

HP OpenView JMX Metric Builder Plug-in for Eclipse

For HP-UX and Solaris OpenView Operations Management Servers

Software Version: A.01.00

Getting Started

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1 JMB Plug-in for Eclipse

The **HP OpenView JMX Metric Builder** (JMB) is an application integrated with HP OpenView Operations (OVO) used to create user defined metrics (UDMs) that gather data from application MBeans registered in a JMX-compliant MBean server. The UDMs generate data about your applications that can be collected and monitored by OVO. Use the JMB to:

- edit a UDM file by mapping MBeans to UDMs
- validate metric IDs
- create UDMs that conform to the metric definitions DTD
- browse MBeans registered in an MBean server
- generate templates (OVO for UNIX only)

The **HP OpenView JMX Metric Builder Plug-in for Eclipse** (JMB Plug-in for Eclipse) is the same application as the JMB but is run independently from the OVO environment (the JMB Plug-in for Eclipse is launched from Eclipse, not OVO).

Like the JMB, the JMB Plug-in for Eclipse is used to create UDMs that gather data from application MBeans. In addition, the JMB Plug-in for Eclipse includes the following features:

- Start the JMB from Eclipse
- Test UDMs

MBean data is obtained directly from the application server (currently, the JMB Plug-in for Eclipse only supports the BEA WebLogic Application Server). This allows a developer to create UDMs and templates outside of the OVO environment. UDMs and templates generated by the JMB Plug-in for Eclipse must be copied to the OVO management server and deployed to managed nodes.

This guide contains basic installation and configuration information. To successfully use the JMB Plug-in for Eclipse, you should be familiar with the metrics definitions DTD, have an intermediate to advanced understanding of JMX, and should be familiar with Eclipse.

For more information about the metrics definitions DTD, refer to the OVO online help, *JMX Metric Builder* topic (if you are running OVO for Windows) or the online *User Defined Metrics User Guide* (if you are running OVO for UNIX).

2 Installation

System and Software Requirements

This section lists software requirements to run the JMB Plug-in Plug-in for Eclipse. Refer to [Installation](#) on page 10 for information about installing the software.

Minimum Requirements

To run the JMB Plug-in for Eclipse, the following software is required (if the download hyperlink spans more than a single line, usable hyperlinks appear in the row below the unusable link; click on the usable link to open the download page):

Software	Version	Available From	
OS	HP-UX 11.11, 11.23 (PA-RISC) Windows 2000, XP	N/A	
JDK (WebLogic 8.1)	1.4.2_07 or later	Windows	http://java.sun.com/j2se/1.4.2/download.html
		HP-UX	http://www.hp.com/go/java
JDK (WebLogic 9)	5.0 or later	Windows	http://java.sun.com/j2se/1.5.0/download.html
		HP-UX	http://www.hp.com/go/java (HP-UX)
Eclipse SDK	3.1.0	Windows	http://download.eclipse.org/eclipse/downloads/drops/R-3.1-200506271435/download.php?dropFile=eclipse-SDK-3.1-win32.zip
		HP-UX	http://download.eclipse.org/eclipse/downloads/drops/R-3.1-200506271435/download.php?dropFile=eclipse-SDK-3.1-hpux-motif.zip

Windows:

<http://download.eclipse.org/eclipse/downloads/drops/R-3.1-200506271435/download.php?dropFile=eclipse-SDK-3.1-win32.zip>

HP-UX:

<http://download.eclipse.org/eclipse/downloads/drops/R-3.1-200506271435/download.php?dropFile=eclipse-SDK-3.1-hpux-motif.zip>

BEA WebLogic Application Server	8.1 SP4 or later	http://commerce.bea.com/index.jsp	
HP OpenView Smart Plug-in for BEA WebLogic Server	A.04.00 or higher	Application SPI CD. You must also install the WASSPI-UDM-Bldr software bundle. Refer to the <i>HP OpenView Smart Plug-in User Defined Metrics User Guide</i> for more information about installing this bundle.	

Software	Version	Available From	
HP OpenView JMB Plug-in for Eclipse	1.0	Windows	/opt/OV/jmb/JMB-Developer/JMBPlugin-Windows.zip on the OVO management server (after installing the WASSPI-UDM-Bldr software bundle) or http://devresource.hp.com/drc/resources/jmbdwnld/index.jsp
		HP-UX	/opt/OV/jmb/JMB-Developer/JMBPlugin-HPUX.zip on the OVO management server (after installing the WASSPI-UDM-Bldr software bundle) or http://devresource.hp.com/drc/resources/jmbdwnld/index.jsp
Windows and HP-UX:		http://devresource.hp.com/drc/resources/jmbdwnld/index.jsp	

Supported Software

The JMB Plug-in for Eclipse is used with the following software to create UDMs:

Software	Version
HP OpenView Operations for UNIX	7.x, 8.0, 8.1
HP OpenView Smart Plug-in for BEA WebLogic Server	A.04.00 or higher
BEA WebLogic Application Server	8.1 SP4 or later

Installation

- 1 Install the minimum required software:

Software/File Name	Where to Extract\Install
JDK	<JDK-home>
Eclipse SDK eclipse-SDK-3.1-win32.zip (Windows) eclipse-SDK-3.1-hpux-motif.zip (HP-UX)	<eclipse-home>
BEA WebLogic Application Server	<weblogic-home>
HP OpenView JMB Plug-in for Eclipse JMBPlugin-Windows.zip (Windows) JMBPlugin-HPUX.zip (HP-UX)	<JMB-home>
HP OpenView JMB Plug-ins <JMB-home>/JMBPlugin.zip (Windows) <JMB-home>/JMBPlugin.tar (HP-UX)	<eclipse-home>/plugins

- 2 Copy the BEA WebLogic server jar file (`<weblogic-home>/weblogic##/server/lib/weblogic.jar`) to `<eclipse-home>/plugins/com.hp.openview.jmb.integ.bin_1.0.0/lib/ovojmxtool/plugins/com.hp.ovojmxtool_1.0.0/lib/`.

Uninstallation

To uninstall the JMB Plug-in for Eclipse, remove the following directories:

- `<eclipse-home>/plugins/com.hp.openview.jmb.integ.bin_1.0.0`
- `<eclipse-home>/plugins/com.hp.openview.jmb.integ.ui_1.0.0`
- `<eclipse-home>/plugins/com.hp.ovojmxtool-doc_1.0.0`

To uninstall other software you may have installed with the JMB Plug-in for Eclipse, refer to uninstallation information provided with that software.

3 Configuration

JMB Plug-in for Eclipse on HP-UX

If you are running the JMB Plug-in for Eclipse on HP-UX, set the `JAVA_HOME` environment variable:

```
JAVA_HOME = <JDK-home>  
export JAVA_HOME
```

Go to [Start the JMB Plug-in for Eclipse](#) on page 13 for information on how to start the JMB Plug-in for Eclipse.

Start the JMB Plug-in for Eclipse

To start the JMB Plug-in for Eclipse,

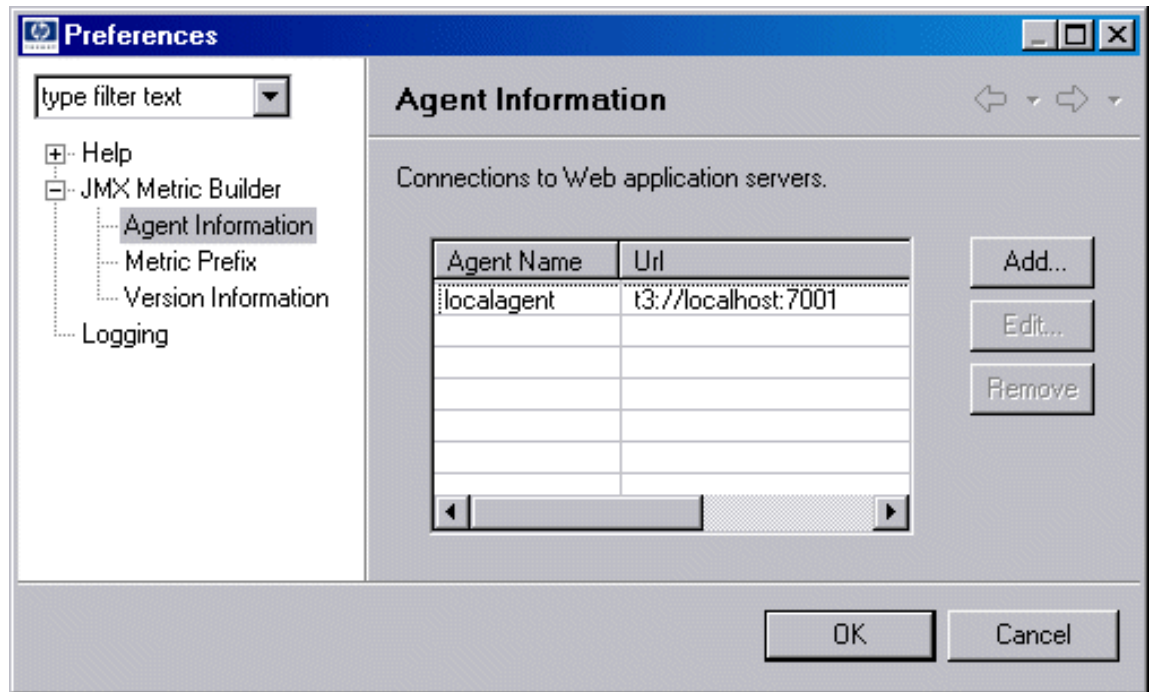
- 1 Launch Eclipse. Double-click `<eclipse-home>/eclipse/eclipse.exe`.
- 1 Select **File** → **New** → **Other**.
- 2 Open **Java**.
- 3 Select **Java Project**.
- 4 Click **Next**.
- 5 Enter a name for the project.
- 6 Click **Finish**.
- 7 In the Package Explorer, highlight the project you just created.
- 8 Select **Management** → **User Defined Metrics**.

Connect to an MBean Server

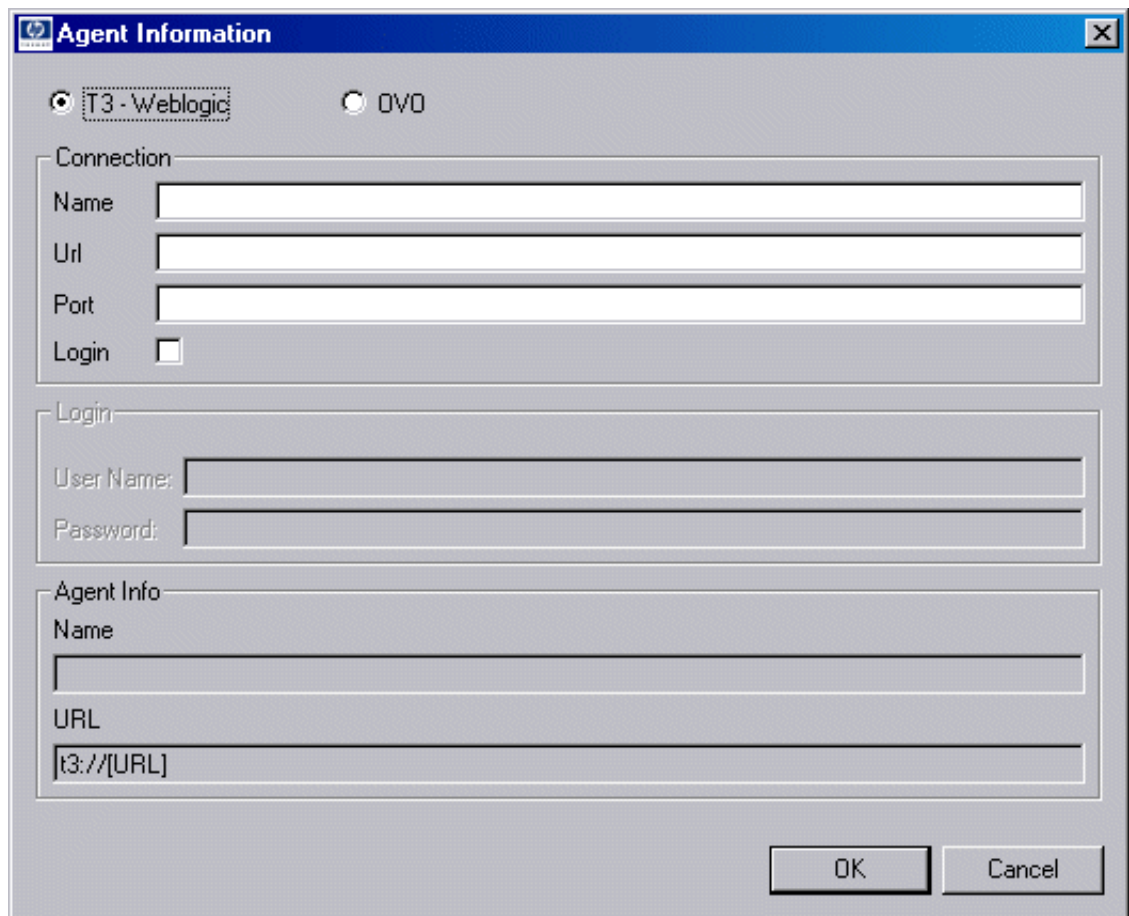
To specify the MBean server from which to obtain MBean data, do the following:

- 1 Configure the MBean server in the JMB Plug-in for Eclipse:
 - a Start the JMB Plug-in for Eclipse. Refer to [Start the JMB Plug-in for Eclipse](#) on page 13 for more information.
 - b Select **Window** → **Preferences**.
 - c From the Preferences window, open **JMX Metric Builder**.

- d Highlight **Agent Information**.



- e Click **Add**.



- f Enter the following information for each field:

Field	Configuration Property	Value to Enter
T3 - Weblogic or OVO	N/A	T3 - Weblogic
Name	ALIAS	Unique name for the WebLogic Server
Url	ADDRESS	The domain name or IP address where the WebLogic Server is listening
Port	PORT	The port on which the WebLogic Server is listening
Login checkbox	N/A	Select to enter the WebLogic Server login and password
User Name	LOGIN	The WebLogic administration user configured at installation or other user with appropriate permissions
Password	PASSWORD	The password for the user entered above

The configuration information is updated in the `<eclipse-home>/plugins/com.hp.openview.jmb.integ.bin_1.0.0/lib/ovojmxtool/plugins/com.hp.ovojmxtool_1.0.0/extapps/StandAloneWebLogicCollector/conf/SiteConfig` file (the password is encrypted in this file).

- g Click **OK**.
 - h Click **OK**.
- 2 Restart the JMB Plug-in for Eclipse.
- a Select **File** → **Exit**.
 - b Select **Management** → **User Defined Metrics**.

4 Integration with OVO

The following lists all the steps needed to successfully collect metrics from UDMs when using the JMB Plug-in for Eclipse. Unless otherwise noted, a detailed description of the steps performed by the OVO administrator can be found in the *HP OpenView Smart Plug-in User Defined Metrics User Guide*. If you have already installed and configured the JMB Plug-in for Eclipse software, start at [step 9](#).

On the OVO management server (completed by the OVO administrator):

- 1 Install the WLS-SPI.
- 2 Install the WASSPI-UDM-Bldr software bundle.
- 3 Install the JMX connector (optional).
- 4 Register custom MBeans (optional).
- 5 Configure the MBean server environment.
- 6 Complete additional configuration tasks.

On the development system(s) (completed by the system administrator or developer):

- 7 Install the JMB Plug-in for Eclipse and other required software. See [Installation](#) on page 9.
- 8 Configure the JMB Plug-in for Eclipse. See [Configuration](#) on page 13.
- 9 Develop and test UDMs. Refer to the online help and the *HP OpenView Smart Plug-in User Defined Metrics User Guide* for more information.
- 10 Generate templates. Select **Run** → **Policy Generation**. Refer to the online help for more information.

On the OVO management server (completed by the OVO administrator):

- 11 Copy the generated UDM and template files from the development system.
- 12 Deploy UDMs.
- 13 Create a UDM template group or assign the new template(s) to a template group (optional).
- 14 Distribute templates.
- 15 Disable/re-enable graphing.

On the OVO managed node (completed by the OVO or system administrator):

- 16 Verify that the `/var/opt/OV/bin/instrumentation` directory is defined in the PATH environment variable. If not, add it:

```
export PATH=$PATH:/var/opt/OV/bin/instrumentation
```

- 17 Verify the UDMs. Test one or more of the UDMs by running the following command:

```
wasspi_wls_perl -S wasspi_wls_ca -m <metric_id_number> -x print=on
```



If no data is returned, verify that you are using registered, JMX-compliant MBeans in your UDM. MBean data is collected differently on the OVO management server and the development system (an MBean that appears in the JMB Plug-in for Eclipse may not be available on the OVO management server).

5 Troubleshooting

Error Message

Message	The requested operation was not completed on “localagent” because a copy of the weblogic.jar file has not been placed in the <code><eclipse-home>/plugins/com.hp.openview.jmb.integ.bin_1.0.0/lib/ovojmxtool/plugins/com.hp.ovojmxtool_1.0.0/lib/</code> directory.
Action	Copy <code><weblogic-home>/weblogic81/server/lib/weblogic.jar</code> to <code><eclipse-home>/plugins/com.hp.openview.jmb.integ.bin_1.0.0/lib/ovojmxtool/plugins/com.hp.ovojmxtool_1.0.0/lib/</code> .

Log Files

Log File Name	What is Logged	Directory
<code>SpiEngineUserLog0.log</code>	Policy/Template generation errors	<code><eclipse-home>/plugins/com.hp.openview/jmb.integ.bin_1.0.0/lib/ovojmxtool/plugins/com.hp.ovojmxtool_1.0.0/extapps/SpiGeneratorEngine/</code>
<code>j2eeErrorlog</code>	Metric testing errors	<code><eclipse-home>/plugins/com.hp.openview/jmb.integ.bin_1.0.0/lib/ovojmxtool/plugins/com.hp.ovojmxtool_1.0.0/extapps/StandAloneWebLogicCollector/log/</code>
<code>.log</code>	All other errors related to the JMB	<code><project-folder>/UDM/.metadata/</code>

Known Problem

Problem: When testing a metric that uses multiple MBeans or formulas, the Test History displays the attribute/formula from the first entry in the MBeans or Calculations table for all results.

