6.2.8.0-4.el5\_1.1.i386  
ImageMagick-6.2.8.0-4.el5\_1.1.x86\_64  
MAKEDEV-3.23-1.2.x86\_64  
NetworkManager-0.6.4-8.el5.x86\_64

Validate  
Remove  
Reset

Excluded Packages:

Symbols: R-Removed, U-Unsupported, M-Multiple versions.

Save MPL To:  Finish

5. In the first section, select the applicable **Operating System Options**.

**Filter Computers by Operating System**

Version: **RHEL5** Edition: **Server** Architecture: **IA32**

Select Version  
RHEL5  
RHEL4  
RHEL3

6. In the second section, select one of the listed computers to use as the basis for your MPL.

**Select Computer from List**

Select computer to display its installed RPM Package List

Computer ID	Computer Name	IP Address	Package Count
5780396	localhost.localdomain	192.168.105.236	1256
5964750	localhost.localdomain	192.168.106.133	1249
13256196	localhost.localdomain	192.168.104.246	836

7. In the Validate or Remove Package from Dependency Resolution Calculation section, click the Validate button.

8. If the **Multiple Versions of Same Package** dialog opens, select one version of each package that you want to include in your MPL.

9. Click **Confirm**.

10. Unsupported Packages and other excluded packages will be listed in the **Excluded Packages** section. You can delete additional packages from the original list by first selecting the package on the left and clicking **Remove**.

**Validate or Remove Package from Dependency Resolution Calculation**

**Filter By Name:**

Deployment\_Guide-en-US-5.2-9.noarch  
GConf2-2.14.0-9.el5.i386  
GConf2-2.14.0-9.el5.x86\_64  
GConf2-devel-2.14.0-9.el5.i386  
GConf2-devel-2.14.0-9.el5.x86\_64  
ImageMagick-6.2.8.0-4.el5\_1.1.i386  
ImageMagick-6.2.8.0-4.el5\_1.1.x86\_64  
MAKEDEV-3.23-1.2.x86\_64  
NetworkManager-0.6.4-8.el5.x86\_64  
NetworkManager-glib-0.6.4-8.el5.x86\_64

**Validate**  
**Remove**  
**Reset**

**Excluded Packages:**

M: kernel-2.6.18-92.el5.x86\_64  
M: kernel-headers-2.6.18-92.1.6.el5.x86\_64  
M: kernel-headers-2.6.18-92.el5.x86\_64  
M: kernel-xen-2.6.18-92.1.6.el5.x86\_64  
M: kernel-xen-2.6.18-92.el5.x86\_64  
U: BESAgent-7.2.4.75-1.x86\_64  
U: nmap-5.00-1.i386

**Symbols:** R-Removed, U-Unsupported, M-Multiple versions.

**Save MPL To**  **Finish**

11. Click on the **Save MPL To** button and browse to the folder where you wish to store your MPL file.
12. Click **Finish** to save your MPL. The MPL file will be named according to the following format: **OSConfiguration\_ComputerID\_HostName\_Date.base**.

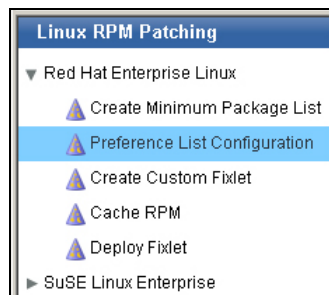
## Using Preference Lists

Preference Lists allow you to order your packages from highest to lowest priority. You can also create white lists to ensure a specific package is installed, and black lists to eliminate packages you don't want.

### Creating a Preference List

This section lets you initialize white lists and black lists to either prefer or prevent specific RPM from being installed on your systems. To create a new preference list:

1. From the left navigation panel, select **Preference List Configuration**.



2. The **Preference List** panel appears on the right.

The screenshot shows the 'Preference List' configuration panel. It has a green header bar with the title 'Preference List'. Below the header, there are several sections:

- Select an OS configuration:** A dropdown menu showing 'RHEL5\_X86\_64\_SERVER'.
- Choose a preference list:** Two radio buttons: 'Create New Preference List' (selected) and 'Modify Existing Preference List'.
- Create New Preference List:**
  - Preference List Name:** A text box containing 'RHEL5X64Server\_White'.
  - Preference List Type:** Two radio buttons: 'White List' (selected) and 'Black List'.
- Modify Existing Preference List:** A table with columns: Configuration, Global, Name, Package Count, Type, and a Remove button.
 

Configuration	Global	Name	Package Count	Type		Remove
RHEL5_X86_64_	Yes	L1	1	White List		
RHEL5_X86_64_	Yes	L3	2	White List		
- Add or Remove Package:**
  - Filter By Name:** A text box containing 'fi'.
  - A list of packages: 'firefox-1.5.0.10-2.el5.i386.rpm' and 'file-4.17-9.el5.x86\_64.rpm'.
  - A 'Remove' button next to the package list.
  - An 'Add' button at the bottom.
- Choose Save Options:**
  - ☐ Save current selected preference list as a different list: [text box]
  - ☒ Make this list globally visible to all operators.

At the bottom right, there are 'Save' and 'Reset' buttons.

3. If it's not already selected, choose the desired **OS Configuration** from the pull-down menu. The packages corresponding to this list will appear below.
4. Make sure the Create New Preference List button is checked and in the text box labeled **Preference List Name**, enter a name for your new list.
5. You can choose to create a **White List** or a **Black List** by clicking the appropriate button.
6. **Remove** packages from this list using the relevant button. You may also wish to filter the list to make it more manageable. Just type in the first few characters of a package name to limit the items displayed.
7. Packages in the list are ordered, and those that appear first will have higher priority than those that appear later. You can drag and drop the items in the list to re-order their priority.
8. You may also add packages by entering names in the text box to the left of the **Add** button. Auto-completion will help you enter the name.
9. Click **Save** when you are finished editing your preference list.

## Modifying a Preference List

You can modify your Preference List at any time. Here's how:

1. As described in the previous section, select **Preference List Configuration** from the left navigation panel.
2. The **Preference List Panel** appears on the right.

Choose a preference list

☐ Create New Preference List
 

Preference List Name:

Preference List Type: ☒ White List ☐ Black List

☒ Modify Existing Preference List
 

Configuration	Global	Name	Package Count	Type	
RHEL5_X86_64_	Yes	L1	1	White List	▲
RHEL5_X86_64_	Yes	L3	2	White List	▼

Remove

Add or Remove Package

Filter By Name:

acpid-1.0.4-7.el5.x86\_64.rpm

Deployment\_Guide-as-IN-5.1.0-11.noarch.rpm

Remove

mysql-5.0.22-2.1.0.1.x86\_64.rpm

Add

3. Click **Modify Existing Preference List** and select a configuration to modify. Note that you can also delete a list from this interface.

4. As before, **Add** or **Remove** packages from your list.
5. At the bottom of the page, you have a few options for saving your file.

**Choose Save Options**  
☐ Save current selected preference list as a different list:   
☐ Make this list globally visible to all operators.  

---

**Save** **Reset**

6. You can choose to make a preference list global (the default option) by checking the box marked **Make this list globally visible to all operators**. Uncheck the box if you wish to keep your list private.
7. If you want to copy the existing list and save it under a different name, check the box next to **Save current selected preference list as a different list** and then supply a new name.
8. When you are satisfied with your modified list, click **Save**.

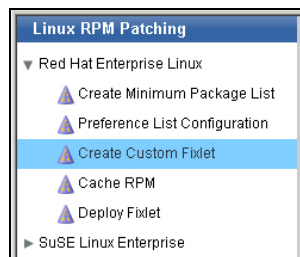
## Using Custom Fixlet Messages

To deploy your preferred packages to all of your Linux computers, you can create custom Fixlet messages. Like all Fixlet messages, these will target only those machines that need them and no others. You can then view the deployment of your packages using the BigFix Console.

### Creating Custom Fixlet Messages

This section allows you to create your own custom suite of Fixlet messages which you can use to manage the RPM packages you have defined. Here's how:

1. From the left navigation panel, select **Create Custom Fixlet**.



2. The **Create Custom Fixlet** panel appears on the right.

The 'Create Custom Fixlet' panel contains the following sections:

- Target Operating System:** Version: RHEL5, Edition: Server, Architecture: X86\_64.
- RPM Package Options:** For forced upgrade of installed packages, use packages that are: ☒ Oldest ☐ Latest. ☒ Upgrade Only. ☐ Custom Switches.
- Preference List Configuration:** ☐ Default Minimum Package List. ☒ Custom Minimum Package List File: C:\temp\unixSD\RHEL5\_x64\_Server\_5780396. . ☒ White List: Global L1, Private L2. ☐ Black List: Global <NONE>, Private <NONE>.
- Target RPM Packages:** Single Fixlet Mode ☐ Multi-Fixlet Mode ☒. Number of source Fixlets selected for customization: 3.  .
 

ID	Name	Relevant Computer Co.	Source Release Date
2007095602	RHSA-2007:0356 - Libpng Security Update - R4	1	May 17 2007
2007096802	RHSA-2007:0368 - Topdown Security and Bug	1	Nov 7 2007
2007099202	RHSA-2007:0392 - Libpng Security Update - R4	1	Oct 23 2007
2008032102	RHBA-2008:0321 - Topdown Bug Fix and Enha	1	May 21 2008
2009011402	RHBA-2009:0114 - Topdown Bug Fix Update -	2	Jan 20 2009
2009033302	RHSA-2009:0333 - Libpng Security Update - R4	3	Mar 4 2009
2009131502	RHEA-2009:1315 - New Packages: Libpngaccess	3	Sep 2 2009

Filters: By Fixlet Name, By Target RPM: libpng, By Dependency RPM, By Channel: 5. ☐ Exclude Superseded Fixlets. ☐ Show Audit Fixlets Only.

3. Most of the work of creating Fixlet messages has been done for you. This interface allows you to customize, target and filter the content to your specifications. When you are satisfied with your modifications, click **Finish**. A complete description of this interface follows below.

## Understanding the Custom Fixlet Interface

There are several parts to this interface, and this section details each part.

### Target Operating System

This section lets you set the specific operating system you wish to target. Note that Fixlet messages in the Multi-Fixlet Mode will also be filtered based on these values.

Target Operating System		
Version:	<input type="text" value="RHEL5"/>	Edition: <input type="text" value="Server"/> Architecture: <input type="text" value="X86_64"/>

- **Version:** Enter the version of the OS you wish to target.
- **Edition:** Based on the version you chose, select a specific edition.
- **Architecture:** Select the desired computer architecture to complete the OS specification.

### RPM Package Options

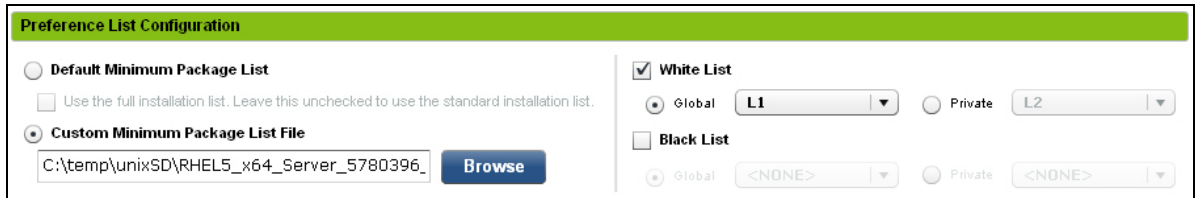
This section allows you to choose among several different techniques for updating installed packages.

RPM Package Options	
For forced upgrade of installed packages, use packages that are <input checked="" type="radio"/> Oldest <input type="radio"/> Latest	
<input checked="" type="checkbox"/> Upgrade Only	(Leave this unchecked to create an installation Fixlet).
<input type="checkbox"/> Custom Switches	(Leave this unchecked to use default "rpm -U") : <input type="text" value=""/> (i.e.: -Uvh --repackage)

- **Forced Upgrade Option:** Oldest indicates that the *minimum* version which satisfies the dependency but still results in an upgrade of the existing package will be selected. Latest indicates that the *most recent* version of the package which satisfies the dependency will be selected.
- **Upgrade Only:** Check this box to restrict the Fixlet message to only those computers which already have an existing version of the package installed. Uncheck this box to create an installation Fixlet message that will install the package from scratch.
- **Custom Switches:** specify switches for use in the RPM command. For example, for kernel packages, some users prefer "RPM -ivh".

## Preference List Configuration

This section helps you deal with dependencies using the supplier's recommendations or your own specifications, along with white and black lists.



The image shows a 'Preference List Configuration' dialog box. It has a green title bar. On the left, there are two radio buttons: 'Default Minimum Package List' (unselected) and 'Custom Minimum Package List File' (selected). Below the first radio button is a checkbox 'Use the full installation list. Leave this unchecked to use the standard installation list.' Below the second radio button is a text field containing 'C:\temp\unixSD\RHEL5\_x64\_Server\_5780396\_' and a 'Browse' button. On the right, there are two sections. The 'White List' section is checked and contains a 'Global' radio button (selected) with a dropdown menu showing 'L1', and a 'Private' radio button (unselected) with a dropdown menu showing 'L2'. The 'Black List' section is unchecked and contains a 'Global' radio button (selected) with a dropdown menu showing '<NONE>', and a 'Private' radio button (unselected) with a dropdown menu showing '<NONE>'.

- **Default Minimum Package List:** If all Linux systems in your environment are relatively uniform and they are similar to a standard installation or full installation, you are encouraged to use the default minimum package lists provided by BigFix.
- **Custom Minimum Package List File:** As an alternative, you can create your own custom minimum package list. For more information on how to do this, see the section on **Creating a Minimum Package List**. BigFix recommends that you supply your own MPL when customizing pre-packaged Fixlets to produce optimal dependency resolution.
- **White List/Black List:** Check the box to choose any previously defined black list or white list. See the section titled **Preference List Configuration** for more details.

## Target RPM Packages

This section allows you to target your RPM Packages to the desired set of computers.

Target RPM Packages

☐ Single Fixlet Mode
 ☒ Multi-Fixlet Mode

Number of source Fixlets selected for customization: 3
 Change Columns
Hide Filters

ID	Name	Relevant Computer Co	Source Release Date
2007035602	<a href="#">RHSA-2007:0356 - Libpng Security Update - Re</a>	1	May 17 2007
2007036802	<a href="#">RHSA-2007:0368 - Tcpcdump Security and Bug</a>	1	Nov 7 2007
2007099202	<a href="#">RHSA-2007:0992 - Libpng Security Update - Re</a>	1	Oct 23 2007
2008032102	<a href="#">RHBA-2008:0321 - Tcpcdump Bug Fix and Enha</a>	1	May 21 2008
2009011402	<a href="#">RHBA-2009:0114 - Tcpcdump Bug Fix Update -</a>	2	Jan 20 2009
2009033302	<a href="#">RHSA-2009:0333 - Libpng Security Update - Re</a>	3	Mar 4 2009
2009131502	<a href="#">RHEA-2009:1315 - New Package: Libpciacess</a>	3	Sep 2 2009

Filters

By Fixlet Name

By Target RPM

By Dependency RPM

By Channel

☐ Exclude Superseded Fixlets
 ☐ Show Audit Fixlets Only

- Single Fixlet Mode:** Click this button to manually add RPM packages to the list or look them up by name. To look up a name, simply type the first few letters into the text box and then select the desired package from the drop-down list. Then click the **Add to list** button. Only RPM packages published by Red Hat and SuSE are supported.
- Multi-Fixlet Mode:** Click this button to choose one or more Fixlet messages to customize. Use the filters to locate specific Fixlet messages. The time it takes to generate custom Fixlet messages is proportional to the number of source Fixlet messages you select.
- Filters:** The Filter section lets you winnow down the list of Fixlet messages by **Name**, **Target RPM**, **Dependency RPM** or **Channel**. You can also choose to **Exclude Superseded Fixlets** or **Show Audit Fixlets Only** by checking the appropriate boxes.

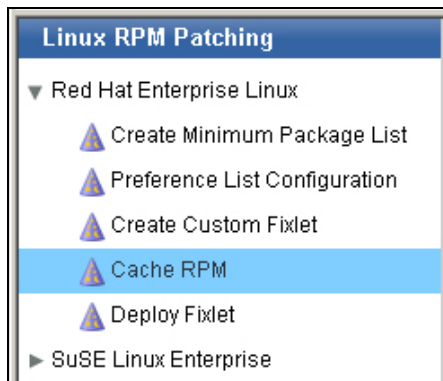
**Note:** Each pre-packaged Fixlet in **Patches for RHEL 3, 4 or 5** contains solutions for an Erratum or Bulletin for all editions of an OS version of a particular architecture, such as RHEL4\_IA32 AS, ES or WS. For example, if the dependency resolver cannot find a dependency resolution for RHEL4\_IA32\_AS, then BigFix will not produce a remediation Fixlet for that Erratum or Bulletin. Instead, BigFix will generate an audit Fixlet. In this case, you are strongly encouraged to customize these audit Fixlet messages based on one OS configuration instead of all three. There will be a greater chance the resolver will find a dependency resolution for that Errata and Bulletin after you supply your own MPL.

When you are satisfied with your collection of customized options, click the **Finish** button at the bottom of the window. When you do, the Fixlet messages you specified will be customized and presented for your final approval before you import them.

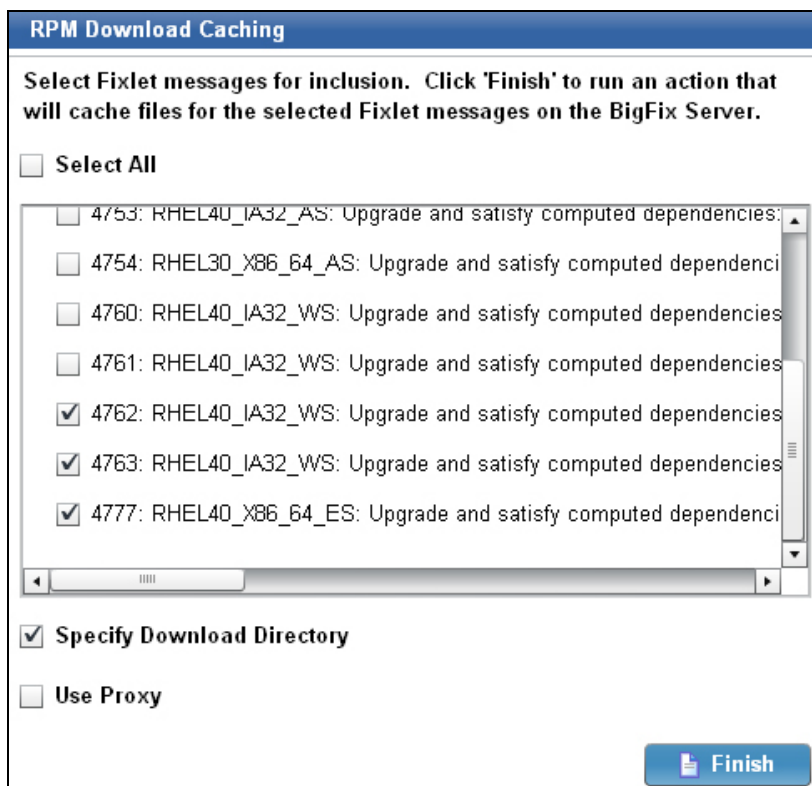
## Caching RPMs

Once you have created, selected or modified a set of Fixlet messages in the previous step, caching gives you a chance to make the process more efficient. By caching the necessary files before you issue the Fixlet messages, you can better control the bandwidth usage. Here's how to set it up:

1. From the left navigation panel, select **Cache RPM**.



2. The **RPM Download Caching** panel opens up.



3. Check the appropriate boxes to indicate which of your custom Fixlet messages could benefit from download caching. **Click Select All** to cache RPM files for all available Fixlet messages.

4. Check the **Specify Download Directory** option if you want to download files to a location other than the BES Server file cache (you will be asked later to provide a folder name).
5. Check the **Use Proxy** option if your network requires a proxy server for Internet access (you will be asked later for the required proxy parameters).
6. Click **Finish**. A warning pops up reminding you to target your cache to a BigFix Server.
7. Enter your RHN or Novell account username and password.

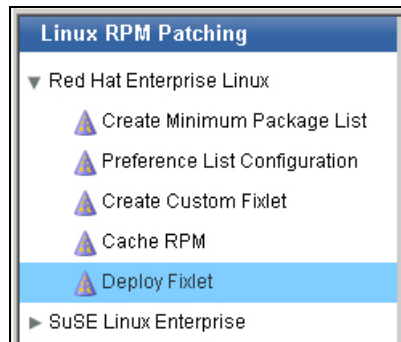
**Note:** If you have customized a large number of Fixlet messages and you cache all RPM packages on them – including both target and dependency – they can consume a substantial amount of space on your BES Server.

For instructions on how to manually run the download Cacher tool for Red Hat and SUSE respectively, please refer to ***BigFix Patch Management for Red Hat Enterprise Linux***. You may also wish to consult the Resource section at the end of this document for more detailed information.

## Deploying Fixlet Messages

This final section presents you with several ways to filter the created Fixlet Messages.

1. From the left navigation panel, select **Deploy Fixlet**.



2. The Deploy Previously Created Fixlets panel opens up.

The screenshot shows the 'Deploy Previously Created Fixlets' panel. It has a 'Fixlet Filters' section with the following options:

- By Target RPM:
- By Dependency RPM:
- By Configuration: **ALL** (dropdown)
- By Creation Time: From:  To:  (with time pickers set to 00:00 and 23:59)

Below the filters is a section titled 'Created Fixlet Messages' containing a 'Fixlet List' table. A 'Change Columns' button is located at the top right of the table.

ID	Name	Rel	Target RPMs
4752	<a href="#">RHEL50_X86_64_SERVER: Upgrade an</a>	5	libxml2-python-2.6.26-2.1.2.8.x86_64
4753	<a href="#">RHEL40_IA32_AS: Upgrade and satisfy</a>	0	kdelibs-3.3.1-3.11.i386.rpm kdelibs-de

3. Use the Filters to help you deploy the desired Fixlet messages. When you are ready to deploy a Fixlet, click on it from the Fixlet list. This will bring up the Fixlet for you to finalize the deployment.

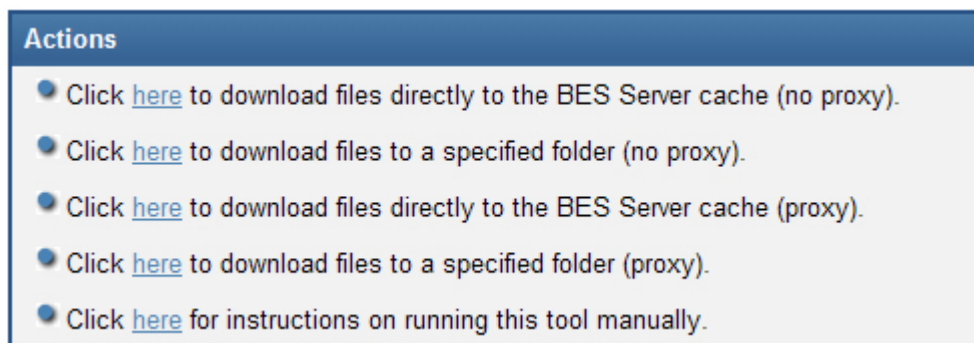
Your options include:

- **Target RPM.** Enter the Target RPM name in the space provided. You can interactively see the list get filtered as you enter the RPM name.
- **Dependency RPM.** Enter the Dependency RPM name in the space provided. Again, you can see the filtering of the list as you type.
- **By Configuration.** Select the configuration from the drop-down menu.
- **By Creation Time.** Select a bounding date and time to filter the Fixlet messages.

## Using the Download Cacher

For convenience, you may wish to download and cache all the pre-packaged Fixlet messages in the **Patches for RHEL 3|4|5** sites to your BigFix server. The default location is: C:\Program Files\BigFix Enterprise\BES Server\wwwroot\bes\bformirror\downloads\sha1. Here's how:

1. In the BigFix Console, click the **Tasks** tab.
2. From the tree view on the left, select **Linux RPM Patching**.
3. From the list of Tasks, click **Run Download Cacher Tool**.
4. Before clicking any Action links, read the description carefully. Even though an attempt is made to exclude superseded content and minimize file size, they may consume a large amount of disk space. There are several options available to you.



Select the one that best matches your situation and click the appropriate **Action** link.

**Warning:** Each OS configuration may require up to 15-30 GB of disk space. There are over 9,000 pre-packaged Fixlet messages to deal with the entire set of Red Hat configurations. To cache the entire set will require about 100 GB. Please make sure you have the room to hold these caches *before* you download!

# Resources

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## Knowledge Base Articles

For more information on troubleshooting and the latest upgrades to the program, please consult the online Knowledge Base articles at the BigFix Support Site.

***Multiple Version of same package:***

<http://support.bigfix.com/cgi-bin/kbdirect.pl?id=828>

***RHEL UnixSD Download Cacher Usages:***

<http://support.bigfix.com/cgi-bin/kbdirect.pl?id=992>

***Troubleshooting Errors:***

<http://support.bigfix.com/cgi-bin/kbdirect.pl?id=664>

***Enhanced Kernel Package support:***

<http://support.bigfix.com/cgi-bin/kbdirect.pl?id=665>

***Not-Supported Errata (RHEL only):***

<http://support.bigfix.com/cgi-bin/kbdirect.pl?id=666>

***SuSE RPM packages that are only available from the SuSE OS installation media:***

<http://support.bigfix.com/cgi-bin/kbdirect.pl?id=1009>

## Global Support

BigFix offers a suite of support options to help optimize your user-experience and success with this product. Here's how it works:

- First, check the BigFix website [Documentation](#) page:
- Next, search the BigFix [Knowledge Base](#) for applicable articles on your topic:
- Then check the [User Forum](#) for discussion threads and community-based support:

If you still can't find the answer you need, [contact](#) BigFix's support team for technical assistance:

- Phone/US: 866 752-6208 (United States)
- Phone/International: 661 367-2202 (International)
- Email: [enterprisesupport@bigfix.com](mailto:enterprisesupport@bigfix.com)