Oracle® Enterprise Manager

System Monitoring Plug-in Installation Guide for EMC CLARiiON System

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This document provides a brief description about the Oracle System Monitoring Plug-in for EMC CLARiiON 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 CLARiiON 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 CLARiiON 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 CLARiiON System extends Oracle Enterprise Manager Grid Control to add support for monitoring EMC CLARiiON System. By deploying the plug-in in your Grid Control environment, you can do the following:

- Monitor EMC CLARiiON Systems.

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

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

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

- Monitor using a remote Agent. For remote monitoring, the Agent does not need to be on the same computer as the EMC CLARiiON 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 CLARiiON 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.

Prerequisites

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

- Oracle Enterprise Manager Grid Control 10*g* Release 2 or higher system and Agent.

- EMC NaviCLI 6.14 and 6.19

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

- An operating system user is created, for example `oracle`

- The operating system user, for example oracle, is added to the agent.config file located at /etc/Navisphere/agent.config. For example:

  ```
  user oracle@hostname
  ```

- The username you use to log in to the current host is added to the security file. For example, to add yourself to the security file on the current host, given the alternative username altusername, the password mypass and the scope 0 (global scope), type:

  ```
  naviseccli -AddUserSecurity -password mypass -scope 0 -user altusername
  ```

  Where -AddUserSecurity directs the CLI to add user security information to the security file on this host, -password specifies the password for the username altusername and the agent must be configured for the user altusername, and -scope specifies whether the user account on the storage system you want to log in to is local or global. If no altusername is provided, the user currently logged in will be added as a naviseccli user, and the password provided in the above command must be of that user.

  > **Note:** To add a user to the security file, you must be logged in as oracle.

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

- (For Enterprise Manager 10.2.0.3) Patch 6113649 is applied on agent to enable the appearance of EMC CLARiiON 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 CLARiiON 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 CLARiiON 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 CLARiiON 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.

   Figure 1 shows the Management Plug-ins page.

Figure 1   Management Plugins Deployment 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 CLARiiON 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 CLARiiON System Plug-in was deployed, select the **EMC CLARiiON System** target type from the **Add** drop-down list, then click **Go**.

   The Add EMC CLARiiON System page appears as shown in Figure 2.

Figure 2   Configuration Properties Page

2. Provide the following information for the parameters:

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

   - **NavisecCLI Location** — Install location of naviseccli, for example `/opt/Navisphere`

   - **CLARiiON IP (SP A)** — IP address of storage processor A

   - **CLARiiON IP (SP B)**— IP address of storage processor B

   - **NaviCLI Host User**—Name of the operating stem user enabled for executing naviseccli commands, for example oracle

   - **NaviCLI Host Password**— Password for the operating system user

> **Note:** When specifying the NavisecCLI 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.

Configuring the Plug-in for SNMP Events

Follow these steps to configure a template to trigger notifications about SNMP events.

1. In the Navisphere utility, in the Monitors tab, right-click the Templates folder and select **Configuration Wizard**.

2. In the Event Monitor wizard, click **Next**.

3. In the Select Event Monitor Type screen, provide a name for the template and select Distributed Monitoring. Click **Next**.

4. In the Distributed Monitoring screen, select the storage systems to be monitored, and click **Next**.

5. In the Select Events by Category screen, select the events that will trigger a response, and click **Next**.

6. In the Select Events by Severity screen, select the events that will trigger a response, and click **Next**.

7. In the Select Response screen, select **Send SNMP Trap**, and click **Next**.

8. In the SNMP screen, in the SNMP Management Host field, provide the name of the host on which the Enterprise Manager agent is running separated by the port number, in the format:

   ```
   hostname:portnumber
   ```

   In the Community field, type Public. Click **Next**.

9. In the Summary screen, click **Finish**.

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 3) Susan selects the target sifsdb from the list of Available Targets.

Figure 3   Selecting Targets
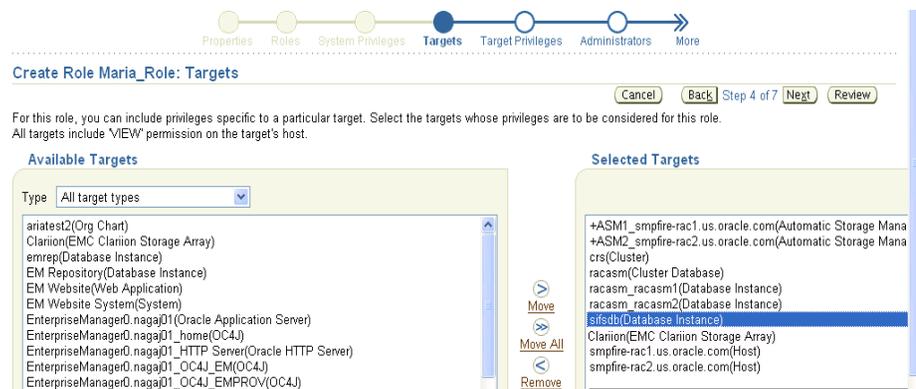
7. In the Create Role Target Privileges page (Figure 4) she selects View privileges for the role, so that Maria (when assigned with this role) has the rights to view the target.

Figure 4   Assigning View Privileges
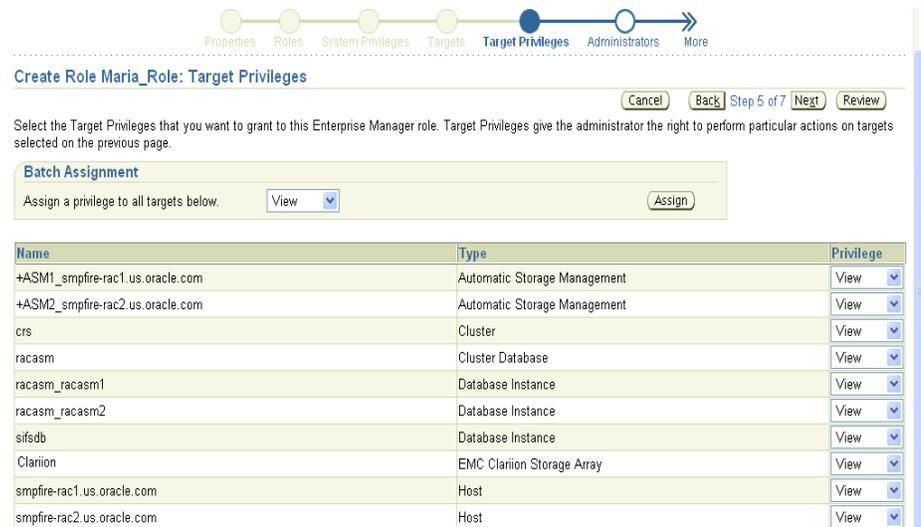
8. In the Create Role Administrator page (Figure 5) she grants Maria the role.

Figure 5   Granting 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 CLARiiON System target link from the Agent home page Monitored Targets table.

The EMC CLARiiON System home page appears as shown in Figure 6.

Figure 6   EMC CLARiiON System Home Page
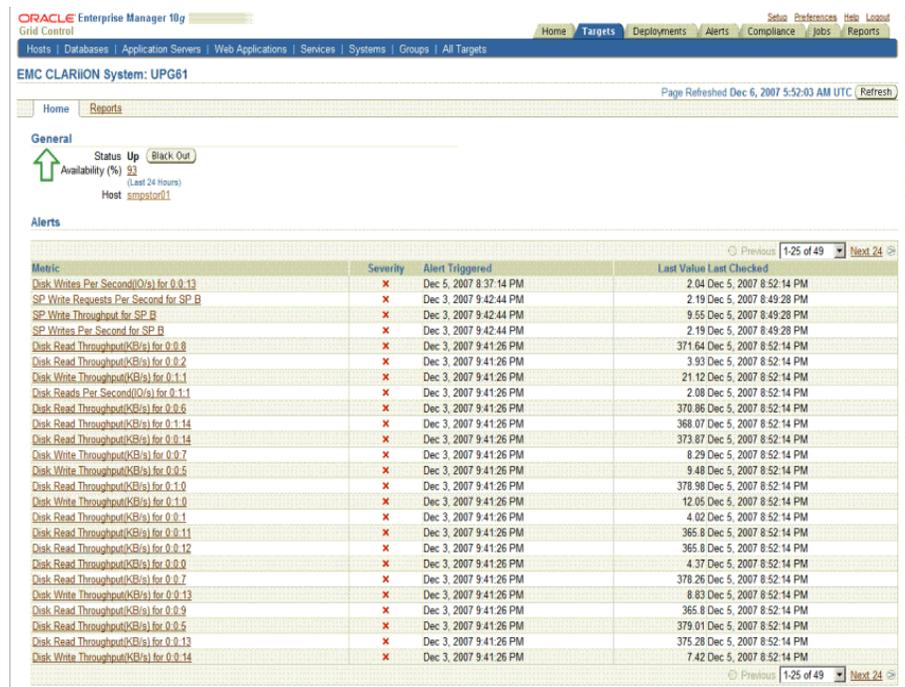
2. Verify that no metric collection errors are reported in the Metrics table.

3. Ensure that reports can be seen and no errors are reported by 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 CLARiiON 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 CLARiiON System Plug-in.

The Undeploy Management Plug-in page appears.

7. Check all the Agents that are currently deployed with the EMC CLARiiON 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 CLARiiON 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 CLARiiON System Plug-in.

Table 1   Reports

Report	Description	Purpose
CLARiiON Configuration Summary	Displays the overall configuration of the CLARiiON Array, the Storage Processors, RAID Groups, and Storage Groups.	To get an overall picture of the CLARiiON Array and its components.
CLARiiON Usage Summary	Provides the usage information of the CLARiiON 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 CLARiiON Storage Device Mapping	Provides the mapping to the database components such as tablespaces, datafiles, and ASM disk groups on storage devices.	To determine the location of tablespaces and datafiles on storage devices.
CLARiiON Storage Device and Database File Mapping	Provides the mapping to storage devices, tablespaces, and datafiles that use the storage devices.	To determine the list of tablespaces and datafiles from one or more databases that utilize storage devices.
Host File System and CLARiiON 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 CLARiiON 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 CLARiiON 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.
CLARiiON 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 CLARiiON 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.
CLARiiON Storage Group Summary	Enables to view hosts and hosts-accessible LUNs in the storage groups available on the EMC CLARiiON System.	To view the hosts and the LUNs in the different storage groups present in EMC CLARiiON System.
CLARiiON LUN Performance Statistics	Provides the performance statistics for the storage devices collected over the last 24 hours.	To review Reads throughput, Write throughput, Read bandwidth, and Write bandwidth.
CLARiiON LUN Performance Charts	Provides Reads throughput, Write throughput, Read bandwidth and Write bandwidth graphical summaries of the LUNs over the last 24 hours.	To review Reads throughput, Write throughput, Read bandwidth, and Write bandwidth summary of LUNs.
CLARiiON MetaLUN Performance Statistics	Provides the performance statistics for the storage devices collected over the last 24 hours.	To review Reads throughput, Write throughput, Read bandwidth, and Write bandwidth.
CLARiiON MetaLUN Performance Charts	Provides Reads throughput, Write throughput, Read bandwidth and Write bandwidth graphical summaries of the MetaLUNs over the last 24 hours.	To review Reads throughput, Write throughput, Read bandwidth, and Write bandwidth summary of MetaLUNs.
CLARiiON Disk Performance Statistics	Provides the performance statistics for the physical disks collected over the last 24 hours.	To review Reads throughput, Write throughput, Read bandwidth, and Write bandwidth.
CLARiiON Disk Performance Charts	Provides Reads throughput, Write throughput, Read bandwidth and Write bandwidth graphical summaries of the Disks over the last 24 hours.	To review Reads throughput, Write throughput, Read bandwidth, and Write bandwidth summary of Disks.

Troubleshooting Scenarios

Some of the metrics do not show data or show metric collection error

Check if the version of NavisecCLI being used is supported and certified. Enterprise Manager supports NavisecCLI version 6.14 & higher.

Verifying the EMC CLARiiON plug-in is properly deployed

Run `emc_clariion_response.pl` as an agent user and check the output.

The command to execute the script is:

```
perl emc_clariion_response.pl
/opt/Navisphere <IP of SP A> Response
```

The location of the script is `EMAGENT_HOME/sysman/admin/scripts/emx/emc_clariion_storage/`.

If the output is as follows:

- 1 means it is fine.
- 0 means EMC CLARiiON is down. Check if it is up and NavisecCLI is configured.
- error means NaviCLI is not properly configured. Follow the steps below.

Verifying the EMC CLARiiON agent is properly configured

Confirm NaviCLI is configured for the agent user by running:

```
/opt/Navisphere/naviseccli -h getagent
```

If not properly configured, an error will occur. If you see an error, do the following to isolate where the issue is:

- Refer to Prerequisites to configure NavisecCLI.
- Confirm that the user and password credentials are the same in the `/etc/Navisphere/agent.config` file and the user is logged into the NaviSphere GUI.
- Verify the user/password used to configure NavisecCLI. (`naviseccli AddUserSecurity -password mypass -scope 0 -user altusername`)

Database reports don't show up.

The database may not be configured for the agent monitoring the EMC CLARiiON target.

Verify by confirming that database shows up in the All Targets page.

Also, verify that no metric collection error is displayed for the database indicating the monitoring user name is correct.

Statistics data and graphs do not show any data

Statistics logging feature of the Navisphere software should be enabled to collect all the statistics data.

Verify by viewing properties of EMC CLARiiON in the Navisphere GUI. (Right-click on EMC CLARiiON to be monitored, enable Statistics logging.)

Clicking the Navisphere URL does not display the Navisphere GUI

Popup blocker should be disabled and JRE should be installed on the machine to enable running of the applets in the Navisphere.

Known Issues

- Mapping of ASM diskgroups created using disks discovered through ASMLib for example, ORCL:*, is not supported.
- Storage Groups Summary report does not display properly when EMC CLARiiON snapshot sessions are running.

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