# Oracle® Enterprise Manager

System Monitoring Plug-In Installation Guide for Exadata ILOM

Release 11.1.0.2.0

**E20083-05**

May 2012

The ILOM Plug-in enables Enterprise Manager Grid Control to monitor Sun Integrated Lights Out Manager (ILOM) targets.

## Overview of the Plug-In

The Oracle ILOM plug-in monitors the Oracle ILOM service processor in a compute node for hardware events and records sensor data to the Oracle Enterprise Manager Repository.

The ILOM plug-in is deployed to the Enterprise Manager (EM) Agent on the first compute node in an Oracle Database Machine, and only that EM agent communicates with the EM Management Server and Repository for all ILOM database server service processors in the Oracle Database Machine.

## Versions Supported

The ILOM plug-in supports the following versions of products:

- Oracle Exadata Storage Server 11g Release 2 (11.2) and later

- Enterprise Manager Grid Control 11g Release 1 (11.1) and later

- Oracle Management Agent 11g Release 1 (11.1) and later

## Prerequisites

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

- Review MOS Note 1110675.1

  This document is based on MOS Note 1110675.1, and assumes that the prerequisite and environment consideration document has been reviewed and all pre-requisites listed therein satisfied. This document also assumes that the Exadata Dashboard Deployment document has been reviewed and implemented.

- Verify `ipmitool` version

  The EM ILOM Plug-in requires a minimal ipmitool software version. To view the software version, use the following command as the `root` userid on the first database server in the cluster:

  - For Linux, ipmitool software version 1.8.10.3 is required. To verify the version, run:

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```
dcli -g ~/dbs_group -l root ipmitool -V
```

The output should be similar to:

```
sclczdb01: ipmitool version 1.8.10.3
sclczdb02: ipmitool version 1.8.10.3
```

- For Solaris 11, ipmitool software version 1.8.10.4 or higher is required. To verify the version, run:

```
/opt/ipmitool/bin/ipmitool -V
```

The output should be similar to:

```
sclczdb01: ipmitool version 1.8.10.4
sclczdb02: ipmitool version 1.8.10.4
```

If the reported version is 1.8.10.4 or above, this prerequisite has been satisfied.

## Database Server ILOM Service Processor User ID Configuration

In order for the EM agent to communicate with an ILOM service processor via the ILOM Plug-in, there must be a specific user ID established on the ILOM service processor.

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**Note:** Adding the specific user ID requires administrator level privilege on the ILOM service processor.

The specific ILOM user ID can be added in the ILOM service processor web interface, ILOM CLI, or with the `ipmitool` command. This example uses the `ipmitool` command.

For security reasons, the password to the ILOM service processor "root" user ID does not appear in the `ipmitool` commands in this example. Create a text file that contains one line with the password for the ILOM service processor "root" user ID in the `/tmp` directory called "changeme". The `/tmp/changeme` file is used in the `ipmitool` command examples.

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1. Log in to the Service Processor as `root`:

```
bash-3.2$ ssh root@[Service Processor IP]
Password:
```

The output will be similar to:

```
Sun(TM) Integrated Lights Out Manager

Version 3.0.9.19.a r55943
```

2. Change directory to `users`:

```
cd /SP/users
```

3. Create user and provide the users password:

```
create oemuser
Creating user...
Enter new password: ********
Enter new password again: ********
Created /SP/users/oemuser
```

4. Change to the new user's directory and set the role:

```
cd oemuser
/SP/users/oemuser

set role='aucro'
Set 'role' to 'aucro'
```

5. Test the ILOM user ID created in step 2 by listing the last 10 system events. Use the following command as the "root" user ID on the first database server in the cluster:

```
ipmitool -I lan -H sclczdb01-c -U oemuser -P oempasswd -L USER sel list
last 10
```

The output will be similar to:

```
646 | 10/29/2010 | 11:51:29 | System Firmware Progress | Video initialization | Asserted
647 | 10/29/2010 | 11:51:36 | System Firmware Progress | Keyboard controller initialization |
Asserted
648 | 10/29/2010 | 11:51:43 | System Firmware Progress | Option ROM initialization | Asserted
649 | 10/29/2010 | 11:51:46 | System Firmware Progress | Option ROM initialization | Asserted
64a | 10/29/2010 | 11:51:48 | System Firmware Progress | Option ROM initialization | Asserted
64b | 10/29/2010 | 11:51:51 | System Firmware Progress | Option ROM initialization | Asserted
64c | 10/29/2010 | 11:51:54 | System Firmware Progress | Option ROM initialization | Asserted
64d | 10/29/2010 | 11:52:27 | System Firmware Progress | System boot initiated | Asserted
64e | 11/09/2010 | 08:31:49 | Power Supply #0x65 | State Asserted
64f | 11/09/2010 | 08:57:14 | Power Supply #0x65 | State Deasserted
```

6. Repeat steps 1 through 5 for the rest of the compute node ILOM service processors in your Oracle Database Machine.

## Import the ILOM Plug-in to the Enterprise Manager Management Server

> **Note:** This step need only be performed once. If you are deploying multiple Oracle Exadata Database Machines, and your Enterprise Manager Management Server has already imported the plug-in, you may skip this section.

1. Download the documentation and jar file to your desktop.

> **Note:** Insert the proper locations for source/jar files.

2. Log on to the EM management server as an administrator.

3. In the navigation menu, click **Setup** and then **Management Plug-in**.

4. Click the **Import** button.

5. Click the **Browse** button.

6. Navigate to the directory that contains the PDU plug-in jar file. Select the appropriate jar file. Click the **Open** button to change the parent screen.

7. Click the **List Archive** button.

8. Select the check box for `oracle_x2cn` and click the **OK** button.

Notice that the `oracle_x2cn` plug-in now appears in the list of available plug-ins for deployment. The plug-in is ready to deploy.

## Deploy the ILOM Plug-in to the Enterprise Manager Agents

> **Note:** This example assumes you had to import the ILOM Plug-in and are continuing on from the last step. If you had already imported the ILOM plug-in and this is an additional Oracle Database Machine or a change in the cluster configuration, you will need to logon to the EM Management Server as an administrator and navigate to the Management Plug-ins screen (click **Setup** and then **Management Plug-ins**).

1. Select the check box for `oracle_x2cn`, and then click the **Deploy**.

2. Click the **Add Agents** button.

3. Select **Agent** in the *Target Type* pull-down menu.

4. Select the check box for the first database server in your cluster. Click the **Select** button.

5. Click the **Next** button.

6. Click the **Finish** button. The *Management Plug-ins* screen will refresh.

7. In the *Deployed Agents* column, click the **1** link (for `oracle_x2cn`) to verify the deployment.

You are now ready to add the "Oracle Exadata Compute Server" targets to the agent.

## Add ILOM Targets for Monitoring to the Enterprise Manager Agent

1. Logon to the EM management server as an administrator.

2. In the navigation bar, click **Targets**. Then click **All Targets** in the navigation sub-bar.

3. In the *Search* pull down menu, select **Agent**. Type the base part of the first database server name in your cluster, and click the **Go** button.

4. Click on the agent deployed to the first database server in your cluster.

5. In the Monitored Targets section, select the **Oracle ILOM Server** target type from the *Add* pull-down menu. Click the **Go** button.

6. Enter the name for the database server ILOM service processor being added in the *Name* field. Enter either the IP address or DNS name for the database server ILOM service processor being added in the *IP Address* field. Enter the

ILOM user ID that was created earlier into the *User ID* field. Enter the password associated with the ILOM user ID into the *Password* field.   Click the **OK** button.

7.  Repeat steps 1 through 6 for each ILOM service processor in the rest of the database servers in the Oracle Database Machine.

The ILOM service processor targets are now ready to enter into the previously defined system target for the given Oracle Database Machine.

## Add Configured ILOM Targets to the Exadata System Target

1.  In the navigation bar, click **Targets**, then click **Systems** in the navigation sub-bar.

2.  Click on the name of your system target.

3.  Click the **Edit System** button.

4.  Click the **Add** button.

5.  Select **Oracle Exadata Compute Server** in the *Target Type* pull-down menu.

6.  Select the check boxes for the appropriate ILOM service processors, and click the **Select** button to refresh the parent screen.

    Notice that the target component count has increased by 2, from 51 to 53, indicating the 2 ILOM targets have been added to the component list.

7.  Click the **OK** button.

8.  Click the **Launch Dashboard** button. The newly added ILOM service processors appear in the dashboard display. Click **Oracle Exadata Compute Server**.

The Oracle ILOM Plug-in deployment process has been successful.

## Configure Alerts for the ILOM Service Processors

It is not necessary to configure individual alerts for the ILOM service processors.

The import of the Oracle ILOM Plug-in to the Oracle Enterprise Manager Management Server and the ILOM Plug-in deployment process prepare the Oracle Enterprise Manager Repository and initiate polling of the ILOM by the Enterprise Manager Agent.

## Verify the ILOM Plug-in Installation

**Note to Reviewers:**    This section was compiled at a later date. The name of the ILOM Plug-in changed in the interface screen with an updated release and is now known as *Oracle ILOM Server*. The earlier name must be made consistent in the earlier screen captures.

To verify that the ILOM Plug-in is working correctly, perform the following steps:

1.  Logon to the EM management server as an administrator.

2. In the navigation bar, click **Targets**. Then click **All Targets** in the navigation sub-bar.

3. Select **Oracle ILOM Server** from the pull down menu in the *Search* field. Enter the appropriate ILOM name string portion in the search filter field. Click the **Go** button.

4. Click on the first ILOM target.

5. Click the **Reports** link. There is only one report available. You should see the configuration details for the selected ILOM server.

6. Raise an alert manually from the database server ILOM service processor being validated. Use the following command as the "root" user ID on the first database server in the cluster:

   ```
   ipmitool -I lan -H sclczdb01-c -U oemuser -P oempasswd -L OPERATOR event
   PS0/VINOK deassert
   ```

   The output will be similar to:

   ```
   Finding sensor PS0/VINOK... ok
   0 | Pre-Init Time-stamp   | Power Supply #0x65 | State Asserted
   ```

   The command above will take a few minutes before the alert appears in the EM Management Server. Please wait several minutes before proceeding to validate in the EM Management Server that the ILOM alert raised appears in the alert list for the database server ILOM service processor that was configured.

7. Logon to the EM management server as an administrator.

8. In the navigation bar, click **Targets**. Then click **All Targets** in the navigation sub-bar.

9. Select **Oracle ILOM Server** from the pull-down menu in the *Search* field. Enter the appropriate ILOM name string portion in the search filter field. Click the **Go** button.

10. Click on the database server ILOM service processor that was configured. You should now see the alert raised in step 6 above.

11. Clear the alert raised in step 6. Use the following command as the "root" user ID on the first database server in the cluster:

    ```
    ipmitool -I lan -H sclczdb01-c -U oemuser -P oempasswd -L OPERATOR event
    PS0/VINOK assert
    ```

    The output will be similar to the following:

    ```
    Finding sensor PS0/VINOK... ok
    0 | Pre-Init Time-stamp   | Power Supply #0x65 | State Deasserted
    ```

    > **Note:**  Do not forget to clear the alert raised in step 6, as it was raised for testing only and did not reflect a true fault condition!

12. Repeat steps 1 through 11 for the remaining configured ILOM service processors in your Oracle Database Machine.

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