JBoss Enterprise Application Platform 6.1

Installation Guide

For Use with Red Hat JBoss Enterprise Application Platform 6

Edition 2

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Abstract

This book is a guide to the installation of Red Hat JBoss Enterprise Application Platform 6 and its patch releases.

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PREFACE

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CHAPTER 1. INTRODUCTION

1.1. ABOUT RED HAT JBOSS ENTERPRISE APPLICATION PLATFORM 6 (JBOSS EAP 6)

Red Hat JBoss Enterprise Application Platform 6 (JBoss EAP 6) is a fast, secure, powerful middleware platform built upon open standards, and compliant with the Java Enterprise Edition 6 specification. It integrates JBoss Application Server 7 with high-availability clustering, powerful messaging, distributed caching, and other technologies to create a stable and scalable platform.

The new modular structure allows for services to be enabled only when required, significantly increasing start up speed. The Management Console and Management Command Line Interface remove the need to edit XML configuration files by hand, adding the ability to script and automate tasks. In addition, it includes APIs and development frameworks that can be used to develop secure, powerful, and scalable Java EE applications quickly.

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1.2. ABOUT THE RED HAT CUSTOMER PORTAL

The *Red Hat Customer Portal* is the centralized platform for Red Hat knowledge and subscription resources. Use the *Red Hat Customer Portal* to:

- Manage and maintain Red Hat entitlements and support contracts;

- Download officially-supported software;

- Access product documentation and the Red Hat Knowledgebase;

- Contact Global Support Services; and

- File bugs against Red Hat products.

The Customer Portal is available here: https://access.redhat.com.

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1.3. ABOUT THE USE OF EAP_HOME IN THIS DOCUMENT

In this document, the variable *EAP_HOME* is used to denote the path to the JBoss EAP 6 installation. Replace this variable with the actual path to your JBoss EAP 6 installation.

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CHAPTER 2. REQUIREMENTS

2.1. JBOSS EAP 6 INSTALLATION PREREQUISITES

Each installation process for JBoss EAP 6 has a number of prerequisites. This section covers the common requirements, as well as those that are installation specific.

Common Prerequisites

- Set up an account on the Red Hat Customer Portal at https://access.redhat.com. For more information, refer here: Section 1.2, "About the Red Hat Customer Portal" .

- Review the supported configurations and ensure your system is supportable: https://access.redhat.com/site/articles/111663.

- Ensure that your system is up to date with Red Hat issued updates and errata.

ZIP/Installer Prerequisites

- Administration privileges for the installation directory.

- Ensure that the chosen JDK has been extracted (or installed). Refer to the JDK's documentation for information on how to do this.

- On Microsoft Windows Server, ensure that the JAVA_HOME and PATH environment variables have been set, otherwise shortcuts will not work.

- On Hewlett-Packard HP-UX, ensure that an `unzip` utility has been installed.

RPM Prerequisites

- Register the server on the Red Hat Network.

- Subscribe to the `Red Hat Enterprise Linux Server` base software channel appropriate to your Red Hat Enterprise Linux version.

- Subscribe to the `JBoss Application Platform for Server` sub-channel, in the `JBoss Enterprise Platform` group.

- A Java 6 JDK is required. This can be obtained by subscribing to the `supplementary` software channel for your Red Hat Enterprise Linux installation. For example; the channel for Red Hat Enterprise Linux version 6 installed on i386 architecture is `rhel-i386-server-supplementary-6`.
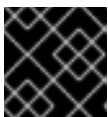
> **IMPORTANT**
>
> A Java 6 JDK is required, even if you wish to use a Java 7 JDK.

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CHAPTER 3. INSTALLATION

3.1. JBOSS EAP 6 INSTALLATION METHODS

There are several different ways to install JBoss EAP 6. Each method is best used in certain situations. This topic provides a brief overview for each type of installation, and links to the sections that cover the relevant installation processes.

Table 3.1. Installation Methods

Method	Description	Instructions
Zip Installation	The Zip archive is suitable for installation on all supported operating systems. This process should be used if you wish to extract the instance manually.	• Section 3.2.2, "Install JBoss EAP 6 (Zip Installation)"
JAR Installer	The JAR installer can be run in a console, or as a graphical wizard. Both options provide step-by-step instructions for installing and configuring the server instance. Additional setup, including the Quickstarts and Maven Repository, is also possible with the installer.	• Section 3.3.2, "Install JBoss EAP 6 (Graphical Installer)" • Section 3.4.2, "Install JBoss EAP 6 (Text-based Installer)"
RPM Installation	JBoss EAP 6 can be installed with the supported RPM package graphical installer, or with a command-line interface. This method is suitable for supported installations of Red Hat Enterprise Linux 5 and 6.	• Section 3.5.1, "Install JBoss EAP 6 (Graphical RPM Installation)" • Section 3.6.1, "Install JBoss EAP 6 (Text-based RPM Installation)"

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3.2. ZIP INSTALLATION

3.2.1. Download JBoss EAP 6 (Zip Installation)

Summary

The JBoss EAP 6 Zip file is available from https://access.redhat.com. The Zip file installation is platform-independent and is the preferred way to install JBoss EAP 6 on all supported platforms. This topic covers the steps to download the archive.

Prerequisites

• Section 2.1, "JBoss EAP 6 Installation Prerequisites" .

Procedure 3.1. Download the Zip file

1. Log into https://access.redhat.com.

2. Select **Downloads** → **JBoss Enterprise Middleware** → **Downloads** menu item.

3. Select **Application Platform** from the **Product** drop-down menu.

4. Select the correct JBoss EAP version from the **Version** drop-down menu.

5. Click **Download** next to the **Application Platform 6.1.0** option.

Result

JBoss EAP 6 has been downloaded successfully to the target machine, and is ready for installation.

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3.2.2. Install JBoss EAP 6 (Zip Installation)

Summary

This topic covers the steps to install JBoss EAP 6 using the downloaded Zip file.

Prerequisites

- Section 3.2.1, "Download JBoss EAP 6 (Zip Installation)" .

Procedure 3.2. Zip File Installation

1. **Move the Zip archive to the desired location.**
   Move the Zip file to the server and directory where you will install JBoss EAP 6. The user who will start and stop the server must have read and write access to this directory.

2. **Use an appropriate application to extract the Zip archive to the desired location.**
   In a Red Hat Enterprise Linux environment, use the **unzip** utility to extract the contents of the Zip archive.

   In a Microsoft Windows environment, right-click the file and select **Extract All**.

   In a Hewlett-Packard HP-UX environment, use the **unzip** utility to extract the contents of the Zip archive.

Result

JBoss EAP 6 has been installed successfully. The directory created by extracting the Zip archive is the top-level directory for the server. This is referred to as *EAP_HOME*.

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3.2.3. Uninstall JBoss EAP 6 (Zip Installation)

Summary

This section covers the steps required to uninstall a Zip installation of JBoss EAP 6.

Prerequisites

Backup any modified configuration files and deployments that may be reused in a later instance.

Procedure 3.3. Uninstall JBoss EAP 6 (Zip installation)

1. Go to the directory where you had extracted the JBoss EAP 6 folder from the Zip file.

2. **Delete the installation directory.**
   JBoss EAP 6 installs in a single directory when you use the Zip installation method. Delete the installation directory to uninstall JBoss EAP 6.

3. **Optional: Delete any initialization scripts you created.**
   If you created initialization scripts or other scripts which depended upon JBoss EAP 6 being installed on your computer, delete them.

Result

JBoss EAP 6 is uninstalled from the server.

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3.3. GRAPHICAL INSTALLER

3.3.1. Download JBoss EAP 6 (Installer)

Summary

The JBoss EAP 6 installer archive is available from https://access.redhat.com. The .jar archive can be used to run either the Graphical or Text-based installers. This topic covers the steps to download the archive.

Prerequisites

- Section 2.1, "JBoss EAP 6 Installation Prerequisites".

Procedure 3.4. Download the Installer

1. Log into https://access.redhat.com.

2. Select **Downloads** → **JBoss Enterprise Middleware** → **Downloads** menu item.
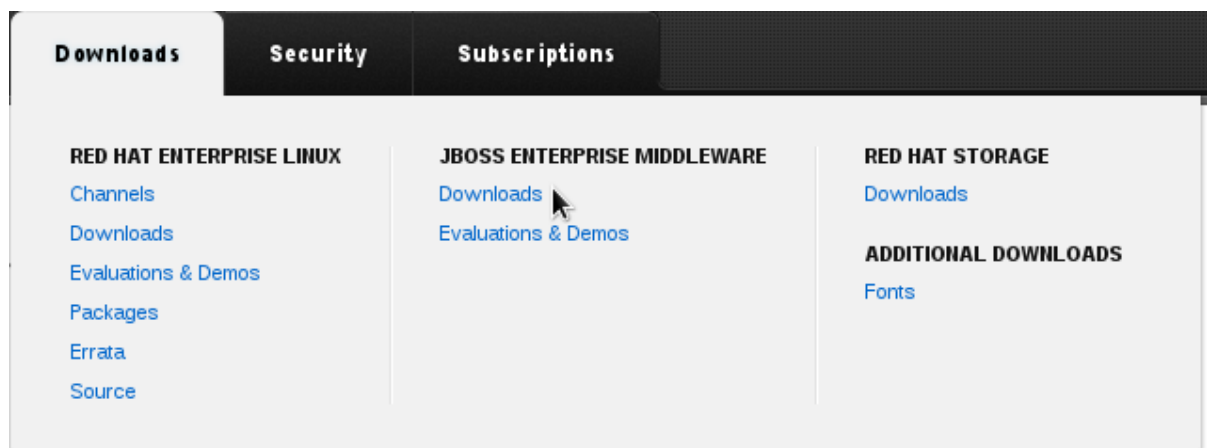
Figure 3.1.

3. Select **Application Platform** from the **Product** drop-down menu that appears on the next screen.

4. Select the **Application Platform 6.1.0 Installer**.

5. Click **Download**.

Result

JBoss EAP 6 is now downloaded to your target machine. It is ready for installation.

3.3.2. Install JBoss EAP 6 (Graphical Installer)

Summary

The Graphical Installer allows you to install JBoss EAP 6 on the target machine using step-by-step GUI instructions. This topic covers the steps needed to run the installer.

Prerequisites

- Section 3.3.1, "Download JBoss EAP 6 (Installer)".

Procedure 3.5. Install JBoss EAP 6

1. Open a terminal window in the target machine and navigate to where the GUI installer was downloaded.

2. Launch the GUI installer by executing the following command:

   ```
   java -jar jboss-eap-6.1.0-installer.jar
   ```

3. The execution of the command will start the graphical interface for the installation and the first window will ask you to select the language for the installation.
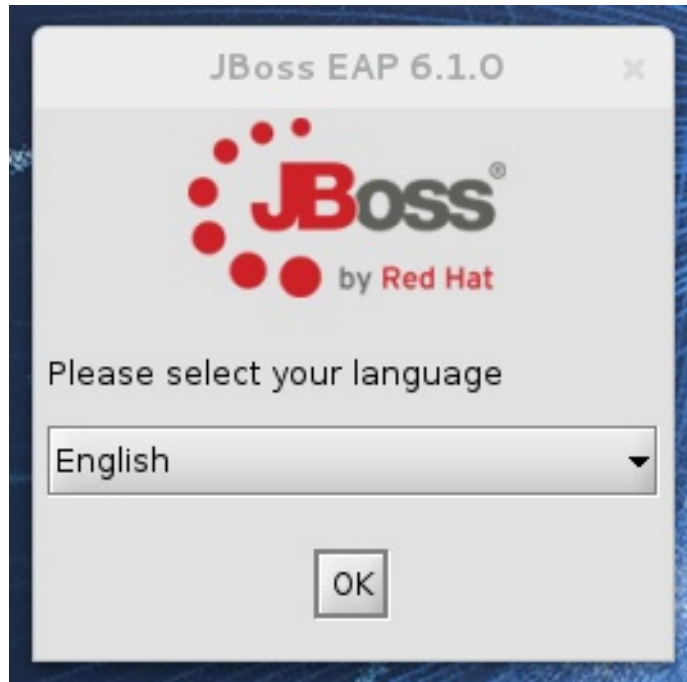
Figure 3.2. JBoss EAP 6.1.0 Install - First Step

4. Follow the rest of the steps to install JBoss EAP 6 on your target machine.

5. The final step in the installation process will allow you to create an Automatic Installation script. This script can be used to install JBoss on other target machines within your network or for future use. See figure below. Press the **Generate an automatic installation script** button if you wish to create this XML script.
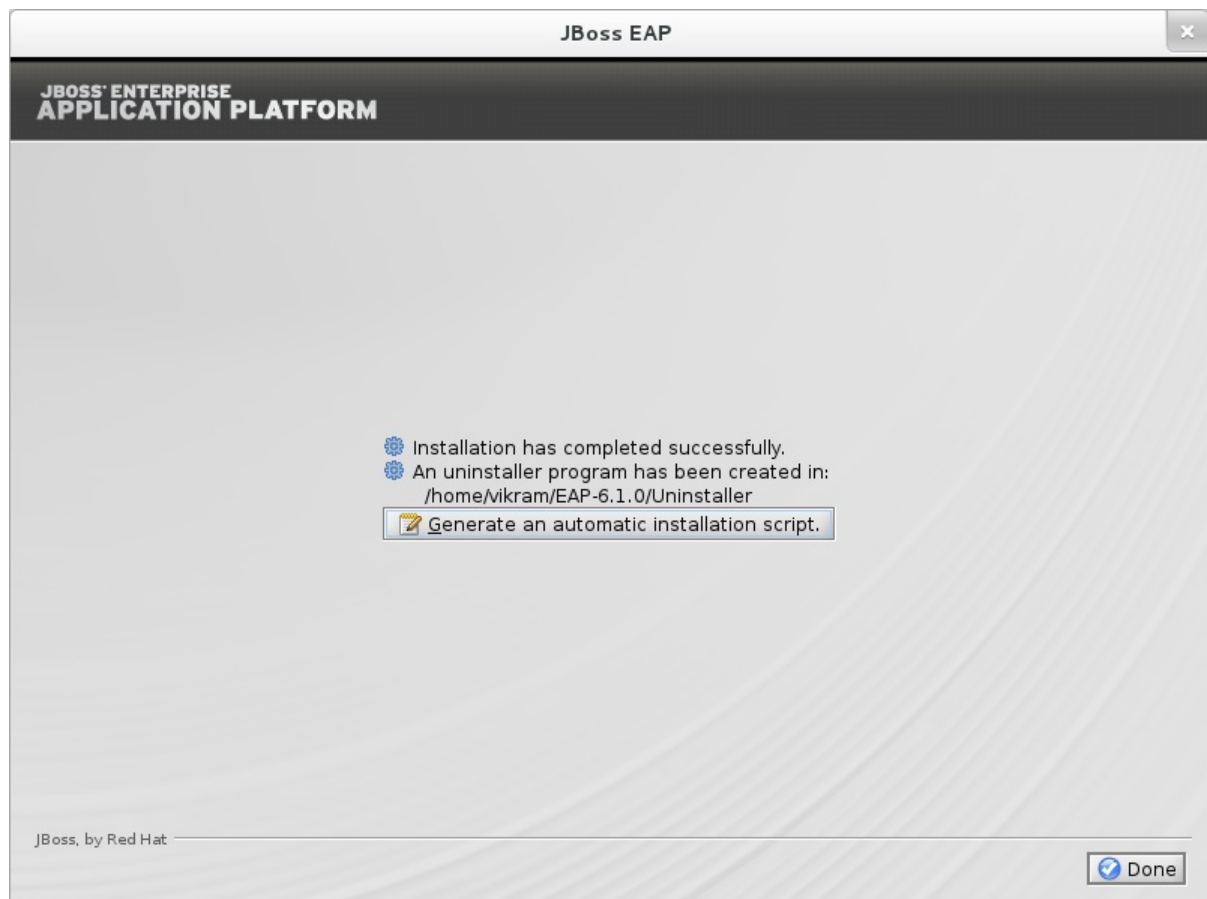
Figure 3.3. JBoss EAP Installation Final Step

6. Press the **Done** button to exit the installation.

Result

The installation is complete and JBoss EAP 6 is installed on your target machine.

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3.3.3. Uninstall JBoss EAP 6 (Graphical Installer)

Summary

This section details the steps required to uninstall an instance of JBoss EAP 6 that was installed using the graphical installer.

Prerequisites

- Backup any modified configuration files and deployments that may be reused in a later instance.

Procedure 3.6. Uninstall JBoss EAP 6 (Graphical Installation)

1. During the installation of JBoss EAP 6 on the target machine, a directory called `Uninstaller` was created in the directory where you had installed JBoss EAP 6. This directory contains a file called `uninstaller.jar`. Navigate to this directory in a terminal window.

2. Launch the GUI uninstaller by executing the following command:

   ```
   java -jar uninstaller.jar
   ```

3. The execution of the command will launch the graphical uninstaller as shown in the following figure. Select the check box if you want to delete the *EAP_HOME* directory.
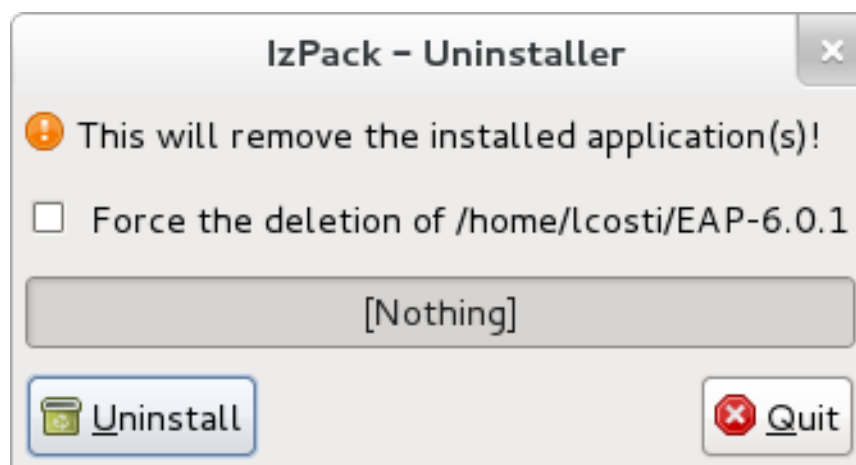
Figure 3.4. Uninstall JBoss EAP 6 using the graphical installer

4. Press the **Uninstall** button to start the uninstall process.

5. When the uninstall process is finished, press the **Quit** button to exit the uninstaller.

6. After a successful uninstall, you may want to manually remove the `Uninstaller` directory from where you launched the uninstaller.

Result:

JBoss EAP 6 is uninstalled from your server.

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3.4. TEXT-BASED INSTALLER

3.4.1. Download JBoss EAP 6 (Installer)

Summary

The JBoss EAP 6 installer archive is available from https://access.redhat.com. The .jar archive can be used to run either the Graphical or Text-based installers. This topic covers the steps to download the archive.

Prerequisites

- Section 2.1, "JBoss EAP 6 Installation Prerequisites".

Procedure 3.7. Download the Installer

1. Log into https://access.redhat.com.

2. Select **Downloads → JBoss Enterprise Middleware → Downloads** menu item.
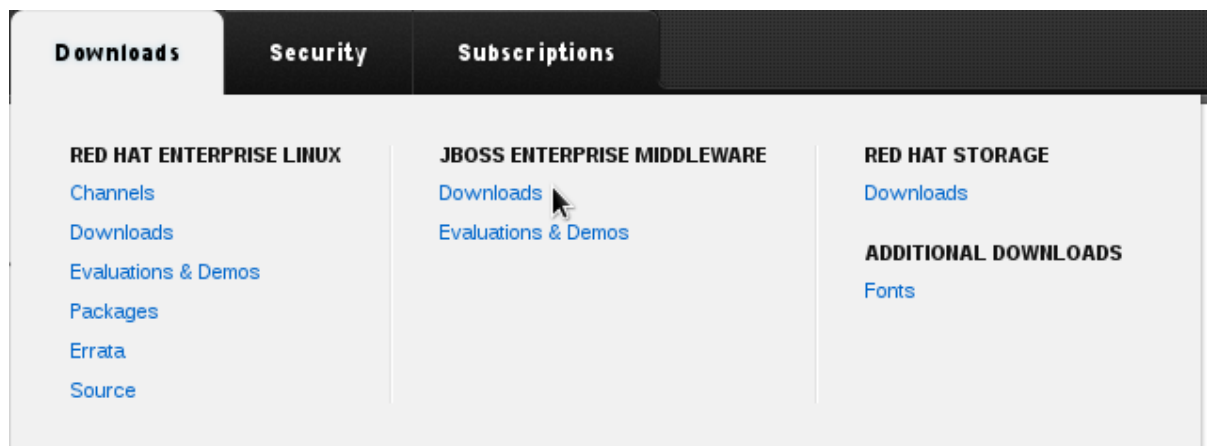
Figure 3.5.

3. Select **Application Platform** from the **Product** drop-down menu that appears on the next screen.

4. Select the **Application Platform 6.1.0 Installer**.

5. Click **Download**.

Result

JBoss EAP 6 is now downloaded to your target machine. It is ready for installation.

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3.4.2. Install JBoss EAP 6 (Text-based Installer)

Summary

The JBoss EAP 6 installer .JAR file can be used for either a Graphical or Text-based installation. This topic covers the steps to install JBoss EAP 6.1.0 using the text-based method.

Prerequisites

- Section 3.4.1, "Download JBoss EAP 6 (Installer)" .

Procedure 3.8. Text-based Installation

1. Open a terminal.

2. Launch the installer with the following command:

   ```
   java -jar jboss-eap-6.1.0-installer.jar -console
   ```

3. Follow the installation prompts.

4. An XML file can be generated to use with the automatic installation feature. This allows for identical installations across multiple instances. If you wish to create an installation script, select **yes**.

Result

JBoss EAP 6 has been successfully installed on the target machine.

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3.4.3. Uninstall JBoss EAP 6 (Text-based Installer)

Summary

This section covers the uninstall process for JBoss EAP 6, using the Text-based uninstaller.

Prerequisites

- Backup any modified configuration files and deployments that may be reused in a later instance.

Procedure 3.9. Text-based Uninstall Process

1. In a console, navigate to the `Uninstaller` directory created during the installation process. This can be found one level above the *EAP_HOME*.

2. Launch the Text-based uninstaller by executing the following command:

   ```
   java -jar uninstaller.jar -console
   ```

3. Follow the steps to uninstall JBoss EAP 6.

Result:

JBoss EAP 6 has been uninstalled from the server.

Report a bug

3.5. GRAPHICAL RPM INSTALLATION

3.5.1. Install JBoss EAP 6 (Graphical RPM Installation)

Summary

The Graphical RPM package method of installing JBoss EAP 6 is appropriate for Red Hat Enterprise Linux 6. This topic covers the steps required to complete the installation.

Prerequisites

- Section 2.1, "JBoss EAP 6 Installation Prerequisites" .

Procedure 3.10. Install JBoss EAP 6 (Graphical RPM Installation)

Use PackageKit to graphically install JBoss EAP 6 on your target machine.

1. **Launch PackageKit**
   PackageKit is an open source package management software installed as part of RHEL6. On the target machine launch PackageKit by selecting **System** → **Administration** → **Add/Remove Software**.

2. Type

   ```
   jboss-eap6
   ```

   in the search box and then press the **Find** button. You will be presented with the JBoss EAP 6 package in the result box.

3. Select the JBoss EAP 6 package and press the **Apply** button. See figure below.
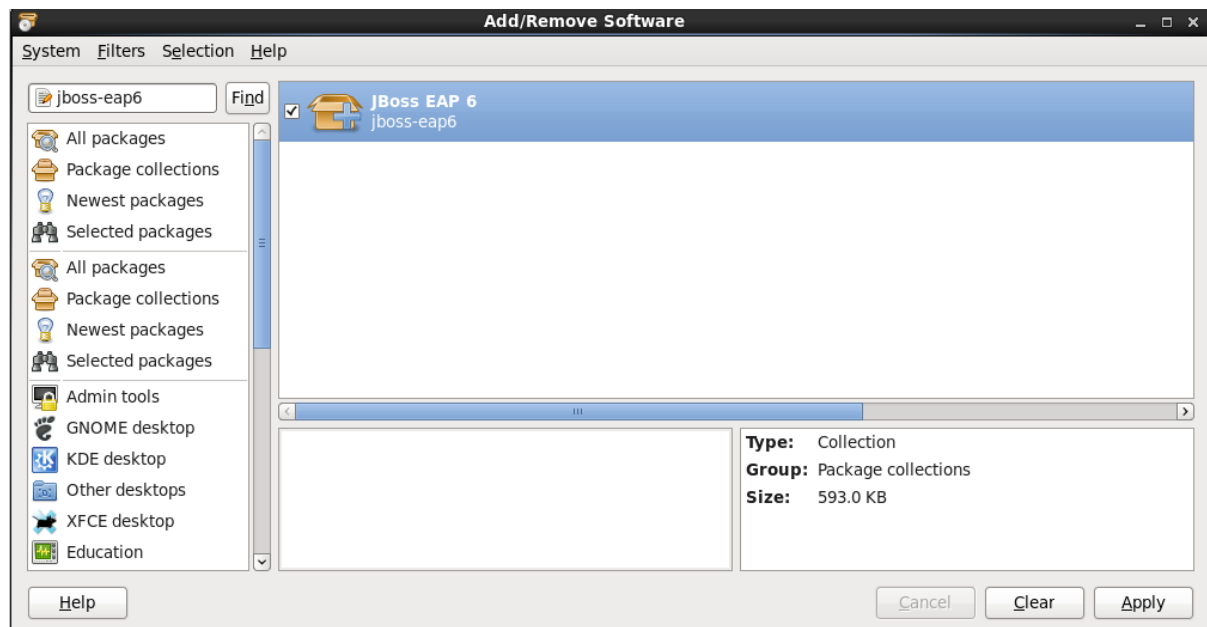
Figure 3.6. JBoss EAP 6 PackageKit Install

4. Follow the rest of the steps to install JBoss EAP 6 on your target machine.

Result

The installation is complete and JBoss EAP 6 is installed in your target machine.

3.6. TEXT-BASED RPM INSTALLATION

3.6.1. Install JBoss EAP 6 (Text-based RPM Installation)

Summary

The RPM package method of installing JBoss EAP 6 is appropriate for Red Hat Enterprise Linux 6. This topic covers the steps required to install an instance using the command line.

Prerequisites

- Section 2.1, "JBoss EAP 6 Installation Prerequisites" .

Procedure 3.11. Text-based Installation Steps

Access and install the RPM package by using the YUM install via the Red Hat Network.

1. **Install the RPM package by using YUM and the Red Hat Network**
   Use YUM to install the default JBoss EAP 6 group package by using the `groupinstall` command.

   ```
   [user@host ~]$ yum groupinstall jboss-eap6
   ```

2. **Configure init options.**
   The RPM install contains init scripts for launching the server. The configuration for the init scripts are contained in several additional files. Refer to Section A.4, "RPM Installation Configuration Files for JBoss EAP 6" for details about these files and the options contained within.

Result

The installation is complete. The default *EAP_HOME* path for the RPM installation is `/usr/share/jbossas`. Refer to Section A.3, "RPM Package List for JBoss EAP 6" for a complete list of all the packages installed.

3.7. PATCH INSTALLATION

3.7.1. About Patching Mechanisms

JBoss security and bug patches are released in two forms.

- Planned updates: As part of a micro, minor or major upgrade of an existing product.

- Asynchronous updates: As a one off patch which is released outside the normal upgrade cycle of the existing product.

Deciding whether a patch is released as part of a planned update or an out-of-cycle one-off depends on the severity of the flaw being fixed. Flaws of low impact are typically deferred, to be resolved in the next minor release of the affected products. Flaws of moderate or higher impact are typically

addressed in order of importance as an update to the product with an asynchronous release and contain only a resolution to the flaw at hand.

The severity of a security flaw is based on the assessment of the bug by the Security Response Team at Red Hat, combined with several consistent factors:

- How easily can a flaw be exploited?

- What kind of damage can be done if exploited?

- Are there typically other factors involved that lower the impact of the flaw (such as firewalls, Security-Enhanced Linux, compiler directives, and so forth)?

Red Hat maintains a mailing list for notifying subscribers about security related flaws. See Section 3.7.2, "Subscribe to Patch Mailing Lists"

For more information on how Red Hat rates JBoss security flaws, please click on the following link: http://securityblog.redhat.com/2012/09/19/how-red-hat-rates-jboss-security-flaws/

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3.7.2. Subscribe to Patch Mailing Lists

Summary

The JBoss team at Red Hat maintains a mailing list for security announcements for Red Hat JBoss Enterprise Middleware products. This topic covers what you need to do to subscribe to this list.

Prerequisites

- None

Procedure 3.12. Subscribe to the JBoss Watch List

1. Click the following link to go to the JBoss Watch mailing list page: JBoss Watch Mailing List .

2. Enter your email address in the `Subscribing to Jboss-watch-list` section.

3. [You may also wish to enter your name and select a password. Doing so is completely optional but recommended.]

4. Press the `Subscribe` button to start the subscription process.

5. You can browse the archives of the mailing list by going to: JBoss Watch Mailing List Archives .

Result

After confirmation of your email account, you will be subscribed to receive security related announcements from the JBoss patch mailing list.

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3.7.3. Install Patches in zip form

Summary

JBoss security patches are distributed in two forms: zip (for all products) and RPM (for a subset of products). JBoss bug fix patches are only distributed in zip format. This task describes the steps you need to take to install the patches (security or bug fixes) via the zip format.

Prerequisites

- Valid access and subscription to the Red Hat Customer Portal.

- A current subscription to a JBoss product installed in a zip format.

Procedure 3.13. Apply a patch to a JBoss product via the zip method

Security updates for JBoss products are provided by an erratum (for both zip and RPM methods). The erratum encapsulates a list of the resolved flaws, their severity ratings, the affected products, textual description of the flaws, and a reference to the patches. Bug fix updates are not announced via an erratum.

For zip distributions of JBoss products, the errata includes a link to a URL on the Customer Portal where the patch zip can be downloaded. This download contains the patched versions of existing JBoss products and only includes the files that have been changed from the previous install.

> **WARNING**
>
> Before installing a patch, you must backup your JBoss product along with all customized configuration files.

1. Get notified about the security patch either via being a subscriber to the JBoss watch mailing list or by browsing the JBoss watch mailing list archives.

   > **NOTE**
   >
   > Only security patches are announced on the JBoss watch mailing list.

2. Read the errata for the security patch and confirm that it applies to a JBoss product in your environment.

3. If the security patch applies to a JBoss product in your enviornment, then follow the link to download the patch from the Red Hat Customer Portal.

4. The downloadable zip file from the customer portal will contain all the files required to fix the security issue or bug. Download this patch zip file in the same location as your JBoss product.

5. Unzip the patch file in the same location where the JBoss product is installed. The patched versions overwrite the existing files.

Result

The JBoss product is patched with the latest update using the zip format.

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3.7.4. Install Patches in RPM form

Summary

JBoss patches are distributed in two forms: ZIP (for all products) and RPM (for a subset of products). This task describes the steps you need to take to install the patches via the RPM format. This RPM update method is used to ship security asynchronous patches and macro/minor/major product updates only.

Prerequisites

- A valid subscription to the Red Hat Network.

- A current subscription to a JBoss product installed via an RPM package.

Procedure 3.14. Apply a patch to a JBoss product via the RPM method

Security updates for JBoss products are provided by an erratum (for both zip and RPM methods). The erratum encapsulates a list of the resolved flaws, their severity ratings, the affected products, textual description of the flaws, and a reference to the patches.

For RPM distributions of JBoss products, the errata include references to the updated RPM packages. The patch can be installed by using yum or another RPM tool to update the relevant packages.

> ⚠️ **WARNING**
>
> Before installing a patch, you must backup your JBoss product along with all customized configuration files.

1. Get notified about the security patch either via being a subscriber to the JBoss watch mailing list or by browsing the JBoss watch mailing list archives.

2. Read the errata for the security patch and confirm that it applies to a JBoss product in your environment.

3. If the security patch applies to a JBoss product in your environment, then follow the link to download the updated RPM package which is included in the errata.

4. Use

   ```
   yum update
   ```

   or a similar command to install the patch.

Result

The JBoss product is patched with the latest update using the RPM format.

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3.7.5. Severity and Impact Rating of JBoss Security Patches

To communicate the risk of each JBoss security flaw, Red Hat uses a four-point severity scale of low, moderate, important and critical, in addition to Common Vulnerability Scoring System (CVSS) version 2 base scores which can be used to identify the impact of the flaw.

Table 3.2. Severity Ratings of JBoss Security Patches

Severity	Description
Critical	This rating is given to flaws that could be easily exploited by a remote unauthenticated attacker and lead to system compromise (arbitrary code execution) without requiring user interaction. These are the types of vulnerabilities that can be exploited by worms. Flaws that require an authenticated remote user, a local user, or an unlikely configuration are not classed as critical impact.
Important	This rating is given to flaws that can easily compromise the confidentiality, integrity, or availability of resources. These are the types of vulnerabilities that allow local users to gain privileges, allow unauthenticated remote users to view resources that should otherwise be protected by authentication, allow authenticated remote users to execute arbitrary code, or allow local or remote users to cause a denial of service.
Moderate	This rating is given to flaws that may be more difficult to exploit but could still lead to some compromise of the confidentiality, integrity, or availability of resources, under certain circumstances. These are the types of vulnerabilities that could have had a critical impact or important impact but are less easily exploited based on a technical evaluation of the flaw, or affect unlikely configurations.
Low	This rating is given to all other issues that have a security impact. These are the types of vulnerabilities that are believed to require unlikely circumstances to be able to be exploited, or where a successful exploit would give minimal consequences.

The impact component of a CVSS v2 score is based on a combined assessment of three potential impacts: Confidentiality (C), Integrity (I) and Availability (A). Each of these can be rated as None (N), Partial (P) or Complete (C).

Because the JBoss server process runs as an unprivileged user and is isolated from the host operating system, JBoss security flaws are only rated as having impacts of either None (N) or Partial (P).

Example 3.1. CVSS v2 Impact Score

The example below shows a CVSS v2 impact score, where exploiting the flaw would have no impact on system confidentiality, partial impact on system integrity and complete impact on system availability (that is, the system would become completely unavailable for any use, for example, via a kernel crash).

```
C:N/I:P/A:C
```

Combined with the severity rating and the CVSS score, organizations can make informed decisions on the risk each issue places on their unique environment and schedule upgrades accordingly.

For more information about CVSS2, please see: CVSS2 Guide.

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3.8. AUTOMATED INSTALLATION

3.8.1. Install Multiple Instances of JBoss EAP 6 (Installer)

Summary

Multiple identical instances of JBoss EAP 6 can be installed using an automated script, generated during the installation process, using either the Graphical or Text-based installer. This topic covers the steps required to install JBoss EAP 6 using a generated script.

Prerequisites

- Generate an automated script using the Graphical or Text-based Installer:

    - Section 3.3.2, "Install JBoss EAP 6 (Graphical Installer)" .

    - Section 3.4.2, "Install JBoss EAP 6 (Text-based Installer)" .

Procedure 3.15. Automated Installation

- In a terminal, run the following command to install JBoss EAP 6 using the automated script:

```
java -jar jboss-eap-6.1.0-installer.jar SCRIPT_NAME.xml
```

Result

An identical instance of JBoss EAP 6 has been installed, based on the automatically generated script.

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3.9. SERVICE CONFIGURATION

3.9.1. Configure JBoss EAP 6 as a Service in Red Hat Enterprise Linux (RPM Method)

Summary

Use the following procedure to install JBoss EAP 6 as a service on Red Hat Enterprise Linux when the installation has been done using the RHN (RPM) method.

Prerequisites

- Install JBoss EAP 6 using the RPM Method (Graphical or Text Based).

    - Section 3.6.1, "Install JBoss EAP 6 (Text-based RPM Installation)" .

- ○ Section 3.5.1, "Install JBoss EAP 6 (Graphical RPM Installation)".

- Administrator privileges on the server are required.

Procedure 3.16. Configure JBoss EAP 6 as a Service using the RPM Method in Red Hat Enterprise Linux

1. **Install JBoss EAP 6**
   Install JBoss EAP 6 via the RPM method using one of the steps listed in the prerequisite sections listed above.

2. **Enable the service**
   The RPM install method for JBoss EAP 6 installs the requisite service files in their correct locations. All you need to do to set it up as service is issue the following command:

   ```
   chkconfig jbossas on
   ```

Result

JBoss EAP 6 starts automatically when the Red Hat Enterprise Linux reaches its default run-level, and stops automatically when the operating system goes through its shutdown routine.

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3.9.2. Configure JBoss EAP 6 as a Service in Red Hat Enterprise Linux (Zip, Installer)

Summary

Use the following procedure to install JBoss EAP 6 as a service on Red Hat Enterprise Linux when the installation has been done with either the zip, text, or graphical methods. This process does not apply when the installation has been done using the RHN (RPM) method.

Prerequisites

- Install JBoss EAP 6 using the Zip installation, Graphical Installer, or Text-based Installer:

  - ○ Section 3.2.2, "Install JBoss EAP 6 (Zip Installation)".

  - ○ Section 3.3.2, "Install JBoss EAP 6 (Graphical Installer)".

  - ○ Section 3.4.2, "Install JBoss EAP 6 (Text-based Installer)".

- Administrator privileges on the server are required.

Procedure 3.17. Setup the Service

1. **Locate the start-up script and configuration file**
   The start-up script and an associated configuration file are located in the *EAP_HOME*/bin/init.d/ directory. Open the configuration file jboss-as.conf to edit it.

2. **Customize the start-up options in the jboss-as.conf file**
   There are several options within the jboss-as.conf file. At the minimum, specify the correct values for JBOSS_HOME and the JBOSS_USER variables. If these variables are absent, add them.

3. **Copy files into system directories**

   a. Copy the modified configuration file to the **/etc/jboss-as** directory.

   ```
   [user@host init.d]$ sudo mkdir /etc/jboss-as
   ```

   ```
   [user@host init.d]$ sudo cp jboss-as.conf /etc/jboss-as/
   ```

   b. Copy the start-up script to the **/etc/init.d** directory.

   ```
   [user@host init.d]$ sudo cp jboss-as-standalone.sh /etc/init.d
   ```

4. **Add the start-up script as a service.**
   Add the new **jboss-as-standalone.sh** service to list of automatically started services, using the **chkconfig** service management command.

   ```
   [user@host init.d]$ sudo chkconfig --add jboss-as-standalone.sh
   ```

5. **Start the service.**
   Test that the service has been installed correctly by using the standard syntax for starting Red Hat Enterprise Linux services.

   ```
   [user@host bin]$ sudo service jboss-as-standalone.sh start
   ```

   If everything has gone correctly, you should get a green [OK]. If you get an error, check the error logs and make sure your paths are correct in the configuration file.

6. **Make the service start automatically when you restart your server.**
   To add the service to the list of services which start automatically when your server restarts, issue the following command.

   ```
   [root@host ~]# chkconfig jboss-as-standalone.sh on
   ```

   The service will now be started when your server reaches run-level 3, and will be stopped when your server is shut down or restarted.

   > **NOTE**
   >
   > The steps above describe running EAP as a service in standalone mode. In order to run EAP as a service in domain mode, use the same steps but replace the start-up script with **jboss-as-domain.sh**.

Result

JBoss EAP 6 starts automatically when the Red Hat Enterprise Linux reaches its default run-level, and stops automatically when the operating system goes through its shutdown routine.

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CHAPTER 4. UPGRADE TO THE LATEST RELEASE

4.1. UPGRADE THE JBOSS EAP 6 ZIP INSTALLATION

Summary

Upgrading to the latest release of JBoss EAP 6 requires some initial work to back up the existing installation. This topic covers upgrading the ZIP installation.

Prerequisites

- Ensure that the base operating system is up to date.

- Determine which files have been modified since JBoss EAP 6 was installed.

- Back up any modified configuration files, deployments, and all user data.

- Section 3.2.1, "Download JBoss EAP 6 (Zip Installation)" .

> ⚠ **WARNING**
>
> For managed domains, the master Host Controller (or Domain Controller) instance should be upgraded first, before each Host Controller is upgraded.

Procedure 4.1. Upgrade to the latest JBoss EAP 6 version

1. Move the downloaded ZIP archive to the desired location. It is recommended that this is a different location to the existing JBoss EAP 6 installation.
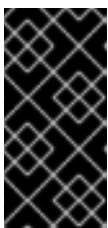
   > **IMPORTANT**
   >
   > If you wish to install the latest version of JBoss EAP 6 to the same directory location as the existing installation, you will need to move the existing installation to a different location before proceeding. This is to prevent modified configuration files, deployments, and upgrades from being lost.

2. Unzip the archive. This step installs a clean instance of the latest JBoss EAP 6 release.

3. Copy the *EAP_HOME*/**domain/** and *EAP_HOME*/**standalone/** directories from the previous installation over the new installation directories.

4. Review the changes made to the **bin** directory of the previous installation, and make the equivalent modifications to the new directory.

> **WARNING**
>
> Files in the `bin` directory should not be overwritten by the files from previous versions. Changes should be made manually.

5. Review the remaining modified files from the previous installation, and move these changes into the new installation. These files may include:

   - The `welcome-content` directory.

   - Custom modules in the `modules` directory.

   - Custom bundles in the `bundles` directory.

Result

The JBoss EAP 6 ZIP installation has been successfully upgraded to the latest release.

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4.2. UPGRADE THE JBOSS EAP 6 RPM INSTALLATION

Summary

Upgrading to the latest release of JBoss EAP 6 requires some initial work to back up the existing installation. This topic covers upgrading the RPM installation via the Red Hat Network (RHN).

Prerequisites

- Ensure that the base operating system is up to date and that the system is subscribed and enabled to get updates for the Base OS channel.

- Ensure that the correct JBoss EAP 6 RHN channel is enabled. For example, on a x86, 64 bit architecture, this will be the JBoss Application Platform (v 6) for 6Server x86_64 channel (`jbappplatform-6-x86_64-server-6-rpm`).

- Back up any modified configuration files, deployments, and all user data.

> **WARNING**
>
> For managed domains, the master Host Controller (or Domain Controller) instance should be upgraded first, before each Host Controller is upgraded.

Procedure 4.2. Upgrade to the latest JBoss EAP 6 release

1. Run the following command in a terminal to upgrade the installation:

```
[user@host] yum update
```

2. Manually merge each created ***.rpmnew** file that contains changes into the production configuration files.

Result

JBoss EAP 6 has been successfully upgraded.

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4.3. UPGRADE JBOSS EAP CLUSTER FROM 6.0 TO 6.1

Summary

JBoss EAP 6.1 does not support the creation of clusters where the different nodes are made up of different versions of JBoss EAP servers. Thus, a mixed cluster based on different versions is not supported and all nodes within a cluster must be the same version - 6.1.

> ⚠ **WARNING**
>
> The upgrade process for migrating traffic from a 6.0 cluster to a 6.1 cluster is therefore based on transferring all traffic to the 6.1 cluster and then shutting down the servers or nodes in the 6.0 cluster.

Prerequisites

- None

Procedure 4.3. Setup a JBoss EAP Cluster in 6.1

1. Refer to the *HTTP Clustering and Load Balancing* chapter of the *JBoss EAP 6.1 Administration and Configuration Guide* for instructions on how to setup a JBoss EAP cluster in 6.1.

2. Migrate all traffic to this new cluster using the steps outlined in the *Migrate Traffic between Clusters* chapter of the *JBoss EAP 6.1 Administration and Configuration Guide*

Result

Your JBoss EAP 6.0 cluster has been migrated to a cluster based on JBoss EAP 6.1.

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APPENDIX A. ADDITIONAL INFORMATION

A.1. AVAILABLE DOWNLOADS FOR JBOSS EAP 6

JBoss EAP 6 includes a number of different installation types and optional components, which are available for download on the Red Hat Customer Portal at https://access.redhat.com/. The following table explains the different options. Some components are only appropriate for certain operating systems or architectures, and thus are only available for those specific variations.

Table A.1. Available Downloads

Name	Description	Operating Systems
Apache HTTP Server	A standalone Apache HTTP server instance for each supported operating system and architecture. This HTTP server has been tested and verified to work with JBoss EAP 6.	Red Hat Enterprise Linux 5, Red Hat Enterprise Linux 6, Microsoft Windows Server 2008, Solaris 10 and 11
Native Components	Components which have been compiled to be optimized for a specific platform. For instance, DLLs are provided for Microsoft Windows Server environments. In some cases, the native components may provide performance improvements.	Red Hat Enterprise Linux 5, Red Hat Enterprise Linux 6, Microsoft Windows Server 2008, Solaris 10 and 11, Hewlett-Packard HP-UX
Native Utilities	Utilities specific to each supported operating system and architecture, such as scripts and utilities for installing JBoss EAP 6 as a service in your operating system and generating SSL encryption keys and certificates.	Red Hat Enterprise Linux 5, Red Hat Enterprise Linux 6, Microsoft Windows Server 2008, Solaris 10 and 11, Hewlett-Packard HP-UX
Webserver Connector Natives	Pre-compiled modules for Apache, Microsoft, and Oracle iPlanet web servers, for HTTP load balancing and high-availability capabilities. These binaries are extensively tested and known to work well with JBoss EAP 6.	Red Hat Enterprise Linux 5, Red Hat Enterprise Linux 6, Microsoft Windows Server 2008, Solaris 10 and 11, Hewlett-Packard HP-UX
Javadocs	Documentation for all public APIs exposed by JBoss EAP 6. You can install these into your local HTTP server or IDE, or can view them on your local machine.	Platform-independent
Installer	Java installer for JBoss EAP 6. Includes steps to install the Quickstarts and Maven Repository.	Platform-independent

Name	Description	Operating Systems
Maven Repository	A Maven repository which you can download and make available in your local development environment, and which contains artifacts common to applications built upon JBoss EAP 6. The Maven repository is also available through the JBoss EAP 6 Installer.	Platform-independent
Quickstarts	Example applications to help you get started developing Java EE 6 applications with APIs supplied with JBoss EAP 6. The Quickstarts are also available through the JBoss EAP 6 Installer.	Platform-independent
Source Code	The Java source code for JBoss EAP 6, provided so that you can recompile it in your own environment or audit it yourself.	Platform-independent
Application Platform	The Zip installation package, which can be installed and run on every supported platform. This is the most common way to install JBoss EAP 6.	Platform-independent

IMPORTANT

The RPM installation method's downloads are not available on the Customer Portal, but via the Red Hat Network (RHN).

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A.2. DIRECTORY STRUCTURE OF JBOSS EAP 6

Summary

JBoss EAP 6 includes a simplified directory structure, compared to previous versions. This topic contains a listing of the directories, and a description of what each directory contains.

It also includes directory structures of the **standalone/** and **domain/** folders.

Table A.2. Top-level directories and files

Name		Purpose
appclient/		Contains configuration details for the application client container.

Name	Purpose
bin/	Contains start-up scripts for JBoss EAP 6 on Red Hat Enterprise Linux and Microsoft Windows.
bundles/	Contains OSGi bundles which pertain to JBoss EAP 6 internal functionality.
docs/	License files, schemas, and examples.
domain/	Configuration files, deployment content, and writable areas used when JBoss EAP 6 runs as a managed domain.
modules/	Modules which are dynamically loaded by JBoss EAP 6 when services request them.
standalone/	Configuration files, deployment content, and writable areas used when JBoss EAP 6 runs as a standalone server.
welcome-content/	Contains content used by the Welcome web application which is available on port 8080 of a default installation.
`jboss-modules.jar`	The bootstrapping mechanism which loads modules.

Table A.3. Directories within the `domain/` directory

Name	Purpose
configuration/	Configuration files for the managed domain. These files are modified by the Management Console and Management CLI, and are not meant to be edited directly.
data/	Information about deployed services. Services are deployed using the Management Console and Management CLI, rather than by a deployment scanner. Therefore, do not place files in this directory manually.
log/	Contains the run-time log files for the host and process controllers which run on the local instance.
servers/	Contains the equivalent `data/`, `log/`, and `tmp/` directories for each server instance in a domain, which contain similar data to the same directories within the top-level `domain/` directory.

Name	Purpose
tmp/	Contains temporary data such as files pertaining to the shared-key mechanism used by the Management CLI to authenticate local users to the managed domain.

Table A.4. Directories within the `standalone/` directory

Name	Purpose
configuration/	Configuration files for the standalone server. These files are modified by the Management Console and Management CLI, and are not meant to be edited directly.
deployments/	Information about deployed services. The standalone server does include a deployment scanner, so you can place archives in this directory to be deployed. However, the recommended approach is to manage deployments using the Management Console or Management CLI.
lib/	External libraries which pertain to a standalone server mode. Empty by default.
tmp/	Contains temporary data such as files pertaining to the shared-key mechanism used by the Management CLI to authenticate local users to the server.

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A.3. RPM PACKAGE LIST FOR JBOSS EAP 6

Summary

JBoss EAP 6 is installed on Red Hat Enterprise Linux 6 using the YUM package group **JBoss EAP 6**. That group is made up of the following packages.

Table A.5. Package List

Package	Description
jbossas-appclient	JEE Application Client Container
jbossas-bundles	OSGi bundles
jbossas-core	Core components. This is required for all configurations.

Package	Description
jbossas-domain	Domain configuration
jbossas-hornetq-native	Container for the JBoss AS HornetQ files
jbossas-jbossweb-native	JBoss Enterprise Web Platform
jbossas-modules-eap	JBoss EAP modules
jbossas-product-eap	Product configuration components. This customizes product execution.
jbossas-standalone	Standalone configuration
jbossas-welcome-content-eap	Welcome content used in startup messages and console pages
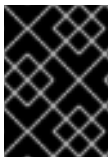
> **IMPORTANT**
>
> The `jbossas-hornetq-native` package is included for high availability in JBoss EAP 6 but it is not activated by default.

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A.4. RPM INSTALLATION CONFIGURATION FILES FOR JBOSS EAP 6

Summary

The RPM installation of JBoss EAP 6 includes three additional configuration files to the ZIP installation. These files are used by the service init script to specify the application server's launch environment. One of these files applies to all JBoss EAP 6 instances, while the other two provide overrides for standalone and domain mode servers.

Table A.6. Additional RPM Configuration Files

File	Description
`/etc/jbossas/jbossas.conf`	This file is read first and applies to all JBoss EAP 6 instances.
`/etc/sysconfig/jbossas`	Settings specific to standalone servers. Values specified here will override those in jbossas.conf when running as a standalone server.
`/etc/sysconfig/jbossas-domain`	Settings specific to domain-mode servers. Values specified here will override those in jbossas.conf when running as a domain-mode server.

The following table shows a list of available configuration properties along with their default values.

Table A.7. RPM Installation Configuration Properties

Property	Description
JBOSS_USER	The system user account that the JBoss EAP 6 runs as. This user also has ownership of the files. Default value: **jboss**
JBOSS_GROUP	The system user group that the JBoss EAP 6 files belong to. Default value: **jboss**
JBOSS_STARTUP_WAIT	The number of seconds that the init script will wait until confirming that the server has launched successfully after receiving a **start** or **restart** command. Default value: **60**
JBOSS_SHUTDOWN_WAIT	The number of seconds that the init script will wait for the server to shutdown before continuing when it receives a **stop** or **restart** command. Default value: **20**
JBOSS_CONSOLE_LOG	The file that the CONSOLE log handler will be redirected to. Default value: **/var/log/jbossas/*$JBOSSCONF*/console.log**
JAVA_HOME	The directory where your Java Runtime Environment is installed. Default value: **/usr/lib/jvm/jre**
JBOSS_HOME	The directory where the application server files are installed. Default value: **/usr/share/jbossas**
JAVAPTH	The path where the Java executable files are installed. Default value: **$JAVA_HOME/bin**
JBOSSCONF	The server mode to launch this server in, **standalone** or **domain**. Default value: **standalone** or **domain** depending on server mode.
JBOSSSH	The script which is used to launch to server. Default value: **$JBOSS_HOME/bin/$JBOSSCONF.sh**
JBOSS_SERVER_CONFIG	The server configuration file to use. There is no default for this property. Either **standalone.xml** or **domain.xml** can be defined at start.
JBOSS_HOST_CONFIG	This property allows a user to specify the host configuration (such as **host.xml**). It has no value set as the default.

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APPENDIX B. REVISION HISTORY

Revision 1.1-0.400   **2013-10-31**   **Rüdiger Landmann**
    Rebuild with publican 4.0.0

Revision 1.1-0   **Wed Sep 4 2013**   **Russell Dickenson**
    JBoss Enterprise Application Platform 6.1.1 GA Release.