Oracle® Enterprise Manager

JBoss Enterprise Application Platform (EAP) Plug-in User's Guide

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Preface

This guide provides a description about the Oracle system monitoring plug-in for JBoss EAP, details on the versions the plug-in supports, prerequisites for installing the plug-in, and step-by-step instructions on how to download, install, verify, and validate the plug-in.

Audience

This document is intended systems and database administrators tasked with monitoring Apache Tomcat through Enterprise Manager.

Documentation Accessibility

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Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

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1

JBoss EAP Plug-in Overview and Prerequisites

This chapter provides an overview description of the Oracle system monitoring plug-in for JBoss EAP and provides a list of available features. Review the summary of prerequisites required before configuring JBoss EAP for monitoring by Oracle Enterprise Manager.

- JBoss EAP Plug-in Overview and Feature Summary
- Supported Versions
- JBoss EAP Server Plug-in Prerequisites
- Downloading the Plug-in
- Deploying the Plug-in
- Upgrading the Plug-in
- Undeploying the Plug-in

JBoss EAP Plug-in Overview and Feature Summary

The system monitoring plug-in for JBoss EAP extends Oracle Enterprise Manager 24.1 to add support for managing JBoss EAP instances. By deploying the plug-in within your environment, you gain the following management features:

- Monitor JBoss EAP instances.
- Gather configuration data and track configuration changes for JBoss EAP instances.
- Raise alerts and violations based on thresholds set on monitored metrics and configuration data.
- Provide rich out-of-box reports through Enterprise Manager's Information Publisher reports feature based on the gathered data.
- Support monitoring by a local or remote Agent. Local Agent is an agent that is running on the same host as the JBoss EAP server. Remote Agent is an agent running on a host that is different from the host where JBoss EAP is running.
- Oracle Enterprise Manager Jobs that allow for the following management of JBoss EAP:
  - Reloading JBoss
  - Get the status of JBoss
  - Restart JBoss

Supported Versions

Supported versions for JBoss EAP.

This plug-in supports the following versions of products:

- Enterprise Manager

- – This plug-in is certified for the latest release of Oracle Enterprise Manager 24.1.
- JBoss Enterprise Application Platform 6 and 7

To view the complete list of certified products, you can access the Enterprise Manager certification matrix by following these steps:

1. Sign in to My Oracle Support: `http://support.oracle.com`
2. Click the **Certifications** tab.
3. In the **Certification Search**, from the **Product** list, select one of the following:
   - **Enterprise Manager Base Platform - OMS**, to view the certification for OMS.
   - **Enterprise Manager Base Platform - Agent**, to view the certification for Management Agent.
4. From the **Release** list, select release version, and then click **Search**.

JBoss EAP Plug-in Prerequisites

The following prerequisites must be met before you can deploy the plug-in. Patches are available from My Oracle Support: https://support.oracle.com.

1. Enterprise Manager (Oracle Management Server and Oracle Management Agent) must be installed.
2. Ensure JMX is enabled on JBoss EAP. For more information on how to enable JMX, see Red Hat's documentation for Standalone and Domainmode.

   Confirm the `<interfaces>` section is correct in your `standalone.xml` file.

   For example, it may look something like this. In this example, you must replace both `127.0.0.1` IP addresses with the IP address of the host.

```
<interfaces>
        <interface name="management">
             <inet-address value="$
{jboss.bind.address.management:127.0.0.1}"/>
        </interface>
        <interface name="public">
             <inet-address value="${jboss.bind.address:127.0.0.1}"/>
        </interface>
    </interfaces>
```

Downloading the Plug-in

Download the JBoss EAP Plug-in

You can download plug-ins in online or offline mode. Online mode refers to an environment where you have Internet connectivity, and can download the plug-in directly through Enterprise Manager from My Oracle Support. Offline mode refers to an environment where you do not have Internet connectivity, or where the plug-in is not available from My Oracle Support.

See the Managing Plug-ins chapter in the Oracle Enterprise Manager Administrator's Guide for details on downloading the plug-in in either mode.

Deploying the Plug-in

Deploying the JBoss EAP Plug-in

You can deploy the plug-in to an Oracle Management Service instance using the Enterprise Manager console, or using the EM Command Line Interface (EMCLI). While the console enables you to deploy one plug-in at a time, the command line interface mode enables you to deploy multiple plug-ins at a time, that can save plug-in deployment time and downtime.

See the *Managing Plug-ins* chapter in the *Oracle Enterprise Manager Administrator's Guide* for instructions on deploying the plug-in.

Upgrading the Plug-in

How to upgrade the JBoss EAP plug-in for Enterprise Manager.

The Self Update feature allows you to expand Enterprise Manager's capabilities by updating Enterprise Manager components whenever new or updated features become available. Updated plug-ins are made available via the Enterprise Manager Store, an external site that is periodically checked by Enterprise Manager to obtain information about updates ready for download. See the *Updating Plug-ins* chapter in the *Oracle Enterprise Manager Administrator's Guide* for steps to update the plug-in.

Undeploying the Plug-in

How to undeploy the JBoss EAP Enterprise Manager Plug-in.

See the Managing Plug-ins chapter in the Oracle Enterprise Manager Administrator's Guide for steps to undeploy the plug-in.

2

Discovery of the JBoss EAP Target

How to add a JBoss EAP target in Enterprise Manager.

This section describes how to add a JBoss EAP target to Enterprise Manager.

- Discovering JBoss EAP Targets
- **Adding Targets with EMCLI**
- **Verifying and Validating the Plug-in**

Discovering JBoss EAP Targets

After successfully deploying the plug-in, follow these steps to add the plug-in target to Enterprise Manager for central monitoring and management:

1. Log in to Enterprise Manager.

2. Click **Setup**, then **Add Targets**, and finally **Add Targets Manually**.

3. Select **Target Type** as **JBoss Enterprise Application Platform**, select a **Monitoring Agent** and then click **Add Manually**.

4. In the Add JBoss Enterprise Application Platform page, enter the following properties:

   - **Target Name**: Unique target name across all Cloud Control targets, such as `JBoss_EAP_Hostname`. This is the display name in Cloud Control. It represents this SQL Server target across all user interfaces within Cloud Control.

   - **JBoss Monitoring Credentials**

     - **JBoss JMX Username**: The username used to connect via JMX to JBoss. This is optional and should only be used if you are using authentication.

     - **JBoss JMX Password**:The password for the account used to connect via JMX to JBoss. This is optional and should only be used if you are using authentication.

   - **JBoss SSL Truststore Password**: The password for the truststore used to connect via JMX to JBoss. This is optional and should only be used if you are connecting with SSL.

   > **✎ Note:**
   >
   > The Trust Store path is required under properties.

   - **Properties**

     - **SSL Trust Store**: This is the trust path to the trust store being used to connect to JBoss via SSL. This is optional and should only be used if you are connecting using SSL.

     - **Service URL**: This is the JMX Service URL to connect to JBoss via JMX. This can look different depending on what version of JBoss you are using and if you are connecting using securely or not.

JBoss Version	Service URL
JBoss 6 (with SSL)	service:jmx:remote+https://<hostname>:<port>
JBoss 6 (without SSL)	service:jmx:remote://<hostname>:<port>
JBoss 7 (with SSL)	service:jmx:remote+https://<hostname>:<port>
JBoss 7 (without SSL)	service:jmx:remote+http://<host>:<port>

- **Adding Targets with EMCLI**

  To add JBoss EAP targets with EMCLI, use the add_target verb, as shown in the following example:

```
emcli.bat add_target
    -name="JBoss Target"
    -type="oracle_jboss"
    -host="HostTargetName"
    -properties="serviceURL+service:jmx:remote://host:port"
    -subseparator=properties="+"
```

  You will need to specify the following options:

  – **Target name**: *-name*

    It must begin with an alphabetic character contain only alphanumeric characters, multibyte characters, a space, -, _, ., :, /, (,) and have a maximum length of 256 characters.

  – **Target type**: *-type*

    Always use "oracle_jboss" (including the quotes).

  – **Host name**: *-host*

    Network name of the machine running the Management Agent that is collecting data for this target instance.

  – **Target instance Properties:** *-properties*

    Name-value pair list of properties for the target instance. The available property names are as follows.

```
serviceURL
JMXUsername
JMXPassword
SSLTrustStore
SSLTrustStorePassword
```

  – **Properties separator delimiter**: *-separator=properties*
    Specify a string delimiter to use between name-value pairs for the value of the -properties option. The default separator delimiter is ";".

  – **Properties subseparator delimiter**: *-subseparator=properties*

    Specify a string delimiter to use between name and value in each name-value pair for the value of the -properties option. The default subseparator delimiter is ":".

  Verifying and Validating the Plug-in
  After waiting a few minutes for the plug-in to start collecting data, use the following steps to verify and validate that Enterprise Manager is properly monitoring the plug-in target:

a. Click the JBoss target link from the All Targets page.

b. Verify no metric collection errors are reported by clicking **Monitoring** and then **Metric Collection Errors** from the **Target** menu.

c. Ensure that reports can be seen, and no errors are reported by clicking **Information Publisher Reports** in the **Target** menu and viewing reports for the JBoss EAP target type.

d. Ensure that configuration data can be seen by clicking **Configuration** and then **Last Collected** in the **Target** menu. If configuration data does not immediately appear, click **Refresh** in the Latest Configuration page.

Adding Targets with EMCLI

To add JBoss EAP targets with EMCLI, use the `add_target` verb.

For example:

```
emcli.bat add_target
    -name="JBoss Target"
    -type="oracle_jboss"
    -host="HostTargetName"
    -properties="serviceURL+service:jmx:remote://host:port"
    -subseparator=properties="+"
```

You will need to specify the following options:

*   **Target name**: *-name*
    It must begin with an alphabetic character contain only alphanumeric characters, multibyte characters, a space, -, _, ., :, /, (,) and have a maximum length of 256 characters.

*   **Target type**: *-type*
    Always use "oracle_jboss" (including the quotes).

*   **Host name**: *-host*
    Network name of the machine running the Management Agent that is collecting data for this target instance.

*   **Target instance Properties:** *-properties*
    Name-value pair list of properties for the target instance. The available property names are as follows.

    *   serviceURL
    *   JMXUsername
    *   JMXPassword
    *   SSLTrustStore
    *   SSLTrustStorePassword

*   **Properties separator delimiter**: *-separator=properties*
    Specify a string delimiter to use between name-value pairs for the value of the -properties option. The default separator delimiter is ";".

*   **Properties subseparator delimiter**: *-subseparator=properties*
    Specify a string delimiter to use between name and value in each name-value pair for the value of the -properties option. The default subseparator delimiter is ":".

Verifying and Validating the Plug-in

How to verify and validate the JBoss EAP plug-in for Enterprise Manager.

After waiting a few minutes for the plug-in to start collecting data, use the following steps to verify and validate that Enterprise Manager is properly monitoring the plug-in target:

1. Click the **JBoss target** link from the **All Targets** page.

2. Verify no metric collection errors are reported by clicking **Monitoring** and then **Metric Collection Errors** from the **Target** menu.

3. Ensure that reports can be seen, and no errors are reported by clicking **Information Publisher Reports** in the **Target** menu and viewing reports for the JBoss EAP target type.

4. Ensure that configuration data can be seen by clicking **Configuration** and then **Last Collected** in the **Target** menu. If configuration data does not immediately appear, click **Refresh** in the Latest Configuration page.

3

Creating, Editing, and Using Jobs

This chapter describes how to create and edit jobs in Enterprise Manager for JBoss EAP. To create and edit jobs, follow these steps:

1. In Enterprise Manager Cloud Control 13c, click **Enterprise**, then **Job**, then click **Activity**.

2. On the Job Activity Page, select a job type from the **Create Job** menu and click **Go**. Select one of the following:

   - JBoss Status

   - Reload JBoss

   - Restart JBoss

   - Restart JBoss (CLI)

   > **✎ Note:**
   >
   > The difference between Restart JBoss and Restart JBoss (CLI) includes the following:
   >
   > - Restart JBoss uses JMX to send a restart command to JBoss. This immediately shuts down the server and can be considered dangerous. Only use this if you are certain JBoss can be shutdown immediately without any issues.
   >
   > - Restart JBoss (CLI) is the safer way to restart JBoss, but requires that the Oracle Management Agent is on the same host as JBoss.

3. In the **General** tab of the Create *<Job Type>* page, provide a name for the job and add the individual targets or one composite target such as a Group.

   - **Note:** If you are editing a job, then modify the job name and the selected targets.
   ---

4. In the **Parameters** tab of the Create *<Job Type>* page, from the **Options** menu, select an appropriate option to make the job function according when it starts. You can select one of these options as shown in the following table.

   Job Parameters Options

Job Type	Available Options
JBoss Status	Use SSL – Enter 'y' if you are using an SSL Connection
Reload JBoss	Use SSL – Enter 'y' if you are using an SSL Connection
Restart JBoss	Use SSL – Enter 'y' if you are using an SSL Connection

| Restart JBoss (CLI) | Full qualified path to `jboss-cli.sh` or `jboss-cli.bat` – This gives the plug-in access to call the CLI. |
| | Optional arguments to pass when calling `jboss-cli.sh` or `jboss-cli.bat` – These are additional arguments you may want to provide when restarting Jboss. |

5. In the **Credentials** tab of the Create *<Job Type>* Job page, select an appropriate option for credentials.
    You can choose to use the preferred credentials that are already set or override the preferred credentials with new credentials. In either case, you need to provide credentials for the agent host.

    To set the preferred credentials, click **Preferences** at the top-right corner of the Cloud Control console. From the left-vertical navigation bar, click **Preferred Credentials**. Cloud Control displays the Preferred Credentials page. On this page you can set the preferred credentials.

6. In the **Schedule** tab of the Create *<Job Type>* Job page, schedule the job.

7. In the **Access** tab of the Create *<Job Type>* Job page, define or modify the access you want other users to have to this job.

8. Click **Submit** to create the job.

4

JBoss EAP Reports

You can use the out-of-the-box reports to diagnose problems, analyze trends, and for capacity planning.

The JBoss EAP plug-in includes 10 out-of-the-box reports:

- JBoss 6 Datasource
- JBoss 6 Deployments
- JBoss 6 Threading
- JBoss 6 Transactions
- JBoss Datasource
- JBoss JVM
- JBoss Memory Pools
- JBoss Threading
- JBoss Transactions

Create Reports

To create a new report from one of the out-of-the-box reports by Oracle, follow these steps:

1. From the Enterprise menu, select **Reports**, then **Information Publisher Reports**.

2. Scroll down to the JBoss Application Server Performance section, find the desired report, and click the report title hyperlink.

3. Select the target you want this report to run against and click **Continue**. After clicking **Continue**, the desired report will generate.