Oracle® Enteprise Manager

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

Release 12.1.0.2.0

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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 Cloud Control to add support for monitoring EMC Symmetrix DMX System. By deploying the plug-in in your Cloud 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 Cloud Control 12*c* Release 1 Management Service

- Enterprise Manager Cloud Control 12*c* Release 1 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, 6.5, and 7.0

Prerequisites

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

- Oracle Enterprise Manager Cloud Control 12*c* Release 1 or higher

- EMC Solutions Enabler version 6.4 or 6.5 or 7.0

- 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<daemon name>`
  >
  >   where daemon names are `storapid`, `storwatchd`, `storgnsd`

- (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 9/10, Patch 7005747 is applied to agent version 10.2.0.4.0 on Solaris 9 and 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

See the *Plug-in Manager* chapter in the *Oracle Enterprise Manager Cloud Control Administrator's Guide* for steps to deploy the plug-in:

http://docs.oracle.com/cd/E24628_01/doc.121/e24473/plugin_mngr.htm

Adding Instances for Monitoring

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

1. Log in to Enterprise Manager Cloud Control.

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

3. Select **Add Non-Host Targets by Specifying Target Monitoring Properties**. From the Target Type drop-down, select the **EMC Symmetrix DMX System** target type. Click **Add Manually**.

4. 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.

5. Click **Test Connection** to make sure the parameters you entered are correct.

6. Reenter the encrypted parameters from step 4 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

To manage the EMC Symmetrix DMX System 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.

To create a Role or Administrator account:

1. Log in to Enterprise Manager Cloud Control.

2. Click **Setup**, then **Security**. Select **Role** to create a role or **Administrator** to create an administrator account.

3. Enterprise Manager Cloud Control provides predefined accounts that you can use to customize an account. Select a name and click **Create Like** to begin. You will provide information for:

   - Properties: information about the account

   - Roles: select appropriate roles for the account from a list of available roles

   - Target Privileges: the target privileges you want to assign to the account

   - Resource Privileges: specific privileges to be explicitly granted on "all resources" level or individual resources to grant

   Once you enter the information on each page, a Review page provides a summary of your selections.

4. Enter Properties information:

   - For an Administrator account, enter:

     – Name

     – Password and Confirm Password

     – Select a Password Profile, and select the password options

     – E-mail address for the administrator

     – Description

   - For a user Role, enter:

     – Name

     – Description (optional)

   Once the information is complete, click **Next**.

5. On the Roles page, select one or more roles from the list of Available Roles. Click **Move** to add the role to the account.

   Once you have completed adding the appropriate role, click **Next**.

6. On the Target Privileges page, select the privileges you want to assign to the account. The privileges are applicable to all targets.

   Once you have completed adding the appropriate target privileges, click **Next**.

7. On the Resource Privileges, identify specific privileges to be explicitly granted on "all resources" level or individual resources to grant. Click the Manage Specific Grants edit icon to modify the privileges.

8. On the Review page, verify the information you entered is correct. Click **Finish** to create the account.

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

To undeploy the EMC Symmetrix DMX System Plug-in from an Agent:

1. Log in to Enterprise Manager Cloud Control as root.

2. Click **Setup**, then **Extensibility**, and finally **Plug-ins**.

3. Select the EMC Symmetrix DMX System Plug-in target and click **Undeploy From**. Select either **Management Servers** or **Management Agent**.

4. Confirm the plug-in removal. Enterprise Manager notifies the connected and relevant Enterprise Manager users and begins the de-configuration process.

For more information about plug-ins, see the *Plug-in Manager* chapter in the *Oracle Enterprise Manager Cloud Control Administrator's Guide*:

http://docs.oracle.com/cd/E24628_01/doc.121/e24473/plugin_mngr.htm

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.
Database Usage Summary	Provides the database usage information of the Symmetrix storage system.	To get information about the storage capacity used by the database.
ASM Usage Summary	Provides the ASM usage information of the Symmetrix storage system.	To get information about the storage capacity used by ASM instances.
Host Storage Usage Summary	Provides the host storage usage information of the Symmetrix storage system.	To get information about storage capacity used by hosts.
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.

Table 1   (Cont.) Reports

Report	Description	Purpose
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.
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 or 6.5x or 7.0 running.

Known Issues

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

Documentation Accessibility

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http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.