BigFix
Patch for Ubuntu - User's Guide

Special notice

Before using this information and the product it supports, read the information in Notices *(on page xxv)*.

Edition notice

This edition applies to BigFix version 10 and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

Chapter 1. Overview

BigFix Patch for Ubuntu provides Fixlets that you use to manage the security updates and service packs that Ubuntu releases. These Fixlets are available through the Patches for Ubuntu sites.

BigFix Patch for Ubuntu keeps your Ubuntu clients current with the latest updates and service packs. Patch management is available through the Patches for Ubuntu sites. For each new security update that becomes available, BigFix releases a Fixlet that identifies and updates all the computers in your enterprise that need it.

With a few keystrokes, the BigFix Console operator can apply the patch to all the relevant computers and visualize its progress as it deploys throughout the network. The BigFix agent checks the operating system version, processors, and the existing installed packages to determine when and if a patch is necessary.

Using Fixlets, you can 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.

New features

Patch Management for Ubuntu now supports Ubuntu 20.04 LTS.

Supported Versions and Platforms

Patch for Ubuntu sites support Ubuntu versions 14.04, 16.04 and 18.04 LTS (Long Term Support), which are releases typically used for large-scale deployments.

The Patch for Ubuntu Fixlet sites provide support for the following versions and platforms:

Table 1. Versions and platforms supported by the Patch for Ubuntu Fixlet sites

Version	Platform (Supports servers and desktops)	Fixlet Site Name
Ubuntu 10.04 LTS*	x86 and AMD64	Patches for Ubuntu 1004
Ubuntu 12.04 LTS*	x86 and AMD64	Patches for Ubuntu 1204
Ubuntu 14.04 LTS*	x86 and AMD64	Patches for Ubuntu 1404
Ubuntu 16.04 LTS*	x86 and AMD64	Patches for Ubuntu 1604
Ubuntu 18.04 LTS	AMD64	Patches for Ubuntu 1804
Ubuntu 20.04 LTS	AMD64	Patches for Ubuntu 2004
Ubuntu 22.04 LTS	AMD64	Patches for Ubuntu 2204

In Ubuntu, 'LTS' stands for Long Term Support, which are releases typically used for large-scale deployments.

Note: *Ubuntu 10.04 LTS, 12.04 LTS, 14.04 LTS, and 16.04 LTS have reached their end of life and no longer supports updates, including security and maintenance updates. BigFix in turn, no longer provides content and support for products that have reached their end of support date.

In some instances, Ubuntu releases packages without associated announcements. Such packages have "Unspecified" indicated in the Fixlet title. The packages are released to the 'security' repositories within the main, universe, restricted, and multiverse channels.

Note: The Ubuntu patch severity categories of 'Low', 'Medium', and 'High' are indicated in the CVE. BigFix Fixlets refer to information from the package announcements that Ubuntu releases. Fixlets indicate "Unspecified" as the severity type if the Ubuntu announcement does not provide the content severity.

Site subscription

Sites are collections of Fixlet messages that are created internally by you, by HCL, 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 HCL or by using the Licensing Dashboard. For more information about subscribing to Fixlet sites, see the *BigFix Installation Guide*.

For more information about sites, see the *BigFIx Console Operator's Guide*.

Before you can deploy Ubuntu Fixlets, the BigFix server must be subscribed to the Patching Support site. After gathering the site, select the below task based on your deployment and run the task.

Task ID: 65 Setup Download Whitelist for Ubuntu (Windows Server)

This task is applicable to Windows servers.

Task ID: 66 Setup Download Whitelist for Ubuntu (Linux Server)

This task is applicable to Linux servers.

You must run the task, otherwise, you might encounter the following error: "The requested URL does not pass this deployment's download whitelist."

Ubuntu uses dynamic download while fetching the packages. As a security measure, the server blocks every dynamic download request except the ones with URLs that match the patterns in the white list file. Aside from the endpoints, ensure that the BigFix relay server is subscribed.

Chapter 2. Using Patch for Ubuntu

Access Ubuntu Fixlets sites for Ubuntu security updates from the BigFix console.

You can manage the security updates that Ubuntu issues with the use of the Patch Management for Ubuntu Fixlets. These Fixlets are available in the Patches for Ubuntu Fixlets sites, which are accessed from the Endpoint Manager console. The term *superseded*, when applied to Fixlets, has different meanings when used by BigFix, and by the Launchpad website, which hosts various software, including Ubuntu.

Patch Using Fixlets

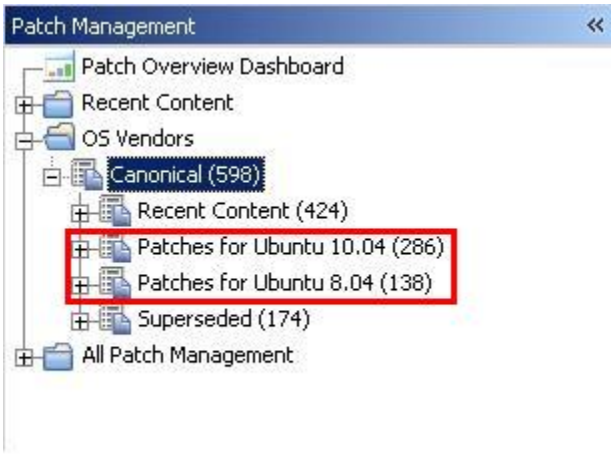
From the console, select the action for the appropriate Fixlets that you want to deploy. The action propagates across your deployment and applies patches based on the settings that you make in the Fixlet work area and the Take Action dialog.

You can deploy the Ubuntu Fixlets from the BigFix Console.

In the *Patch Management* domain, click *OS Vendors* from the navigation tree and click *Canonical*.

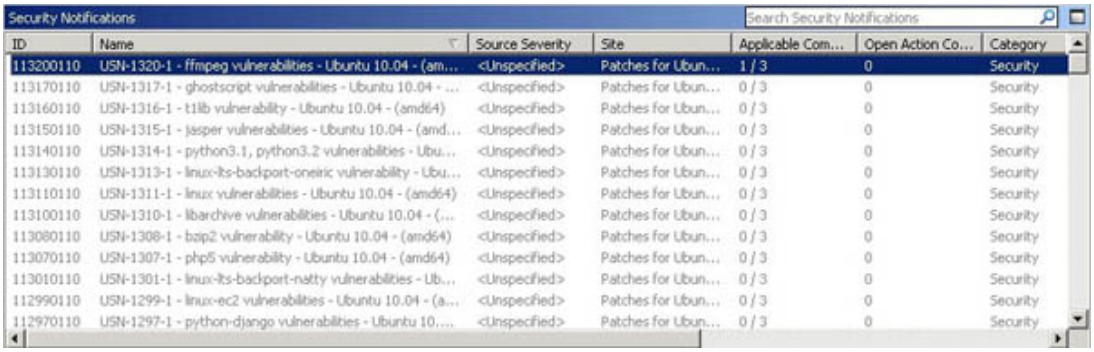
The navigation tree expands. Select the correct version of *Patches for Ubuntu*.

Figure 1. Selecting the correct version of Patches for Ubuntu



From the list panel on the right, double-click the Fixlet that you want to deploy.

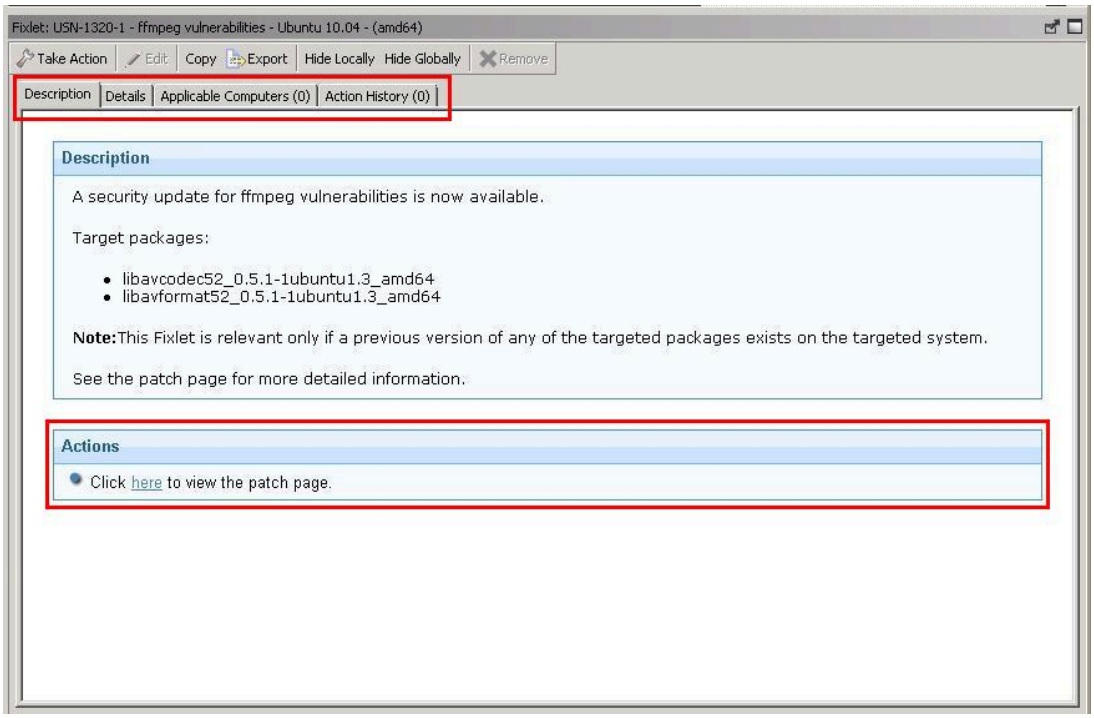
Figure 2. Selecting the Fixlet from the list panel



The Fixlet opens in the work area. Click the tabs at the top of the window to review details about the selected Fixlet.

Click the link in the Actions box to start the deployment. The Ubuntu website opens to display the package information and links to download files.

Figure 3. Fixlet details and the link in the Actions box that starts deployment



Action Logging

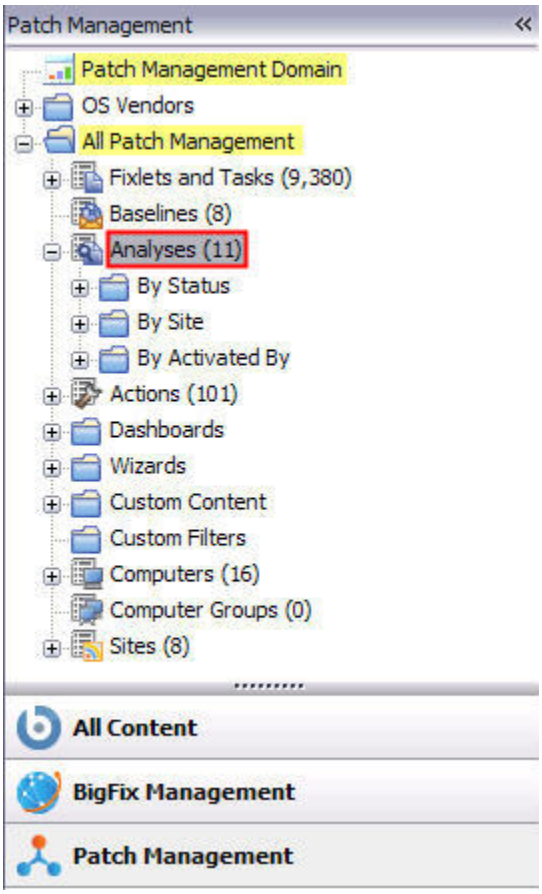
Attention: The steps in this topic are not applicable as Linux RPM Patching site is deprecated. For more details, please refer to https://forum.bigfix.com/t/ibm-bigfix-patch-to-deprecate-and-end-support-for-linux-rpm-patching-site-on-september-29-2017/22405.

Use the Endpoint Dependency Resolution - Deployment Results analysis to confirm if an action is successful by checking the log file on the endpoint. You can also check if dependencies are resolved by deploying a test run before applying patches.

If an action is successful, the results are written in a log file on the endpoint. You can view the results of the action when you activate the **Endpoint Dependency Resolution - Deployment Results** analysis.

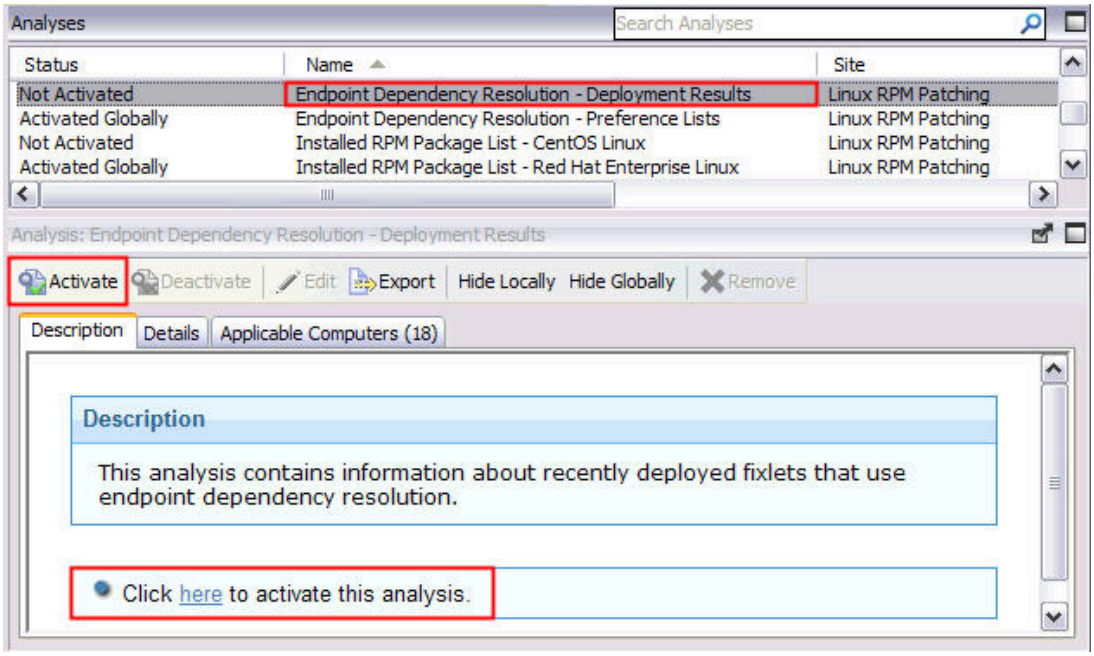
To activate the analysis, click the **Patch Management Domain**. From the navigation tree, click **All Patch Management > Analyses**.

Figure 4. Selecting Analyses from the navigation tree



Click **Endpoint Dependency Resolution - Deployment Results** from the Analyses List panel on the right. Click **Activate** or, from the Actions box, click the link that activates the analysis.

Figure 5. Activating the Endpoint Dependency Resolution - Deployment Results analysis



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

When you review the properties of an endpoint, you can view the current deployment information on that system. To view this data, go to the **All Content** domain and select the Computers node. Select the computer that you want to inspect in the work area; then scroll down to the Deployment Results section.

When running an Ubuntu patch Fixlet, you can also deploy a test run prior to applying the patch. You can view the Deployment Results analysis to determine if the dependencies are resolved and if an installation is successful.

You can limit the length of the output by running the task called Endpoint Dependency Resolution – Set deployment results analysis report length. To access this task, click **All Patch Management > Analyses** from the navigation tree, and then click the Ubuntu subnodes. The default analysis report length is 100 entries.

Note: This action reports back as fixed, even if the test fails.

Patches for Ubuntu Fixlet Sites

Ubuntu security updates are available through email lists, RSS feeds, and through the Ubuntu website and Launchpad, the web support site that hosts applications such as Ubuntu.

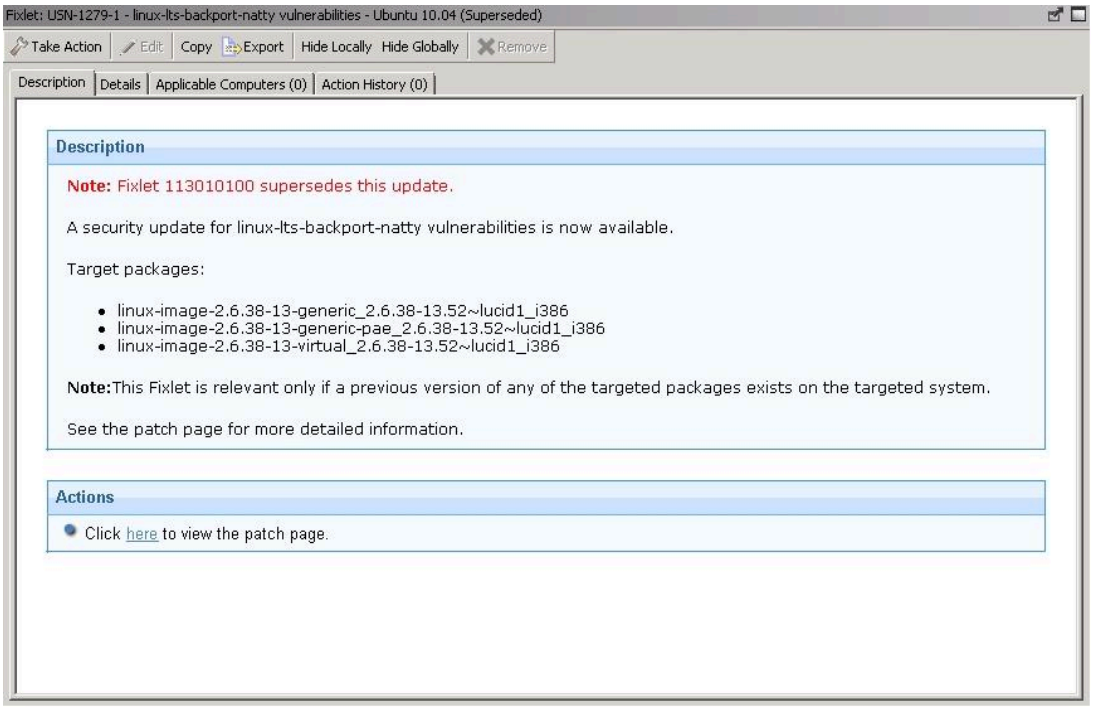
The Patches for Ubuntu Fixlet sites provide the corresponding Fixlet content for Ubuntu security updates. Ubuntu distributes security notices through mail lists and RSS feeds. Installation packages and details of the security notices are also released through the Ubuntu and Launchpad websites. The Ubuntu website maintains an archive of the security notices. The Launchpad website is the hosting website for various software, including Ubuntu.

Superseded Fixlets

In BigFix, supersedence is a property of Fixlets that provides multiple packages. In Launchpad, the host website for applications such as Ubuntu, supersedence is a property of every package.

Superseded Fixlets are Fixlets that contain outdated packages. If a Fixlet is superseded, a newer Fixlet exists with newer versions of the packages. You can find the new Fixlet ID in the description of the superseded Fixlet.

Figure 6. Description of a superseded Fixlet showing the newer Fixlet ID



Supersedence as defined by BigFix and Launchpad

BigFix for Patch Management and Launchpad use the term *supersedence* differently. A package with superseded status on the Launchpad website does not mean the same as when a fixlet is described as superseded in BigFix.

In Launchpad terminology, *supersedence* is a property of every package. For BigFix for Patch, *supersedence* is a property of Fixlets that provides multiple packages. When a Fixlet is superseded, it means that there is an existing, newer, and more advanced Fixlet with the same set of packages.

Frequently Asked Questions - Supersedence

Learn the answers to frequently asked questions about Supersedence in Ubuntu patching with BigFix.

What is Supersedence?

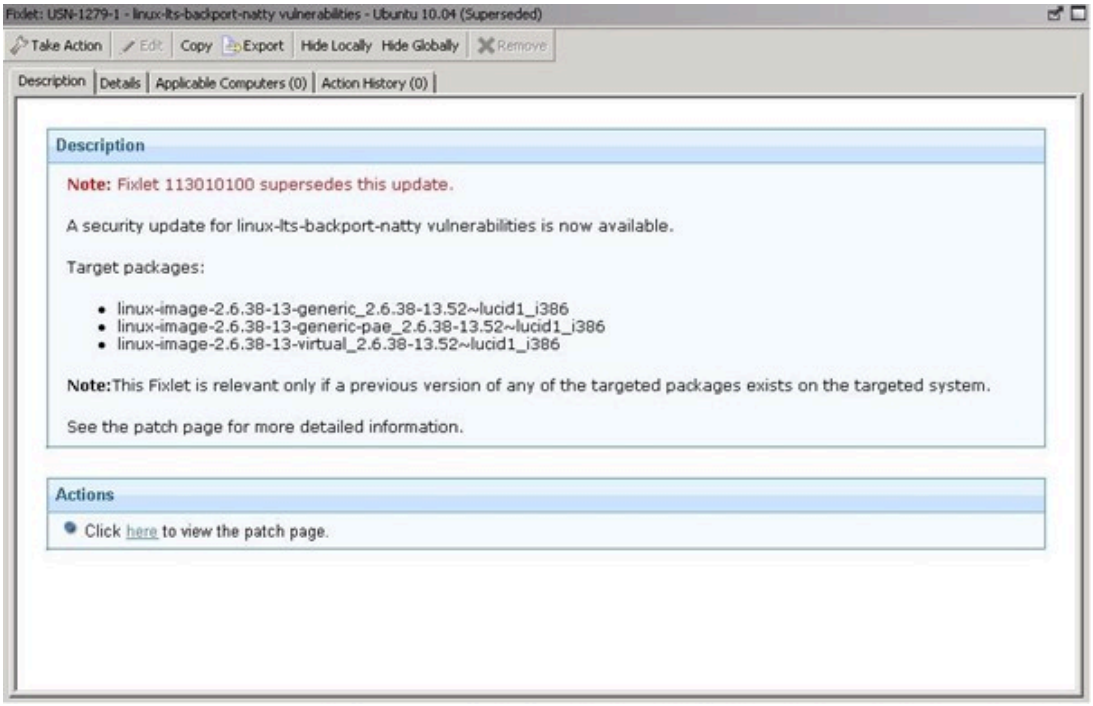
Supersedence is all about replacing an outdated Fixlet with the latest Fixlet.

How does Supersedence work in Bigfix Patching?

Supersedence helps you update BigFix application Fixlets to their latest version by using newly released Fixlets. The superseded Fixlet replaces the outdated Fixlet containing the following details for backtracking.

Note: The `x-Fixlet-Superseded` field in the Fixlet states the newer version number.

Figure 7. Supersedence Information



The **superseded by** version (newer version) is displayed in the Description tab as shown in the sample Ubuntu Fixlet screenshot.

What is a superseder?

Superseder is the **latest** Fixlet that replaces or updates the outdated version.

What is a supersedee?

Supersedee is an **outdated** Fixlet that is replaced by the latest Fixlet.

Can I use the superseded Fixlet to deploy an application even if a latest version is available for the same application?

Yes. You can update the application to the latest version. You can also still use the superseded Fixlet to deploy the application. The Fixlet description mentions that there is an update available for the application.

What are the exceptions when the superseded Fixlets cannot be used?

Applications like Google Chrome allows you to download only the latest version available.

- **Downloadable version**: In such applications, the superseded Fixlets would deploy only the **latest** available version.
- **Reason**: The download link remains constant in all the Fixlets regardless of being a regular Fixlet or a superseded Fixlet.

Does the architecture of the package play a role in supersedence?

Yes. For example, the amd64 architecture Fixlet can be superseded only by another amd64 architecture Fixlet and not by any other architecture Fixlet.

How does supersedence work in Ubuntu?

Superseding Fixlets in Ubuntu work based on the package name and version number.

What are Kernel Fixlet and how does supersedence work in Ubuntu Kernel Fixlets?

Kernel Fixlets are the fixlets that have the package names preceeded by *Linux-image*, for example - `linux-image-<version>-<flavour>`.

Supersedence in Kernel Fixlets:

- In a Kernel Fixlet with version X.Y.Z-W, X.Y is called as the **minor version**. It is a prerequisite that the minor versions **match** for the supersedence to work. That is, the minor version of superseder should match the supersedee packages since HWE (Hardware Enablement) scenario is required for Ubuntu kernel Fixlets.

  For example, linux-image-4.4.x can only supersede another linux-image-4.4.x, linux-image-4.8.x can only supersede another linux-image-4.8.x, and so on.

- Supersedence occurs only if it is part of the **same type**, that is linux-image-<version>-generic can only supersede another linux-image-<version>-generic. This applies to those that have the extra flavour type in its name.

  For example, linux-image-extra-4.4.0-101-generic will be superseded by linux-image-extra-4.4.0-103-generic, but cannot be superseded by linux-image-4.4.0-103-generic.

What happens if the superseder and supersedee package versions of an USN Fixlet and a unspecified Fixlet are similar in Ubuntu?

All the Fixlets without any USN ID are grouped as *Unspecified* Fixlets in Ubuntu.

- If the superseder and supersedee package versions of an USN Fixlet and Unspecified Fixlet are similar, then the USN Fixlet has the **priority**. That is the USNFfixlet supersedes the Unspecified Fixlet.
- The Unspecified Fixlet never supersedes the USN Fixlet when the package version is similar in both the Fixlets.

Can an unspecified Fixlet supersede a USN Fixlet in Ubuntu?

Yes. Unspecified Fixlet can supersede a USN Fixlet in Ubuntu only when the unspecified Fixlet's package version is higher than the USN Fixlet's package version.

Will the same Fixlet be superseded two or more times?

No, when a Fixlet is superseded by the latest version, the Fixlet is marked as superseded:True in the `seenfile` of the corresponding OS code to avoid superseding the Fixlet again.

Are there any relevance changes for the superseded Fixlets?

Yes, additional relevance checks are equired for superseded Fixlet as shown below.

```
<Relevance>(value of setting "_BESClient_Ubuntu_EnableSupersededEval" of client as integer = 1) | false</Relevance>
```

Uninstall patches

Attention: The steps in this topic are not applicable as Linux RPM Patching site is deprecated. For more details, please refer to https://forum.bigfix.com/t/ibm-bigfix-patch-to-deprecate-and-end-support-for-linux-rpm-patching-site-on-september-29-2017/22405.

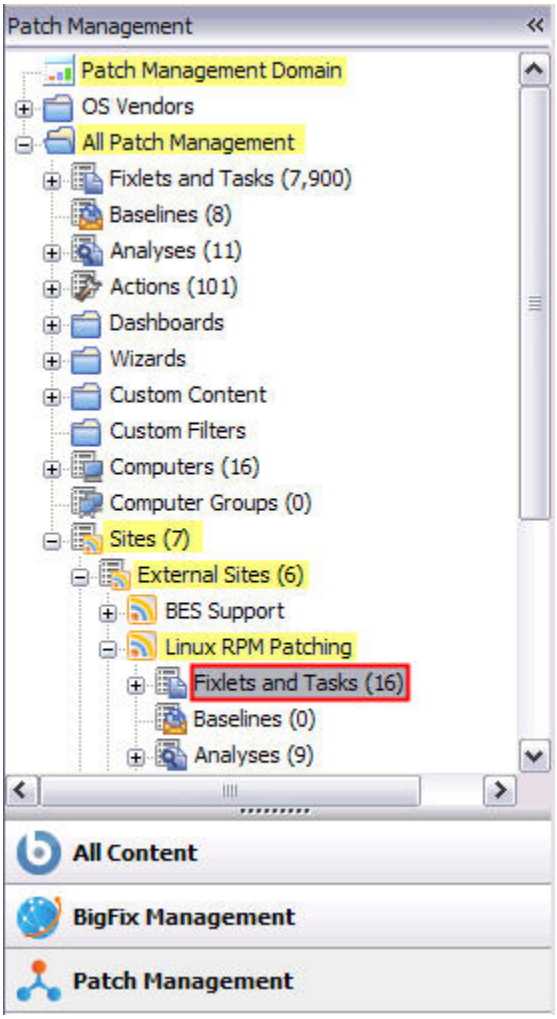
Set the Uninstall Ubuntu .deb task to uninstall Ubuntu Debian packages that do not have dependencies on other packages. The Uninstall action removes the Ubuntu .deb package, but does not remove the configuration files for the package that is uninstalled. You can remove also the configuration files through the purge action link in the Actions box.

You can uninstall Ubuntu Debian packages using the Uninstall Ubuntu.deb packages task.

Note: The Uninstall Ubuntu.deb packages task uninstalls a package only if the package you want to remove does not have a dependency on other packages.

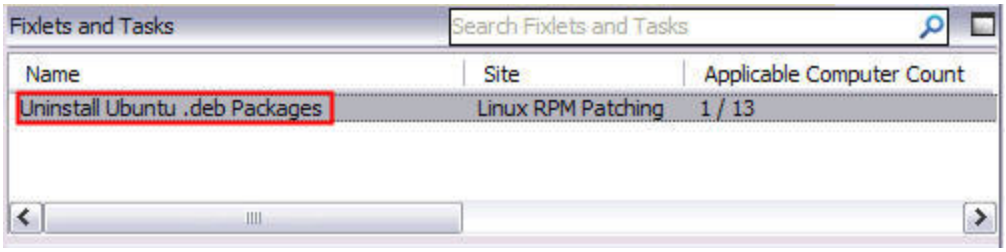
To uninstall patches, click the **Patch Management Domain**. In the navigation tree, click **All Patch Management > Sites > External Sites > Linux RPM Patching > Fixlets and Tasks**.

Figure 8. Selecting Fixlets and tasks from the navigation tree



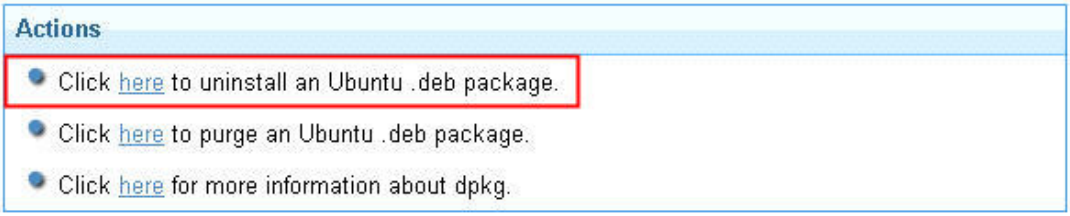
In the List panel on the right, select **Uninstall Ubuntu .deb Packages**.

Figure 9. Selecting the Ubuntu .deb package to be uninstalled



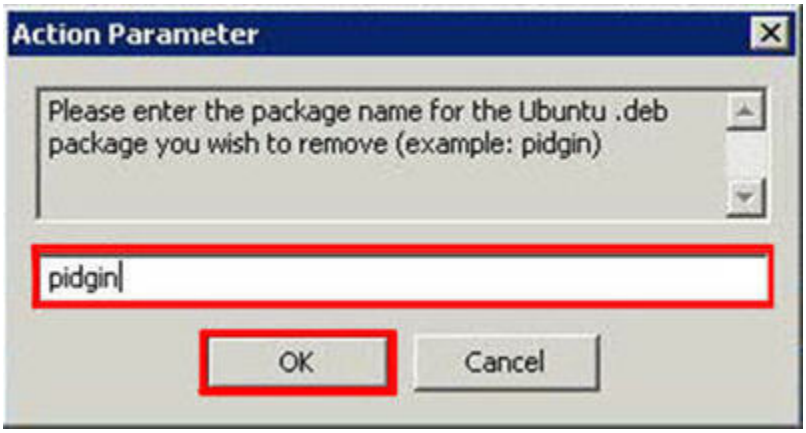
In the Actions box, click the link to start the uninstallation action.

Figure 10. Selecting the link that uninstalls the Ubuntu .deb package



The **Action Parameter** window opens. Enter the package name and click **OK**. The affected computers report the uninstall patch task that was run as either completed or failed. You can also activate the Endpoint Dependency Resolution - Deployment Results analysis, which shows the results of an action in a log file. For more information about using the Endpoint Dependency Resolution - Deployment results analysis, see Action Logging *(on page 8)*.

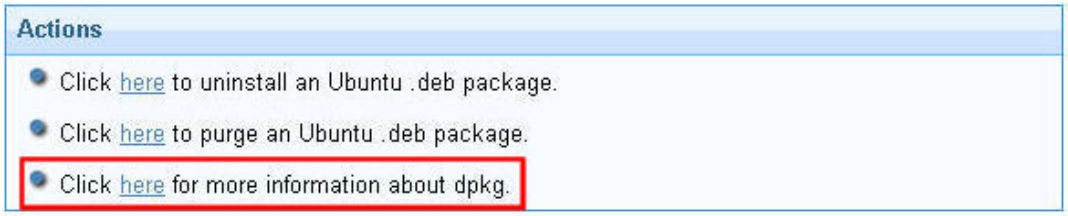
Figure 11. Entering the package name and clicking OK



The Uninstall action removes the Ubuntu .deb package, but does not remove the configuration files for the package that is uninstalled. Click the purge action link to remove also the configuration files.

The last action in the Actions box opens a link that gives information about using **dpkg**, the Ubuntu Debian package manager.

Figure 12. Selecting the link that gives information about the dpkg package manager



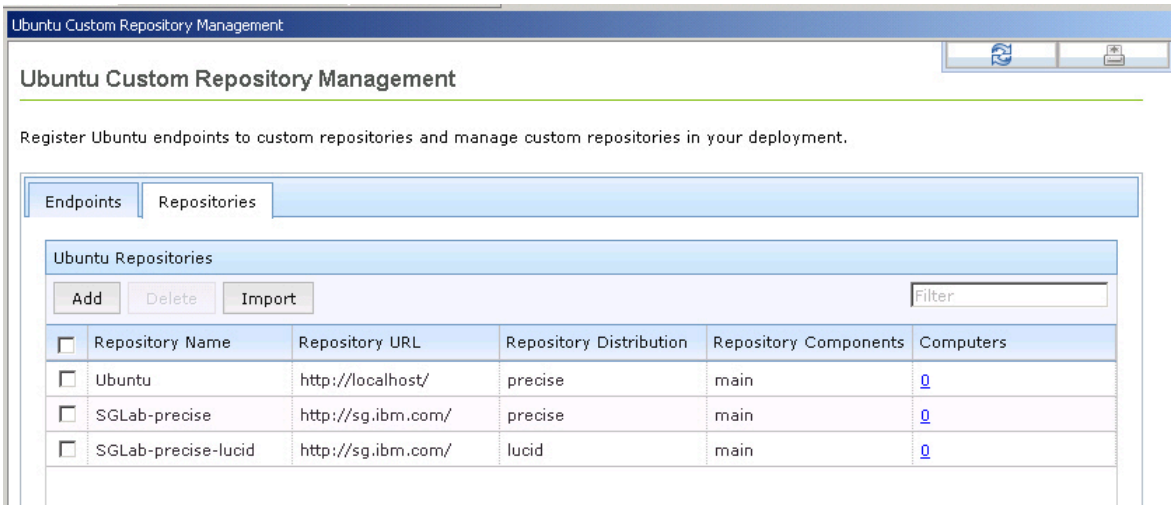
Adding repositories

You can add repositories with the Ubuntu Custom Repository Management dashboard.

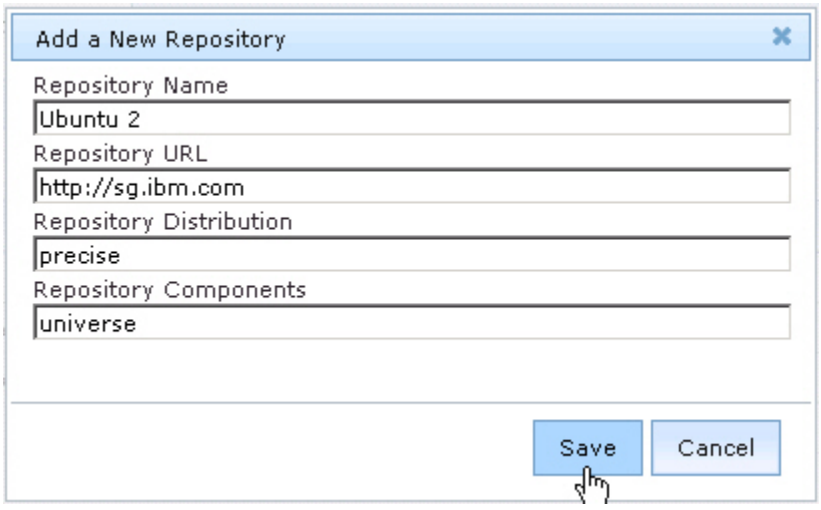
You must deploy the following task and activate the analysis which can be found in the Patching Support site.

- Analysis: Repository Configuration - Ubuntu
- Task: Enable custom repository support - Ubuntu

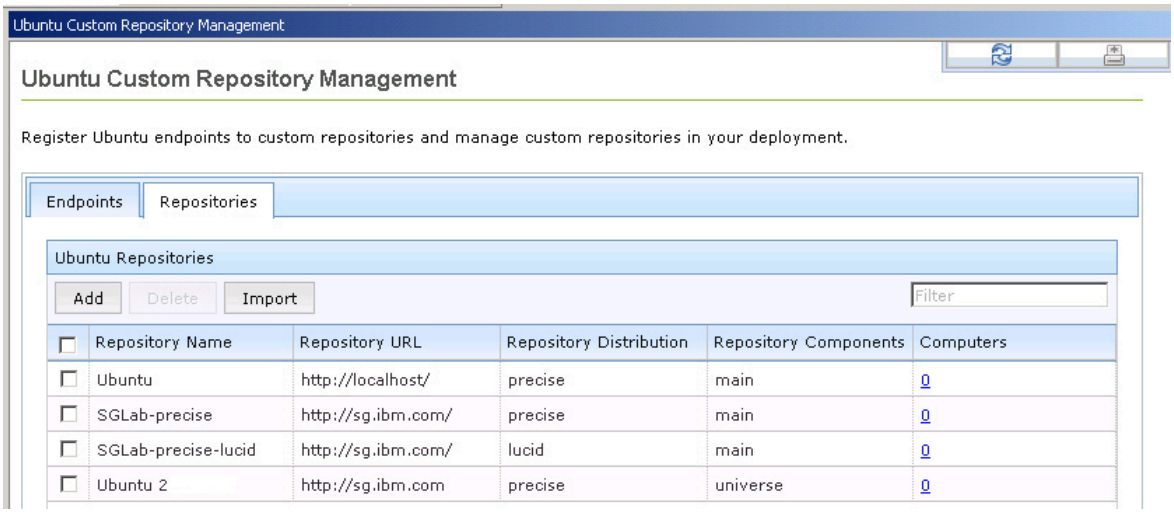
1. From the All Content domain, go to **Sites > External Sites > Patching Support > Dashboards > Ubuntu Custom Repository Management**.
2. From the **Repositories** tab, click **Add**.



3. From the **Add a New Repository** window, enter the details in the following fields.
   - Repository Name
   - Repository URL
   - Repository Distribution
   - Repository Components



4. Click **Save**.



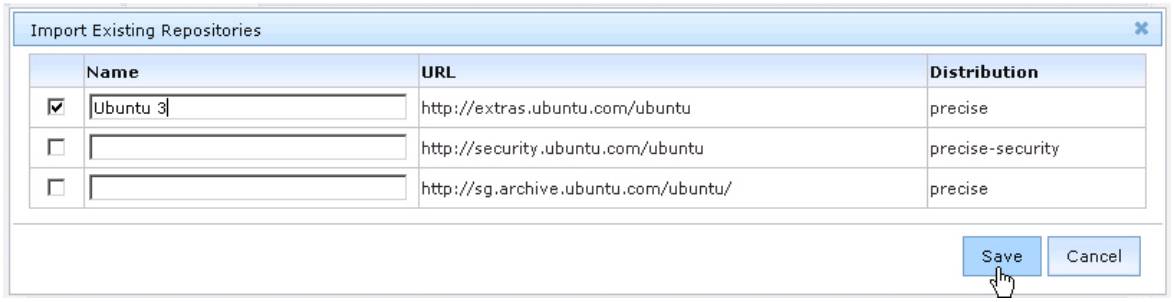
The repository is now added.

Importing repositories

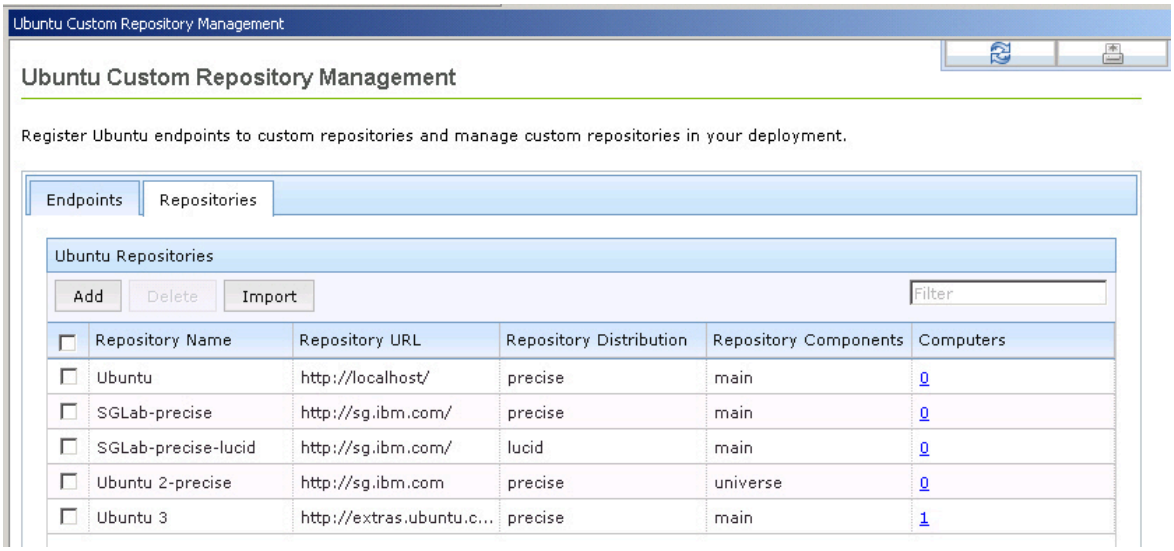
You can import repositories with the Ubuntu Custom Repository Management dashboard.

You must activate Analysis: Repository Configuration - Ubuntu, which can be found in the Patching Support site.

1. From the All Content domain, go to **Sites > External Sites > Patching Support > Dashboards > Ubuntu Custom Repository Management**.
2. From the **Repositories** tab, click **Import**.
3. From the **Import a New Repository** window, enter the repository name.



4. Click **Save**.



The repository is now imported into the dashboard.

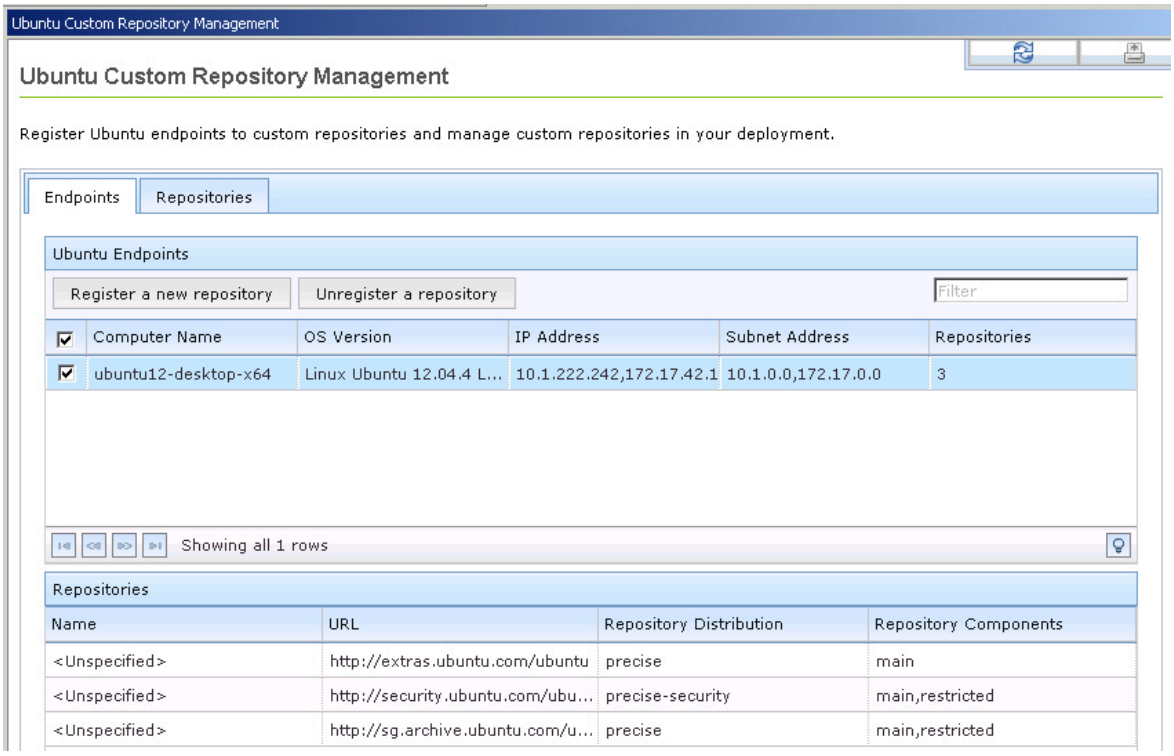
Registering endpoints to repositories

Register and connect your repositories to endpoints with the Ubuntu Custom Repository Management dashboard.

You must deploy the following task and activate the analysis which can be found in the Patching Support site.

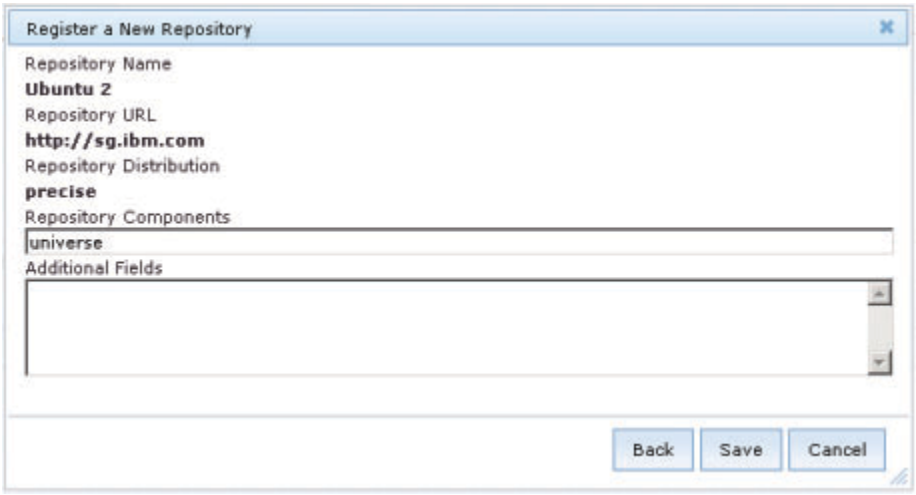
- Analysis: Repository Configuration - Ubuntu
- Task: Enable custom repository support - Ubuntu

1. From the All Content domain, go to **Sites > External Sites > Patching Support > Dashboards > Ubuntu Custom Repository Management**.
2. From the **Endpoints** tab, select the endpoint on which you want to register a repository.



3. Click **Register a new repository**. The repositories of the selected endpoints are listed in the lower part of the window. When a repository is named as unspecified, it means that it is not listed in the Repository list.
4. From the **Register a New Repository** window, select the repository then click **Next**.

5. The next window shows the name, URL, and distribution of the repository that you are registering. Enter the repository components. Use spaces to separate multiple components. You can also place additional fields.

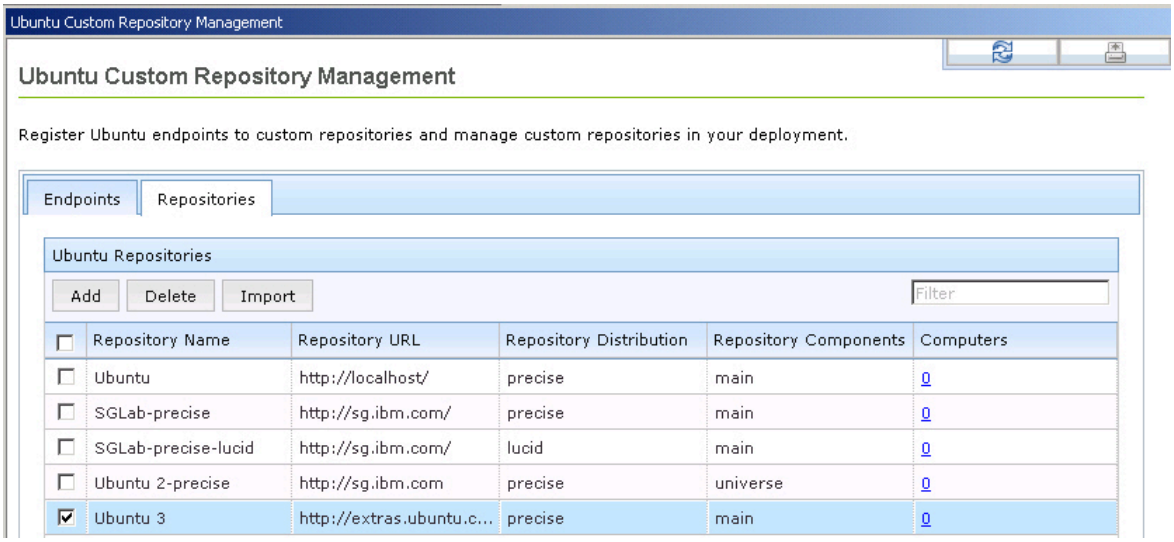


6. Click **Save**.
7. From the Take Action window, select the computer and click **OK** to run the action.

Deleting repositories

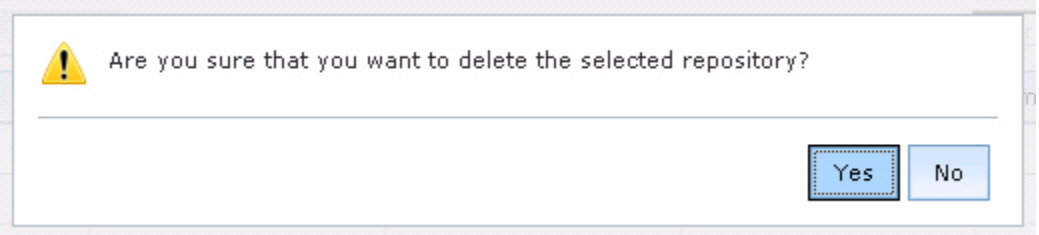
You can delete repositories with the Ubuntu Custom Repository Management dashboard.

1. From the All Content domain, go to **Sites > External Sites > Patching Support > Dashboards > Ubuntu Custom Repository Management**.



2. From the **Repositories** tab, select the repository that you want to delete and click **Delete**.

3. Click **Yes** to delete the repository.



The repository is now deleted.

Frequently asked questions

The questions and answers in this section can help you to better understand Patch for Ubuntu.

Which support fixlet can I use for installing the newest versions of all the packages installed on an endpoint?

You can use the *"Run `dist-upgrade` to install and intelligently handle dependencies of new packages"* support fixlet for installing the latest versions of all the packages installed on a system/endpoint. The *"apt-get dist-upgrade"* command installs the newest versions of all packages that are currently installed on the system from the sources that are defined for `apt`. The command also attempts to intelligently handle changing dependencies.

Using which support fixlet can I install all available security updates from a vendor repository?

You can use the *"Install all available updates from the vendor security repository (amd64)"* support fixlet to install all the security updates from your vendor repository. This fixlet gets a list of all the available updates from the vendor security package repository and installs them on the system/endpoint.

What to do when Fixlets fail to install with the following message in the EDR log? "Warning: Nothing to install. Please check if you are using the latest kernel."

This message appears only in case of Fixlets that deploy kernel packages. A kernel Fixlet becomes relevant if the endpoint does not have the target kernel package installed or if the endpoint's active kernel is at a lower version than the target kernel package. An endpoint is still considered subject to kernel vulnerabilities even if it has the latest kernel installed but not using it actively.

To remediate the issue, restart the endpoint and ensure it is using the latest kernel available.

What are Unspecified Fixlets and why do we need them?

Unspecified Fixlets are for the packages found in Ubuntu's security repositories and that do not have a security notice (USN) associated with them. Not all security packages released by Ubuntu have a USN associated with them - Unspecified Fixlets covers such packages.

Which type of Kernel Packages are supported for USN fixlets?

Bigfix Patch supports the following USN Kernel type packages:

- linux-image-<version>-generic
- linux-image-<version>-lowlatency

- linux-image-<version>-oracle
- linux-image-<version>-kvm
- linux-image-<version>-oem
- linux-image-<version>-gcp
- linux-image-<version>-azure

Note: BigFix Patch does not currently support the following USN Kernel packages: *aws,flo, gke, goldfish, hammerhead, hwe, lpae, mako, nexus4, powerpc, powerpc64, raspi2, snapdragon, virtual*. Also note that these packages are subjected to change.

Appendix A. Support

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

- BigFix Support Portal
- BigFix Developer
- BigFix Playlist on YouTube
- BigFix Tech Advisors channel on YouTube
- BigFix Forum

Notices

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