Oracle® Enterprise Manager

System Monitoring Plug-in Installation Guide for EMC Symmetrix DMX System

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This document provides a brief description about the Oracle System Monitoring Plug-in for EMC Symmetrix DMX System, 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 and the known issues.

For information about setting the metric threshold, on the EMC Symmetrix DMX System plug-in Home page, click the Metrics and Policy Settings link in the Related Links section and then access the online help.

For information about using configuration utilities, on the EMC Symmetrix DMX System plug-in Home page, click any of the links in the Configuration section and then access the online help.

Description

The System Monitoring Plug-in for EMC Symmetrix DMX System extends Oracle Enterprise Manager Grid Control to add support for monitoring EMC Symmetrix DMX System. By deploying the plug-in in your Grid Control environment, you gain the following management features:

- Monitor EMC Symmetrix DMX Systems.

- Gather storage configuration and performance information of various storage components.

- Raise alerts and violations based on thresholds set on monitored metrics and configuration data.

- Generate rich out-of-box reports based on the gathered data. For details of reports, see Reports.

- Monitor using a remote Agent. For remote monitoring, the Agent need not be on the same host as the EMC Symmetrix DMX System.

Versions Supported

This plug-in supports the following versions of products:

- Enterprise Manager Grid Control 10g Release 3 or higher Management Service

- Enterprise Manager Grid Control 10g Release 3 or higher Agent on Linux and Solaris

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> **Note:** The EMC Symmetrix DMX System Plug-in can only be
> deployed on Linux and Solaris, not Microsoft Windows. Refer to
> WebIV Note 465472.1 for the latest certification status on different
> platforms.

- EMC Solutions Enabler versions 6.4.x.x, 6.5.x.x, and 7.0.x.x

Prerequisites

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

- Oracle Enterprise Manager Grid Control 10*g* Release 3 or higher

- EMC Solutions Enabler version 6.4.x.x or 6.5.x.x or 7.0.x.x

- Oracle Management System (OMS) version 10.2.0.3 or higher with relevant
  patches

- An OS user is created, for example `symm_user`

- Ensure that the file `daemon_users` is available in the following install
  directory of SYM CLI:

  `/usr/emc/API/symapi/config/`

  > **Note:** If the `daemon_users` is not available,
  >
  > 1. Create the file `daemon_users` file in the SYMCLI install directory (for
  >   example `/opt/emc/SYMCLI/V6.2.1/storbin/stordaemon`).
  > 2. In the file, specify the following:
  >   *username* `storapid`, for example `symm_user storapid`
  > 3. Restart `stordaemon` by entering the following command:
  >   `./stordaemon start`

- (For Enterprise Manager 10.2.0.3) Patch 5844887 is applied on OMS to enable
  filtering of data in the reports

- (For Enterprise Manager 10.2.0.3) Patch 5842718 is applied on agent to enable
  the appearance of front-end adapter information along with Symmetrix
  Device.

- (For Enterprise Manager 10.2.0.3) Agent Patch 6269838 is applied on hosts
  that have EMC power path configured. You will need to apply this patch to
  view EMC power path devices in the database, ASM, and host mapping
  reports.

- To deploy and monitor EMC Symmetrix DMX System from Solaris 5.9/5.10,
  Patch 7005747 is applied to agent version 10.2.0.4.0 on Solaris 5.9 and 5.10.
  This patch enables the EMC Symmetrix DMX System plug-in to monitor all
  non-zero size slices of the Solaris host.

Deploying the Plug-in

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

1. Download the EMC Symmetrix DMX System 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 in to 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.

4. Click **Import**.

5. Click **Browse** and select the plug-in archive.

6. Click **List Archive**, which lists the plug-ins from the selected 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 EMC Symmetrix Storage System 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.

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:

1. From the Agent home page where the EMC Symmetrix DMX System Plug-in was deployed, select the **EMC Symmetrix DMX System** target type from the **Add** drop-down list, then click **Go**.

    The Add EMC Symmetrix DMX System page appears.

2. Provide the following information for the parameters:

    - **Name** — Name for the plug-in instance

    - **SYMCLI Location** — Install location of SYMCLI, for example `/usr/symcli`

    - **Symmetrix ID** — 12-digit Symmetrix ID

    - **SYMCLI Host User**— Name of the OS user enabled for executing SYMCLI commands, for example `symm_user`

    - **SYMCLI Host Password**— Password for the OS user

    - **(Optional) EMC Symmetrix Management Console URL**— The Symmetrix Management Console URL

> **Note:** When specifying the SYMCLI location, do not specify `bin` in the path name. The `bin` directory is appended when the PL scripts are run.

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**.

> **Note:** 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.

Managing the Plug-in

For security reasons, Oracle recommends that the SYSMAN account be used only as a template to create other accounts, and not used directly.

Therefore to manage the plug-in, you need to create roles and administrators, and then assign roles to administrators. This restricts the privileges that each user has, for example deleting the plug-in or accessing reports.

Follow the steps provided in this section to provide management rights to users.

1. As SYSMAN, log in to Enterprise Manager Grid Control.

2. Click **Setup.**

   The Setup page appears.

3. To create roles, click **Roles.** Click **Help** for assistance.

4. To create administrators, click **Administrator**. Click **Help** for assistance.

When the newly created administrator logs in, unlike SYSMAN, the administrator is restricted by the privileges set.

Example 1

Susan, the super administrator wants to let Maria view target database instance `sifsdb`.

When Maria accesses the reports, if privileges are not set for Maria to view database target, the rows for `sifsdb` will not be displayed in the report. Therefore, for Maria to view `sifsdb`, Susan has to set privileges as illustrated below:

1. Susan launches Enterprise Manager Grid Control and then in the Setup page, selects **Roles**.

2. She uses the Create Roles page to create a role for assigning to Maria.

3. In the Create Role Properties page, she specifies the name of the role as `Maria_Role`.

4. In the Create Role: Roles page, she chooses an existing role for Maria.

5. In the Create Roles System Privileges page, she chooses the system privileges for Maria.

6. In the Create Roles Targets page (Figure 1) Susan selects the target `sifsdb` from the list of Available Targets.

Figure 1   Select Targets
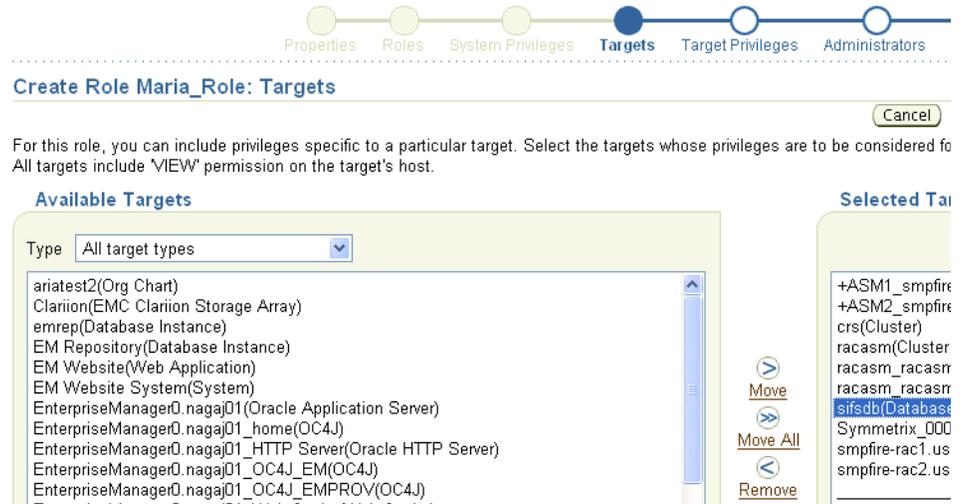
7. In the Create Role Target Privileges page (Figure 2) she selects `View` privileges for the role, so that Maria (when assigned with this role) has the rights to view the target.

Figure 2   Target Privileges
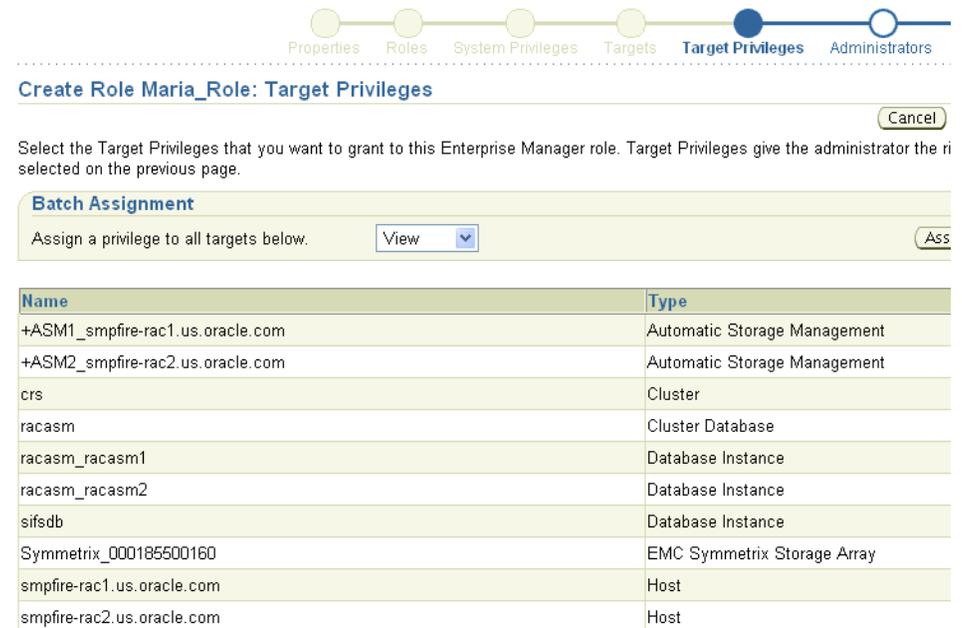
8. In the Create Role Administrator page (Figure 3) she grants Maria the role.

Figure 3   Create Role
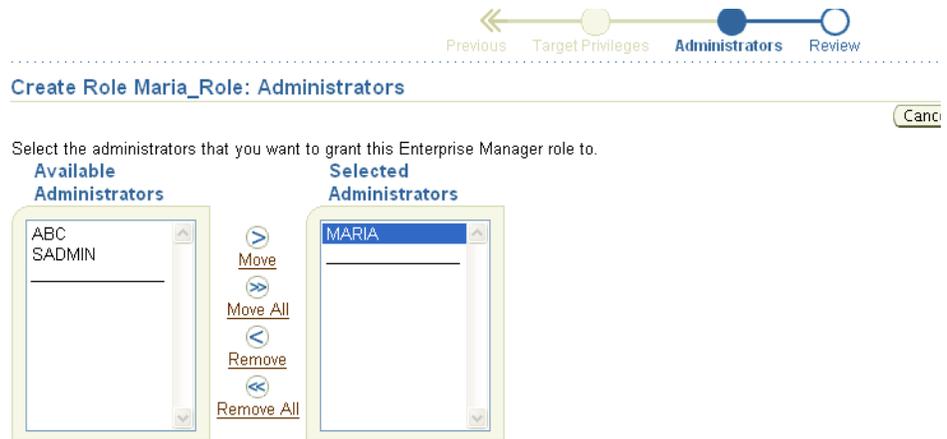
Verifying and Validating the Plug-in

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 EMC Symmetrix DMX System target link from the Agent home page Monitored Targets table.

   The EMC Symmetrix DMX System home page appears.

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 selecting 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 EMC Symmetrix DMX System 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 was 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 EMC Symmetrix DMX System Plug-in.

   The Undeploy Management Plug-in page appears.

7. Check all the Agents that are currently deployed with the EMC Symmetrix DMX System 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 EMC Symmetrix DMX System Plug-in on the Management Plug-ins page and click **Delete**.

Reports

This section provides details of the reports based on the storage configuration and performance information of various storage components gathered by the EMC Symmetrix DMX System Plug-in.

Table 1   Reports

Report	Description	Purpose
Configuration Summary	Displays the overall configuration sketch of the Symmetrix Array, the Front-end and Disk directors.	To get an overall picture of the Symmetrix Array and its directors.
Usage Summary	Provides the usage information of the Symmetrix storage system.	To get the overall storage capacity and allocation information along with the storage allocation for all databases, ASM instances, and hosts using this storage system
Database File and Storage Device Mapping	Provides the mapping to the database components such as tablespaces, datafiles, redologs, and ASM disk groups on storage devices.	To determine the location of tablespaces, datafiles, and redologs on storage devices.
Storage Device and Database File Mapping	Provides the mapping to storage devices, tablespaces, datafiles, and redologs that use the storage devices.	To determine the list of tablespaces, datafiles, and redologs from one or more databases that utilize storage devices.
Host File System and Storage Device Mapping	Provides the layout of the host file systems on the storage devices.	To determine the location of host file systems on storage devices.
ASM Disk Group and Storage Device Mapping	Provides the mapping to the ASM components such as disk groups and ASM disks on storage devices.	To determine the location of ASM components on storage devices.
Host Volume and Storage Device Mapping	Provides the mapping to the host volumes on the storage system.	To determine the location of the host volume on storage devices.
Storage Device and Host Volume Mapping	Provides the mapping to storage devices and the corresponding volumes on different hosts.	To determine the location of the storage devices and the corresponding volumes on different hosts.

Table 1 (Cont.) Reports

Report	Description	Purpose
Host Volume and Storage Device Performance Statistics	Provides the performance details of the storage device along with the mapping to the host volumes on the storage devices.	To review the performance of the storage device.
Front-end Director Performance Statistics	Provides the performance statistics for the Front-end Director collected over the last 24 hours.	To review the I/Os Per second, Reads Per second, Writes per second, and Read-Writes per second of front-end director.
Front-end Port Performance Statistics	Gives the performance statistics for the individual front-end director ports.	To view the snapshot of the performance based on the metric values for frequency of front-end port.
Disk Director Performance Statistics	Provides the performance statistics for the Back-end Director collected over the last 24 hours.	To review I/Os Per second, Reads Per second Writes per second, and Read-Writes per second of disk director.
Storage Device Performance Statistics	Provides the performance statistics for the storage devices collected over the last 24 hours.	To review Average Reads Per Second, Average Writes Per Second, Average KBs Read Per Second, and Average KBs Write Per Second of storage device.
Disk Performance Statistics	Provides the performance statistics for the physical disks collected over the last 24 hours. The graphs show the overall performance of the disks over the period of time for which the data is collected.	To review Average Reads Per Second, Average Writes Per Second, Average KBs Read Per Second, and Average KBs Write Per Second of disk.

Troubleshooting Scenarios

Metric Collection Errors

If you encounter metric collection errors, ensure that you have EMC Solutions Enabler 6.4.x.x or 6.5.x.x or 7.0.x.x running.

Known Issues

Mapping of ASM diskgroups created using disks discovered through ASMLib for example, `ORCL:*`, is not supported.

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