



Sun GlassFish Enterprise Manager SNMP Monitoring 1.0 Installation and Quick Start Guide



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Getting Started with GlassFish SNMP Monitoring

GlassFish Enterprise Manager SNMP Monitoring provides SNMP support for Sun GlassFish™ Enterprise Server version 2.1. This feature uses the J2EE MIB to expose the Enterprise Server for monitoring by SNMP clients. The J2EE MIB is described in [Java Specification Request \(JSR\) 77](http://jcp.org/en/jsr/detail?id=77) (<http://jcp.org/en/jsr/detail?id=77>).

In this release, GlassFish Enterprise Manager SNMP Monitoring only supports SNMP versions 1 and 2 and does not support traps.

This *Installation and Quick Start Guide* explains how to install and use SNMP monitoring in the following sections:

- “Downloading SNMP Monitoring” on page 3
- “Installing SNMP Monitoring” on page 4
- “Accessing GlassFish SNMP Data Using `snmpwalk`” on page 5
- “Configuring GlassFish SNMP Monitoring” on page 7
- “GlassFish SNMP Tables” on page 9

For information for advanced users, see the *Sun GlassFish Enterprise Manager SNMP Monitoring 1.0 Reference*. For the latest GlassFish Enterprise Manager SNMP Monitoring updates, see the *Sun GlassFish Enterprise Manager SNMP Monitoring 1.0 Release Notes*. See also the documentation set for Sun GlassFish Enterprise Server (<http://docs.sun.com/coll/1343.6>).

Downloading SNMP Monitoring

SNMP monitoring is available for download to Sun customers with any of these entitlements:

- Sun GlassFish Enterprise Server
- Sun GlassFish Enterprise Server Unlimited Offering
- Sun GlassFish Enterprise Suite (Gold or Platinum Support levels only)
- Sun GlassFish Enterprise Suite Unlimited Offering

- Sun Java Application Platform Suite
- Sun Java Enterprise System
- Sun Java Web Infrastructure Suite
- Sun Web Space Server

To download this component, follow these steps:

1. Go to the SunSolve site at <http://sunsolve.sun.com/>.
2. Click on the Accept button to accept the SunSolve license agreement.
3. Click on the Login link in the right column and enter your support username and password.
4. Click on the Patches and Updates link in the right column.
5. Enter the SNMP Monitoring patch number, 140750-01, in the PatchFinder field and click on the Find Patch button.
6. Click on the HTTP link next to Download Patch.
A file named 140750-01.zip is copied to your machine.
7. Unzip the 140750-01.zip file. For example:

```
unzip 140750-01.zip
```

When you unzip the file, an `snmp-monitoring` directory is created within the current directory. This new directory contains the `__assnmp.war` file.

Note – Do not rename the `__assnmp.war` file.

Installing SNMP Monitoring

To install SNMP monitoring, deploy the `__assnmp.war` file as you would any other web application.

You can use the `asadmin deploy` command. For example:

```
asadmin deploy __assnmp.war
```

For more information about the `asadmin deploy` command, see the *Sun GlassFish Enterprise Server 2.1 Reference Manual*.

To use the Admin Console, follow these steps:

1. Open the Applications component.
2. Go to the Web Applications page.
3. Click on the Deploy button.
4. Next to **Location:**, make sure that **Packaged file to be uploaded to the server** is selected.

5. Enter the location of the `__assnmp.war` file in the **Location:** field, or use the **Browse...** button to locate it.
6. If you have installed the cluster or enterprise profile and are deploying to a cluster or multiple server instances, go to **Targets** at the bottom of the page and select targets.
7. Select the **OK** button.

For more information about using SNMP monitoring with clusters, see the *Sun GlassFish Enterprise Manager SNMP Monitoring 1.0 Reference*.

Accessing GlassFish SNMP Data Using snmpwalk

The `snmpwalk` command is one of the standard ways of accessing SNMP data. Any basic SNMP reference on the Internet or in print includes information about using `snmpwalk`. On the Solaris operating system, the `snmpwalk` command is available in the `/usr/sbin` directory. For other platforms, consult the documentation for your operating system.

To make sure that SNMP monitoring is properly installed, use the following `snmpwalk` command. If you are using a remote machine, substitute the machine name for `localhost`. Note that the default port is `10161`. To change the port, see “[Changing the SNMP Port Number](#)” on page 8.

```
snmpwalk -c public -v 1 localhost:10161 1.3.6.1.4.1.42.2.9999.1.1.1.1.2
```

The output of this command looks like this:

```
SNMPv2-SMI::enterprises.42.2.9999.1.1.1.1.2.1.2.1.1 = STRING: "name=server"
SNMPv2-SMI::enterprises.42.2.9999.1.1.1.1.2.1.3.1.1 = OID: SNMPv2-SMI::enterprises.42
SNMPv2-SMI::enterprises.42.2.9999.1.1.1.1.2.1.5.1.1 = STRING: "Sun Microsystems, Inc."
SNMPv2-SMI::enterprises.42.2.9999.1.1.1.1.2.1.6.1.1 = STRING: "Sun GlassFish Enterprise Server v2.1"
SNMPv2-SMI::enterprises.42.2.9999.1.1.1.1.2.1.7.1.1 = INTEGER: 1
SNMPv2-SMI::enterprises.42.2.9999.1.1.1.1.2.1.8.1.1 = INTEGER: 1
SNMPv2-SMI::enterprises.42.2.9999.1.1.1.1.2.1.9.1.1 = INTEGER: 2
SNMPv2-SMI::enterprises.42.2.9999.1.1.1.1.2.1.10.1.1 = INTEGER: 4
SNMPv2-SMI::enterprises.42.2.9999.1.1.1.1.2.1.11.1.1 = STRING: "Fri Dec 19 09:37:27 PST 2008"
```

To generate more human-readable output, use the `J2EE-MIB` file, available at <http://java.sun.com/j2ee/tools/management/downloads/index.html>. Make sure this file is located in the directory from which you are running `snmpwalk`. You can then use the following `snmpwalk` command to view GlassFish SNMP data:

```
snmpwalk -c public -v 1 -m ./J2EE-MIB localhost:10161 J2EE-MIB::j2eeSrvTable
```

If you have just installed the Enterprise Server and have only one server instance, the output of this command looks like this:

```
J2EE-MIB::j2eeSrvMoName.1.1 = STRING: "name=server"
J2EE-MIB::j2eeSrvEnterprise.1.1 = OID: J2EE-MIB::sun
J2EE-MIB::j2eeSrvVendor.1.1 = STRING: Sun Microsystems, Inc.
J2EE-MIB::j2eeSrvVersion.1.1 = STRING: Sun GlassFish Enterprise Server v2.1
J2EE-MIB::j2eeSrvMoStateManaged.1.1 = INTEGER: true(1)
J2EE-MIB::j2eeSrvMoStatProv.1.1 = INTEGER: true(1)
J2EE-MIB::j2eeSrvMoEventProv.1.1 = INTEGER: false(2)
J2EE-MIB::j2eeSrvSMState.1.1 = INTEGER: running(4)
J2EE-MIB::j2eeSrvSMStartTime.1.1 = STRING: "Fri Dec 19 09:40:21 PST 2008"
```

If you have a more complex setup that includes clusters, the output of this command looks more like this:

```
J2EE-MIB::j2eeSrvMoName.1.1 = STRING: "cluster=cl1,name=cl1_ins1"
J2EE-MIB::j2eeSrvMoName.1.2 = STRING: "name=sa_ins3"
J2EE-MIB::j2eeSrvMoName.1.3 = STRING: "name=server"
J2EE-MIB::j2eeSrvMoName.1.4 = STRING: "cluster=cl1,name=cl1_ins2"
J2EE-MIB::j2eeSrvEnterprise.1.1 = OID: J2EE-MIB::sun
J2EE-MIB::j2eeSrvEnterprise.1.2 = OID: J2EE-MIB::sun
J2EE-MIB::j2eeSrvEnterprise.1.3 = OID: J2EE-MIB::sun
J2EE-MIB::j2eeSrvEnterprise.1.4 = OID: J2EE-MIB::sun
J2EE-MIB::j2eeSrvVendor.1.1 = STRING: Sun Microsystems, Inc.
J2EE-MIB::j2eeSrvVendor.1.2 = STRING: Sun Microsystems, Inc.
J2EE-MIB::j2eeSrvVendor.1.3 = STRING: Sun Microsystems, Inc.
J2EE-MIB::j2eeSrvVendor.1.4 = STRING: Sun Microsystems, Inc.
J2EE-MIB::j2eeSrvVersion.1.1 = STRING: Sun GlassFish Enterprise Server v2.1
J2EE-MIB::j2eeSrvVersion.1.2 = STRING: Sun GlassFish Enterprise Server v2.1
J2EE-MIB::j2eeSrvVersion.1.3 = STRING: Sun GlassFish Enterprise Server v2.1
J2EE-MIB::j2eeSrvVersion.1.4 = STRING: Sun GlassFish Enterprise Server v2.1
J2EE-MIB::j2eeSrvMoStateManaged.1.1 = INTEGER: true(1)
J2EE-MIB::j2eeSrvMoStateManaged.1.2 = INTEGER: true(1)
J2EE-MIB::j2eeSrvMoStateManaged.1.3 = INTEGER: true(1)
J2EE-MIB::j2eeSrvMoStateManaged.1.4 = INTEGER: true(1)
J2EE-MIB::j2eeSrvMoStatProv.1.1 = INTEGER: true(1)
J2EE-MIB::j2eeSrvMoStatProv.1.2 = INTEGER: true(1)
J2EE-MIB::j2eeSrvMoStatProv.1.3 = INTEGER: true(1)
J2EE-MIB::j2eeSrvMoStatProv.1.4 = INTEGER: true(1)
J2EE-MIB::j2eeSrvMoEventProv.1.1 = INTEGER: false(2)
J2EE-MIB::j2eeSrvMoEventProv.1.2 = INTEGER: false(2)
J2EE-MIB::j2eeSrvMoEventProv.1.3 = INTEGER: false(2)
J2EE-MIB::j2eeSrvMoEventProv.1.4 = INTEGER: false(2)
J2EE-MIB::j2eeSrvSMState.1.1 = INTEGER: running(4)
J2EE-MIB::j2eeSrvSMState.1.2 = INTEGER: stopped(3)
J2EE-MIB::j2eeSrvSMState.1.3 = INTEGER: running(4)
J2EE-MIB::j2eeSrvSMState.1.4 = INTEGER: running(4)
J2EE-MIB::j2eeSrvSMStartTime.1.1 = STRING: "Fri Dec 19 14:25:20 MET 2008"
J2EE-MIB::j2eeSrvSMStartTime.1.2 = STRING: "NOT_APPLICABLE"
J2EE-MIB::j2eeSrvSMStartTime.1.3 = STRING: "Fri Dec 19 13:47:44 MET 2008"
J2EE-MIB::j2eeSrvSMStartTime.1.4 = STRING: "Fri Dec 19 14:25:21 MET 2008"
```

The GlassFish SNMP data varies according to the applications and resources deployed. Monitoring levels also affect the GlassFish SNMP data; see [“Changing Monitoring Levels” on page 7](#).

For a summary of the SNMP tables supported in the Enterprise Server, see [“GlassFish SNMP Tables” on page 9](#). For a complete listing of the GlassFish SNMP data you can access, see the *Sun GlassFish Enterprise Manager SNMP Monitoring 1.0 Reference*.

Configuring GlassFish SNMP Monitoring

You can change the configuration of SNMP monitoring in the following ways:

- [“Changing Monitoring Levels” on page 7](#)
- [“Changing the SNMP Port Number” on page 8](#)
- [“Changing the SNMP Logging Level” on page 8](#)

Changing Monitoring Levels

Set Enterprise Server monitoring levels to get accessible GlassFish SNMP data as follows:

- Set web container monitoring to HIGH to get all `j2eeServletStatTable` data.
- Set EJB container monitoring to HIGH to get all `j2eeEjbEntityStatTable`, `j2eeEjbStatelessStatTable`, `j2eeEjbStatefulStatTable`, and `j2eeEjbMessageDrivenStatTable` data.
- Set transaction service monitoring to HIGH to get all `j2eeJtaStatTable` data.
- Set connector connection pool monitoring to HIGH to get all `j2eeJcaConPoolStatTable` data.
- Set JDBC connection pool monitoring to HIGH to get all `j2eeJDBCConPoolStatTable` data.

All `j2eeJVMStatTable` data is always displayed regardless of the JVM monitoring setting.

Use the following `asadmin set` commands to set monitoring levels. Substitute the name of the configuration for `server-config`. For example:

```
asadmin set server-config.monitoring-service.module-monitoring-levels.web-container=HIGH
asadmin set server-config.monitoring-service.module-monitoring-levels.ejb-container=HIGH
asadmin set server-config.monitoring-service.module-monitoring-levels.transaction-service=HIGH
asadmin set server-config.monitoring-service.module-monitoring-levels.connector-connection-pool=HIGH
asadmin set server-config.monitoring-service.module-monitoring-levels.jdbc-connection-pool=HIGH
asadmin set server-config.monitoring-service.module-monitoring-levels.jvm=HIGH
```

For more information about the `asadmin set` command, see the *Sun GlassFish Enterprise Server 2.1 Reference Manual*.

To use the Admin Console, follow these steps:

1. Go to the Monitoring page for your configuration.
2. Change the value to HIGH in the drop-down list for any or all of the following settings:
 - JVM
 - Transaction Service
 - JMS/Connector Service
 - Web Container
 - EJB Container
 - JDBC Connection Pool
3. Select the **Save** button.

Changing the SNMP Port Number

The default SNMP port is 10161. To change this port, use the `asadmin set` command. Substitute the name of the server instance for `server`. For example:

```
asadmin set server.property.snmp-adapter-port=10165
```

You must restart the server for the port change to take effect. You can use the following `asadmin` commands. Once again, substitute the name of the server instance for `server`.

```
asadmin stop-instance server
asadmin start-instance server
```

For more information about the `asadmin set`, `asadmin stop-instance`, and `asadmin start-instance` commands, see the [Sun GlassFish Enterprise Server 2.1 Reference Manual](#).

Changing the SNMP Logging Level

SNMP monitoring logs its messages to the Enterprise Server log file, `server.log`. This component uses three loggers:

- `javax.enterprise.system.tools.admin.snmp`
- `javax.enterprise.system.tools.admin.snmp.adapter`
- `javax.enterprise.system.tools.admin.snmp.genericmediation`

Use the following `asadmin set` commands to set log levels for these loggers. Substitute the name of the server instance for `server`. For example, on a Solaris or Linux installation you would specify commands like the following:

```
asadmin set
server.log-service.module-log-levels.property.javax\enterprise\system\tools\admin\snmp=WARNING
```



```
asadmin set  
server.log-service.module-log-levels.property.javax\\.enterprise\\.system\\.tools\\.admin\\.snmp\\.  
adapter=INFO
```

```
asadmin set  
server.log-service.module-log-levels.property.javax\\.enterprise\\.system\\.tools\\.admin\\.snmp\\.  
genericmediation=FINE
```

Note – On a Windows system, use a single backslash (\) as an escape character, not a double backslash (\\).

For more information about the `asadmin set` command, see the *Sun GlassFish Enterprise Server 2.1 Reference Manual*.

GlassFish SNMP Tables

The tables accessible through SNMP monitoring are summarized in this section. For detailed information, see the *Sun GlassFish Enterprise Manager SNMP Monitoring 1.0 Reference*.

SNMP Tables Mapped in Sun GlassFish Enterprise Server

- j2eeObject Tables
 - j2eeDomTable
 - j2eeSrvTable
 - j2eeJVMTTable
 - j2eeAppTable
 - j2eeModTable
 - j2eeBeanTable
 - j2eeSletTable
 - j2eeAdapTable
 - j2eeRsrcTable
 - j2eeJCATable
 - j2eeJDBCTable

- j2eeStatistics Tables
 - j2eeServletStatTable
 - j2eeEjbEntityStatTable
 - j2eeEjbStatelessStatTable
 - j2eeEjbStatefulStatTable
 - j2eeMessageDrivenStatTable
 - j2eeJtaStatTable
 - j2eeJcaConnPoolStatTable
 - j2eeJDBCConnPoolStatTable
 - j2eeJVMSStatTable

SNMP Tables Not Mapped in Sun GlassFish Enterprise Server

- j2eeStatistics Tables
 - j2eeJavaMailStatTable
 - j2eeJcaConnStatTable
 - j2eeJDBCConnStatTable
 - j2eeJmsConnSessionStatTable
 - j2eeJmsConnConsumerStatTable
 - j2eeJmsConnProducerStatTable