

Oracle® Enterprise Manager

System Monitoring Plug-in Installation Guide for Sybase Adaptive Server Enterprise (ASE)

Release 6 (1.0.1.0.0)

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This document provides a brief description about the Oracle System Monitoring Plug-in for Sybase Adaptive Server Enterprise, 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.

Description

The System Monitoring Plug-in for Sybase Adaptive Server Enterprise extends Oracle Enterprise Manager Grid Control to add support for managing Sybase Adaptive Server instances. By deploying the plug-in within your Grid Control environment, you gain the following management features:

- Monitor Sybase Adaptive Server instances.
- Gather configuration data and track configuration changes for Sybase Adaptive Server instances.
- Raise alerts and violations based on thresholds set on monitored metrics and configuration data.
- Provide rich out-of-box reports based on the gathered data.
- Support monitoring by a remote agent. For remote monitoring, the agent need not be on the same host as the Sybase Adaptive Server.

Versions Supported

This plug-in supports the following versions of products:

- Enterprise Manager Grid Control 10.2.0.1 or higher
- Oracle Management Agent 10.2.0.1 or higher for Windows
- Version 15.x or higher of Express (XE), Enterprise (EE), and Developer (DE) editions of Sybase Adaptive Server

Note: The system monitoring plug-in for Sybase Adaptive Server is not certified for monitoring Sybase Adaptive Server Clusters. For more information, refer to the known issues described in the *Oracle Enterprise Manager System Monitoring Plug-in Troubleshooting Guide* available at:

<http://www.oracle.com/technology/documentation/oem.html>

Prerequisites

The following prerequisites must be met before you can deploy the plug-in:

- Sybase Adaptive Server Enterprise version 15.x or higher is installed.
- The following components of Oracle Enterprise Manager Grid Control are installed and running:
 - Oracle Enterprise Manager Grid Control 10.2.0.1 or higher
 - Oracle Management agent for Windows 10.2.0.1 or higher

You can install the agent on the same computer as Sybase Adaptive Server (referred to as local agent monitoring), or you can install the agent on a different computer from Sybase Adaptive Server (referred to as remote agent monitoring).

- Preferred credentials are set on all agents where you want to deploy the plug-in.
- The MDA tables must be installed before they can be queried. The MDA tables only exist on 12.5.0.3 and higher. To install MDA tables, do the following:

1. Ensure that the configuration parameter `enable cis` is set to 1. If not, restart ASE. Run the following command:

```
sp_configure 'enable cis', 1
go
```

2. Add 'loopback' server name alias (assuming @@servername is also defined in the interfaces file). This step is no longer required in 15.0 ESD#2 or later.

```
use master
go
sp_addserver loopback, null, @@servername
go
```

3. Test this configuration. This step is no longer required in 15.0 ESD#2 or later.

```
set cis_rpc_handling on
go
```

Alternatively, run the following command and then disconnect and reconnect your session:

```
sp_configure 'cis rpc handling', 1
exec loopback...sp_who -- note: 3 dots!
go
```

4. Install the MDA tables. Do not run this script with 'sqsh' as it will cause errors. 'sqsh' sees a '\$' as the start of a sqsh variable, and this distorts the native RPC names, since these start with a '\$' as well. Instead, either use 'isql' as below, or run 'sqsh' with the '-Lexpand=0' option to disable sqsh variable expansion feature. For ASE 15.0.2 and higher, this script is included in the installmaster.

```
isql -U sa -P yourpassword -S YOURSERVER \
-i $SYBASE/$SYBASE_ASE/scripts/installmontables
```

5. Assign `mon_role` to logins allowed MDA access. This also applies to the 'sa' login.

```
use master
go
grant role mon_role to sa
go
```

6. Test basic MDA configuration as follows. You may need to disconnect and reconnect to activate `mon_role` when you grant this role to the login you are currently using.

```
select * from master..monState
go
```

7. Enable all configuration parameters. These are all dynamic (except the per object statistics active parameter). For all 'pipe' tables, the number of messages is set to 100 here, but you can choose a larger size.

```
sp_configure "enable monitoring", 1
go
sp_configure "sql text pipe active", 1
go
sp_configure "sql text pipe max messages", 100
go
sp_configure "plan text pipe active", 1
go
sp_configure "plan text pipe max messages", 100
go
sp_configure "statement pipe active", 1
go
sp_configure "statement pipe max messages", 100
go
sp_configure "errorlog pipe active", 1
go
sp_configure "errorlog pipe max messages", 100
go
sp_configure "deadlock pipe active", 1
go
sp_configure "deadlock pipe max messages", 100
go
sp_configure "wait event timing", 1
go
sp_configure "process wait events", 1
go
sp_configure "object lockwait timing", 1
go
sp_configure "SQL batch capture", 1
go
sp_configure "statement statistics active", 1
go
sp_configure "per object statistics active", 1
go
```

8. For ASE 15.0.2, also run the following command:

```
sp_configure "enable stmt cache monitoring", 1
go
```

9. Set the following static parameter to a higher value (the setting is in bytes per user connection) if you're expecting a lot of (or long) SQL batches:

```
sp_configure "max SQL text monitored", 2048
go
```

Note: Enabling the following configuration parameters will result in >5% performance overhead:

```
sp_configure "sql text pipe active", 1
sp_configure "sql text pipe max messages", 100
sp_configure "max SQL text monitored", 2048
sp_configure "plan text pipe active", 1
sp_configure "plan text pipe max messages", 100
sp_configure "statement pipe active", 1
sp_configure "statement pipe max messages", 100
sp_configure "statement statistics active", 1
sp_configure "per object statistics active", 1
```

Configuring Sybase Adaptive Server for Monitoring

To monitor the Sybase Adaptive Server target using Enterprise Manager, the Sybase Adaptive Server user must have the role `mon_role`. In addition to `mon_role` permissions, the monitoring user must also have Select permissions to access the following sys tables:

- `syslisteners`
- `sysloginroles`
- `sysssrvroles`

The following commands will grant Select permission to the monitoring user:

```
grant select on syslisteners to public
go
grant select on sysloginroles to public
go
grant select on sysssrvroles (name, srid) to public
go
```

The above steps will give Select permission to all existing users in the database. To grant Select permission to only the monitoring user, referred to as `monuser` below, run the following commands. To execute these commands, the user must have `sa_role` permissions.

1. Create a group.

```
sp_addgroup OracleEMGroup
go
```

2. Add the user `monuser` to the group.

```
sp_adduser monuser, null, OracleEMGroup
go
```

3. Grant Select permission on the tables to `OracleEMGroup`.

```
grant select on syslisteners to OracleEMGroup
go
```

```
grant select on sysloginroles to OracleEMGroup
go
grant select on sysssrvroles (name, srid) to OracleEMGroup
go
```

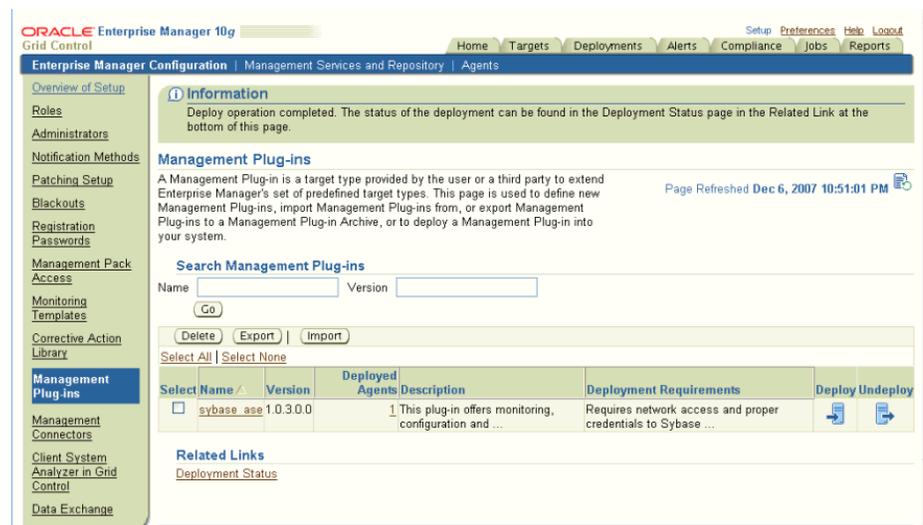
Deploying the Plug-in

After you ensure that the prerequisites are met, follow these steps to deploy the plug-in:

1. Download the Sybase Adaptive Server Plug-in archive to your desktop or computer on which the browser is launched. You can download the archive from the Oracle Technology Network (OTN).
2. Log into Enterprise Manager Grid Control as a Super Administrator.
3. Click the **Setup** link in the upper right corner of the Grid Control Home page, then click the **Management Plug-ins** link on the left side of the Setup page.

Figure 1 shows the Management Plug-ins page.

Figure 1 Management Plug-ins Deployment Page



4. Click **Import**.
5. Click **Browse** and select the plug-in archive.
6. Click **List Archive**.
7. Select the plug-in and click **OK**.
8. Verify that you have set preferred credentials on all agents where you want to deploy the plug-in.
9. In the Management Plug-ins page, click the icon in the **Deploy** column for the Sybase Adaptive Server plug-in. The Deploy Management Plug-in wizard appears.

10. Click **Add Agents**, then select one or more agents to which you want to deploy the plug-in. The wizard reappears and displays the agent you selected.

11. Click **Next**, then click **Finish**.

If you see an error message stating that the preferred credential is not set up, go to the Preferences page and add the preferred credentials for the Agent target type.

12. To check the deployment status, go to Related Links and click the link **Deployment Status**.

Setting up the JDBC Driver

Following are the steps to set up jConnect for the Sybase Adaptive Server plugin:

1. Download the jConnect JDBC driver version 6.0 from www.sybase.com.
2. Create a `jdbcdriver` directory under `agent/sysman/` and place the `jConn3.jar` file in that directory.
3. Add the location of the driver `.jar` file to the `classpath.lst` file under the `$ORACLE_HOME/sysman/config` directory.
4. If the agent is installed on a system that is part of an OS cluster, you need to edit the `classpath.lst` file under the `$ORACLE_HOME/<node_name>/sysman/config` directory, where `node_name` is the name of the clustered node where the agent is running.

If the `classpath.lst` file does not exist, create the file. For example, the `classpath.lst` file in a UNIX environment might appear as shown in the following example:

```
/home/usera/agent/sysman/jdbcdriver/sybase/jConn3.jar
```

TCP/IP Port Information

The following sections provide information you require to enable the TCP/IP port and to find the TCP/IP port for a particular Sybase Adaptive Server instance.

Enabling TCP/IP Port

For all editions of Sybase Adaptive Server

1. From the **Sybase Adaptive Server Configuration Manager**, select **Sybase Adaptive Server Network Configuration** in the left panel and navigate to the Sybase Adaptive Server instance.

The right panel displays all protocols for the specified Sybase Adaptive Server instance and their status.

2. Ensure that TCP/IP is enabled.
3. (If TCP/IP is disabled), right-click **TCP/IP** and select **Properties**. The TCP/IP Properties dialog box appears.
4. In the Protocol tab, select **enabled**, and click **Apply**.

- Restart the Sybase Adaptive Server instance.

Finding TCP/IP Port

To find the TCP/IP port number for a particular Sybase Adaptive Server instance, run the following query:

```
Select address_info from syslisteners
```

The above query returns the host address followed by the port number.

Adding Instances for Monitoring

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

- From the Agent home page where the plug-in was deployed, select the Sybase Adaptive Server target type from the **Add** drop-down list, then click **Go**. The Add Sybase Adaptive Server page appears as shown in [Figure 2](#).

Figure 2 Configuration Properties Page

The screenshot shows the 'Add Sybase Adaptive Server Enterprise' configuration page in Oracle Enterprise Manager 10g. The page is titled 'Add Sybase Adaptive Server Enterprise' and has a 'Test Connection' button. The 'Properties' section includes a 'Name' field with the value 'Sybase' and a 'Type' dropdown set to 'Sybase Adaptive Server Enterprise'. Below this is a table with columns 'Name' and 'Value':

Name	Value
JDBC URL	jdbc:sybase:Tds:stmp2.idc.oracle.com:4100
JDBC Driver	com.sybase.jdbc3.jdbc.SybDriver
Database Username	***
Database Password	*****

The 'Monitoring' section states: 'Oracle has automatically enabled monitoring for this target's availability and performance, so no further monitoring configuration is necessary. You can edit the metric thresholds from the target's homepage.' At the bottom, there are navigation links: Home | Targets | Deployments | Alerts | Compliance | Jobs | Reports | Setup | Preferences | Help | Logout. A copyright notice is also present: 'Copyright © 1996, 2007, Oracle. All rights reserved. Oracle, JD Edwards, PeopleSoft, and Retek are registered trademarks of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners. About Oracle Enterprise Manager'.

- Provide the following information for the properties:
 - Name** — Unique target name across all the Grid Control targets, such as SybaseServer_Hostname. This is the display name in the Grid Control. It represents this Sybase Adaptive Server target across all user interfaces within Grid Control.
 - JDBC URL** — Provide the URL in the format
jdbc:sybase:Tds:<system>:<tcp/ip port>
For example, jdbc:sybase:Tds:stmpi2.idc.oracle.com:5000
 - JDBC Driver** — Optional parameter. Provide this value in the format
com.sybase.jdbc3.jdbc.SybDriver
 - Database Username** — Valid user for the database in mon_role.
 - Password for the Database User** — Corresponding password for the database user

3. Click Test Connection to make sure the parameters you entered are correct.
4. Reenter the encrypted parameters from step 2 if the connection test was successful, then click **OK**.

Important: If you do not reenter the encrypted parameters before clicking **OK**, you might encounter an error suggesting that the login failed.

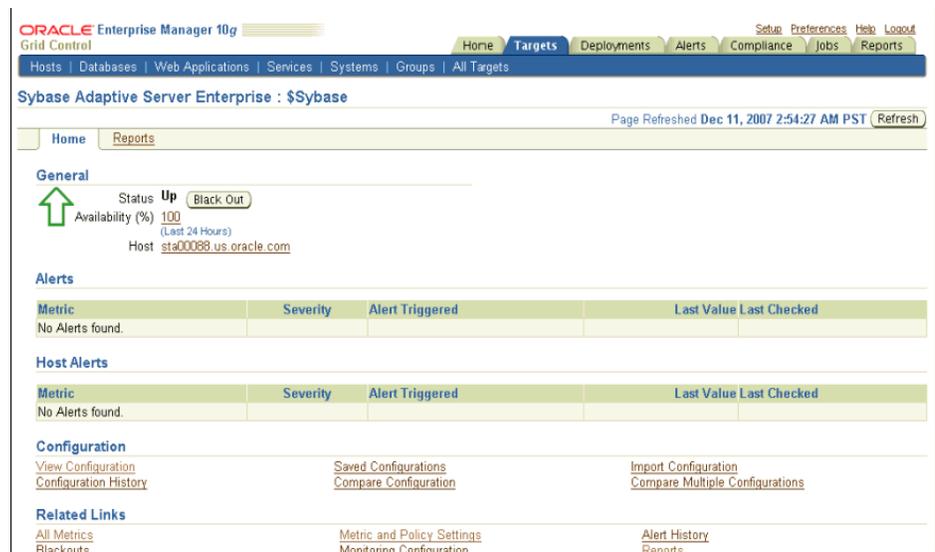
After you deploy and configure the plug-in to monitor one or more targets in the environment, you can customize the monitoring settings of the plug-in. This alters the collection intervals and threshold settings of the metrics to meet the particular needs of your environment. If you decide to disable one or more metric collections, this could impact the reports that the metric is a part of.

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:

1. Click the Sybase Adaptive Server target link from the Agent home page Monitored Targets table. The Sybase Adaptive Server home page appears.
The Sybase Adaptive Server home page appears as shown in [Figure 3](#).

Figure 3 Sybase Adaptive Server Home Page



2. Verify that no metric collection errors are reported in the Metrics table.
3. Ensure that reports can be seen and no errors are reported by clicking the **Reports** property page.
4. Ensure that configuration data can be seen by clicking the **View Configuration** link in the Configuration section. If configuration data does not immediately appear, click **Refresh** in the View Configuration page.

Undeploying the Plug-in

Follow these steps to undeploy the plug-in from an agent:

1. Log in to Enterprise Manager Grid Control as a Super Administrator.
2. Select the **Targets** tab, then the **All Targets** subtab. The All Targets page appears.
3. Select the Sybase Adaptive Server Plug-in target and click **Remove**. You must do this step for all targets of the plug-in.
4. Make sure that the preferred credentials are set on the agents where the plug-in is deployed.
5. Click the **Setup** link in the upper right corner of the All Targets page, then click the Management Plug-ins link on the left side of the Setup page. The Management Plug-ins page appears.
6. Click the icon in the **Undeploy** column for the Sybase Adaptive Server Plug-in. The Undeploy Management Plug-in page appears.
7. Check all the agents that are currently deployed with the Sybase Adaptive Server Plug-in and click **OK**.

You must undeploy the plug-in from every agent in the system to completely remove it from the enterprise.

8. Select the Sybase Adaptive Server Plug-in on the Management Plug-in page and click **Delete**.

Troubleshooting the Plug-In

If the following parameters are not enabled for the Sybase Adaptive Server plug-in, metric collection errors may occur:

```
sp_configure "sql text pipe active", 1
sp_configure "sql text pipe max messages", 100
sp_configure "max SQL text monitored", 2048
sp_configure "plan text pipe active", 1
sp_configure "plan text pipe max messages", 100
sp_configure "statement pipe active", 1
sp_configure "statement pipe max messages", 100
sp_configure "statement statistics active", 1
sp_configure "per object statistics active", 1
```

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