

# Oracle® Enterprise Manager

Application Management Pack for Oracle Utilities Network Management System

Administrative Guide

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Application Management Pack for Oracle Utilities Network Management System extends Oracle Enterprise Manager Cloud Control to allow monitoring and management of Oracle Utilities Network Management System on remote servers.

When Application Management Pack for Oracle Utilities Network Management System is deployed, the following features and capabilities are available:

- Product discovery
- Target monitoring of status, system load, and activity
- Alerts triggered on monitored thresholds
- Starting and stopping NMS Services
- Sending Action commands to enable/disable debug
- Sending messages to all logged in clients
- Viewing and Downloading service logs
- Isis Snapshots
- Associated targets

This document describes the various configuration and operational activities available to administrators of Application Management Pack for Oracle Utilities Network Management System.

## Related Documentation and Resources

The **Help** menu provides links to **Enterprise Manager Help**, **Oracle Online Documentation**, **Oracle Online Forums**, and the **Oracle Technology Network (OTN)**, where the complete documentation for Oracle Enterprise Manager 13c is available.

This document and other Application Management Pack for Oracle Utilities Network Management System specific documentation are available on the Oracle Utilities Information Portal Documentation page ([http://docs.oracle.com/cd/E72219\\_01/documentation.html](http://docs.oracle.com/cd/E72219_01/documentation.html)).

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**NOTE:** Oracle Utilities Network Management System (NMS) documentation is also available on the Oracle Utilities Information Portal Documentation page.

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Additional information on Oracle Enterprise Manager (OEM) specific features and functionality relating to this product is available in the [Enterprise Manager Cloud Control Documentation](http://docs.oracle.com/en/enterprise-manager/) (<http://docs.oracle.com/en/enterprise-manager/>).

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**NOTE:** The documentation that accompanies this product is subject to revision and updating. Additional information that may relate to the functionality and features in this product may be found on My Oracle Support (MOS) at <https://support.oracle.com> (sign-in required). To find all articles relating to this product, enter the search term "Application Management Pack for Oracle Utilities Network Management System".

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## Plug-in Functionality

### Product Discovery

Any manageable entity is of a *target type*. A specific instance of a target type is a target. For example, *sf-sunapp-00.us.oracle* would be a target of target type *host*; *sf-mydb-00:1521/CD0000SF* would be a target of target type *database*.

For extensibility purposes, Application Management Pack for Oracle Utilities Network Management System provides a discovery framework and the functionality to monitor an Oracle Utilities Network Management System (NMS) environment system target type with target members of type NMS Services, Database System, and WebLogic Server. This models an installation of the Oracle Utilities Network Management System containing the software binaries and runtime components.

### High-Level View of the Discovery Process

- The discovery process finds Oracle Utilities Network Management System environments.
- The NMS Services target type models the Oracle Utilities Network Management System services.
- The Database System and WebLogic Server target types are standard target types in Enterprise Manager. They model the Oracle Database and the Oracle WebLogic Server, respectively.

In addition to these target types, a Network Management System environment is modeled as a system target. This system environment has as members the other target types.

### Environment Discovery

In order for a target to be monitored, it must first be discovered and promoted. Discovery is the process of making a target instance known to OEM. Once this has been done, the target needs to be promoted from an unmanaged to a managed state.

To discover target environments:

1. Log in to Enterprise Manager.
2. Choose **Setup > Add Target > Add Targets Manually**. Click **Add Using Guided Process**.
3. Choose the **Oracle Utilities Network Management System** from **Add Using Guided Process** dialog.

4. Click **Add...**
5. Select the agents on which to run discovery and click **Next**.
6. Select a target and click **Properties**.
7. Populate credentials for monitoring the NMS database and click **OK**.
8. Optional: Select a target and click **Associations**.
9. Optional: Select the database and one or more WebLogic Servers to be associated with this NMS Environment and click **OK**.  
  
Associations can only be added to database and/or WebLogic Server if it is already managed as a target in Enterprise Manager. These associations can be added, removed, or changed later on the **Configure Associations** page.
10. Optional: Set Properties and Associations for any additional NMS Environments you wish to manage.  
  
The Properties column for the target in the table list will have the value of **Set** when that target's properties have been set.
11. Select all of the targets to be managed and click **Next**.
12. Wait for added targets to appear in the Summary. Each NMS Environment will have two targets: one of type Oracle Utilities NMS and one of type NMS Services.
13. Click **Finish** to finish the operation.

## Viewing a Target's Home Page

To view a target's home page:

1. Log in to Enterprise Manager.
2. Click **Targets > All Targets**.
3. To view its home page, locate and click a target from the sortable and searchable **All Targets** list.

## Oracle Utilities NMS Target

The **Oracle Utilities NMS** target is a system target that comprises:

- One **NMS Services** target.
- Up to one **Database System** target.
- Any number of **Oracle WebLogic Server** targets.

The **Database System** target is part of the **Oracle Database** plug-in. The **Oracle WebLogic Server** target is part of the **Oracle Fusion Middleware** plug-in. Both of these are standard plug-ins included in Enterprise Manager.

The **NMS Services** target is included in Application Management Pack for Oracle Utilities Network Management System.

## Oracle Utilities NMS Home Page

This is the home page for the **Oracle Utilities NMS** target

## Summary

This section has important information about NMS and its associated targets.

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NMS Version	The version of Network Management System being monitored.
Configuration Tag	The configuration tag of the currently built cesejb application. This is the same as the Configuration Tag in the About Web Workspace window in NMS.
Project Name	The project name of the currently built cesejb application. This is the same as the Project Name in the About Web Workspace window in NMS.
NMS URL	The URL of the Java Web Start page for Oracle Utilities Network Management System. This is a hyperlink that will open the URL in a new window
NMS Services	A link to the Enterprise Manager page for the NMS Services member target
Database	A link to the Enterprise Manager page for the Database System member target
WebLogic Server	A link to the Enterprise Manager page for the Oracle WebLogic Server member target

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## Status

This section shows the availability and current status of the system as well as the availability and current status of the most affected members of the system. Availability is shown for the past 31 days.

## Issues Overview

This shows the number of issues and problems for the member targets. More detailed issue information is available in **Incident Manager** (click **NMS > Monitoring > Incident Manager**) and **Member Dashboard** (click **NMS > Members > Dashboard**). For more information, see the *Using Incident Management* topic in the *Oracle Enterprise Manager Cloud Control Administrator's Guide*.

## Job Activity

This shows a summary of the jobs submitted to the member targets. For more information, see the *Utilizing the Job System* topic in the *Oracle Enterprise Manager Cloud Control Administrator's Guide*.

## Configure Associations Page

The Configure Associations page allows the user to change the **Database System** and **Oracle WebLogic Server** targets that are members of the **Oracle Utilities NMS** target. To update the members select or deselect entries within the Database and/or WebLogic Server tables displayed on the page.

This page has the following tables.

Select Database	Lists the <b>Database System</b> targets known by Enterprise Manager.
Select WebLogic Server	Lists the <b>Oracle WebLogic Server</b> targets known by Enterprise Manager.

## Changing Associations

1. Select the database in the **Select Database** table.
2. Select the WebLogic servers in the **Select WebLogic Server** table. Note that multiple rows can be selected in this table by selecting rows while holding down the **Ctrl** key. You can use the **Ctrl** key to deselect entries in the table lists.
3. Click the **Save Changes** button.
4. Click **OK** in the **Confirm Association Changes** dialog.

## NMS Services Target

The **NMS Services** target monitors NMS services and collects metrics from NMS services and the NMS database.

## NMS Services Home Page

This is the home page for the **Oracle Utilities NMS** target.

### Summary

This section has key information about NMS and its current state. Fields in this section will dynamically update.

NMS Version	The version of Network Management System being monitored.
Current Status	The current status of the NMS Services target. This target is considered Up if all critical services have a status of either RUNNING or FAILED_INTERFACE.
Up Since	The date NMS Services has been up since.
Availability (31 days)	The availability percentage over the last 31 days.
Services Status	The current status of services. These are the possible values: <ul style="list-style-type: none"> <li>• Up: Services are running</li> <li>• Critical Services Up: All Critical Services Ready - non-critical services have failed/stopped</li> <li>• Initializing: Services Initializing</li> <li>• Critical Services Down: Services NOT Ready - critical services have failed/stopped</li> <li>• Down: Services are stopped</li> <li>• Down: Services and Isis are stopped</li> </ul>
Configuration Tag	The configuration tag of the currently built cesejb application. This is the same as the Configuration Tag in the About Web Workspace window in NMS.

Project Name	The project name of the currently built cesejb application. This is the same as the Project Name in the About Web Workspace window in NMS.
Model Build	Indicates whether the model build is currently running and the start time of the model build if it is running.
NMS URL	The URL of the Java Web Start page for Oracle Utilities Network Management System. This is a hyperlink that will open the URL in a new window.

## Services

This table lists the services recognized by SMSService (System Monitor Service) and their current status. It dynamically updates and has the following columns:

Column Name	Description
Service	The name of the service's process.
Status	The current status of the service. This has the following possible values: <ul style="list-style-type: none"> <li>STARTING: The process has started.</li> <li>INITIALIZING: The process has registered and is initializing.</li> <li>RUNNING: The process reports as initialized.</li> <li>FAILED: The process has failed.</li> <li>FAILED_INTERFACE: The process reports a failed interface.</li> <li>STOPPED: The process intentionally stops.</li> </ul> <p><b>NOTE:</b> The FAILED_INTERFACE status means that the service or adapter is running, but its connection to an external system is failed or lost.</p>
Critical	Indicates whether this service is required for the system to be functional.
Display Name	The name of the service.

This table has the following buttons:

- Stop Service:** Stops the selected service. This opens a dialog box where NMS host credentials are entered. When you click OK, the specified service will be stopped. This action is only valid for Isis-connected services (nms-naming-service and nms-lighttpd are examples of non-Isis services).
- Restart Service:** Stops and restarts the selected currently running service. This opens a dialog where NMS host credentials are entered. When you click OK, the specified service will be stopped and restarted. This action is valid for most Isis-connected services except SMSService, DBService, and ODSservice.

## Incidents and Problems

This shows a summary of the incidents and problems for the NMS Services target as determined by OEM.

The table also lists any active NMS System Alarms. For instance, if an NMS Service goes down abnormally, then a system alarm will be generated. The NMS alarm entry will go away once the alarm has been cleared from the NMS Systems Alarm list. More detailed

information is available in **Incident Manager** (click **NMS Services > Monitoring > Incident Manager**). For more information, see the *Using Incident Management* topic in the *Oracle Enterprise Manager Cloud Control Administrator's Guide*. Note that any changes to the alarm incident in OEM will not be pushed to NMS. Acknowledging or clearing the alarm from OEM will not clear it within NMS.

## NMS Activity/Load Page

This page has charts of the load and activity on the NMS system. Clicking the expand icon on a chart will resize the chart to fill the whole page. Clicking again will restore the chart to its original size and position.

### Time Period

Allows the user to select the time period displayed in the charts on this page. The values are:

Name	Period	Data Interval	Dynamic Update
Real-Time	4 hours	1 minute	Yes
Past Day	1 day	10 minutes	No
Past Week	7 days	1 hour	No
Past 2 Weeks	14 days	1 day	No
Past Month	31 days	1 day	No
Past 90 Days	90 days	1 day	No
Past 6 Months	182 days	1 day	No

### Current Job Count

Shows the maximum number of active jobs of different types within the time period selected.

- **Active Outages:** Outage jobs in an active state.
- **Active Non-Outages:** Non-outage jobs in an active state.
- **Active Fuzzy Jobs:** Fuzzy jobs in an active state.
- **Active Momentary Outages:** Momentary outage jobs in an active state.

### Calls

Shows of the total number of calls of different types entered over the time interval displayed. Calls also shows the total number of unprocessed calls at the displayed time period.

- **Customer Calls Per Interval:** Customer calls during time interval.
- **AMI Power-offs Per Interval:** AMI power-offs during time interval.
- **Total Calls Per Interval:** Total calls during time interval.
- **Unprocessed Calls:** Total number of calls which still need to be processed.

## Current User Count

Shows the maximum number of logged in users of various user types during the time interval displayed.

- **Web Workspace:** Web Workspace non-View-Only users.
- **WW View Only:** Web Workspace View Only users.
- **Storm Management:** Storm Management users.
- **Service Alert:** Service Alert users.
- **Web Call Entry:** Web Call Entry users.
- **Configuration Assistant:** Configuration Assistant users.
- **Web Callbacks:** Web Callbacks users.
- **Model Management:** Model Management users.

## Device Operations

Shows the total number of device operations (open, close) performed during the time interval displayed.

- **Sustained Per Interval:** Sustained device operations during time interval.
- **Transient Per Interval:** Transient device operations during time interval.
- **Total Operations Per Interval:** Total device operations during time interval.

## Study Session Count

Shows the maximum number of open study sessions during the time interval displayed.

- **Non-Powerflow Sessions:** Number of non-powerflow study sessions.
- **Powerflow Sessions:** Number of powerflow study sessions.
- **Total Sessions:** Total number of study sessions.

## Crew Actions

Shows the total number of crew actions (assign, en route, on-site, release, suspend, relocate, unarrive) performed during the time interval displayed.

- **Crew Actions Per Interval:** Crew actions during time interval.

## Detailed Description of Target Operations

Credentials will be required for any action requiring you to interact with the NMS environment. When credentials are required, the **Host Credentials** panel will be displayed.

The credentials entered must either login as the nmsadmin user where NMS Services run or login as another user and `sudo` to a user that has group permissions to execute key scripts owned by the nmsadmin user. Another option is to `sudo` to the nmsadmin user. New credentials can be entered each time or either Preferred Credentials or Named Credentials can be saved and re-used. For more information, see the *Preferred Credentials* topic in the *Oracle Application Management Pack for Oracle E-Business Suite Guide* document.



## Start Up

The NMS system services need to be started.

This operation may be started from any page of the **NMS Services** target.

1. Click the **Start Up...** button.

This option is also available from **NMS Services > Control > Start Up....** Click the **Start Up...** button.

The **Start Up NMS** dialog appears.

2. Select or enter host credentials.

3. Click the **OK** button.

The **Start Up NMS** dialog disappears.

The next two steps are only necessary to see the result of the Start Services job.

4. Optional: Select **NMS Services > Job Activity**.

The **Job Activity** page is loaded.

5. Optional: Click the **START SERVICES** job.

The status of the **START SERVICES** job is shown.

## Shut Down

The NMS system services need to be stopped.

This operation may be started from any page of the **NMS Services** target.

1. Click the **Shut Down** button.

This option is also available from **NMS Services > Control > Shut Down...**

The **Shut Down NMS** dialog appears.

2. Optional: Choose additional options.

The additional options are:

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Shutdown Isis	This will shutdown the Isis message bus.
Stop non-Isis processes	This will shutdown non-Isis processes that are controlled by SMService, such as nms-naming-service and nms-lighttpd.
Mark all users as logged out	This will mark any users that are currently logged in as logged out in the NMS database.

3. Select or enter host credentials.

4. Click the **OK** button.

The **Shut Down NMS** dialog disappears.

The next two steps are only necessary to see the result of the Stop Services job.

5. Optional: Select **NMS Services > Job Activity**.

The **Job Activity** page is loaded.

6. Optional: Click the **STOP SERVICES** job.

The status of the **STOP SERVICES** job is shown.

## Send Message

Send a message to all of the users logged into NMS. This includes all environment login and user types. The message will be in the form of a modal message dialog displayed over the main window of the NMS environment. This operation may be started from any page of the NMS Services target.

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**NOTE:** This option is also available from **NMS Services > Control > Send Message...**

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1. Click the **Send Message...** button.

The Send Message dialog appears.

2. Enter a message in the Message Text window. The message, when displayed to the user, will include the date and time of when the message was sent.

The dialog's message text format can be changed by altering the NMS message code OEM\_MESSAGE\_DIALOG. See the NMS MessageCode\_en\_US.properties configuration file for more details.

3. Select or enter host credentials.

4. Click the **OK** button.

The **Send Message** dialog disappears.

## Stop Service

An individual service needs to be stopped.

This operation must be started from the Home page of the **NMS Services** target.

1. Select a service in the **Services** table.

2. Click the **Stop Service** button.

The **Stop Service** dialog appears.

3. Select or enter host credentials.

4. Click the **OK** button.

The **Stop Service** dialog disappears.

## Restart Service

An individual service needs to be stopped and restarted. This option cannot be used to start an already stopped service. Use the [Start Up](#) option to start stopped services.

This operation must be started from the Home page of the **NMS Services** target.

1. Select a service in the **Services** table.

2. Click the **Restart Service** button.

The **Restart Service** dialog appears.

3. Select or enter host credentials.

4. Click the **OK** button.

The **Restart Service** dialog disappears.

## Action Command

An Action command needs to be performed. See *Oracle Utilities Network Management System Configuration Guide* for a variety of use cases.

This operation may be started from any page of the **NMS Services** target.

**1. Select NMS Services > Action Command...**

The **Action Command** dialog appears.

**2. Select the desired tab for type of Action command to be performed**

- **Command:** allows for freeform entry of any Action command to one or more services.
- **Client Command:** allows for freeform entry of any Action command that will be specific to one or any user clients.
- **Service Debug:** allows setting of debug in services.
- **EJB Debug:** allows setting of debug in the EJB application.
- **Client Debug:** allows setting of debug in user clients.
- **Recache:** common recache/reload operations.

**3. Populate the fields in the Command Info step.**

**4. Click the Next button.**

The **Action Command** dialog changes to the Credentials step

**5. Select or enter host credentials and press the Next button.**

The **Action Command** dialog changes to the Confirmation step

**6. Verify action to be performed.**

The specific command-line to be executed appears in the **Command Line** field.

**7. Optional: Check the Wait for result check-box if you want to wait for the Action command result.**

**8. Click the Finish button.**

If **Wait for result** was selected, a dialog appears displaying the return value of the command. This indicates the number of processes which processed the command. Note that action commands sent to Java applications or Java clients will always have a result of 0.

## Action Command Tabs

### Command

This tab allows for free-form entry of any Action command

*Figure 1: Command options*

Field	Description
Process	The process to send the Action command to. This combo box contains all of the services currently recognized by SMSservice, but also allows user-entered values. A value of "any" will send to all processes.

Field	Description
Command	The command to send.
Arguments	The command arguments.

## Client Command

This tab allows for free-form entry of any Action command to Java clients rather than Isis-connected processes. This typically requires custom configuration for clients to handle these messages. See the *Invoking Commands from an External System* section of the *Oracle Utilities Network Management System Configuration Guide*.

Field	Description
User	The NMS user's login id. Specify <i>any</i> to send to all users.
Tool	The JBot java tool to send the command to. Specify <i>any</i> to send to all of the Java tools. As previously specified, this tool has to be configured to accept the command message being sent.
Command	The command to send.
Arguments	The command arguments.

## Service Debug

This tab allows for setting of debug in services

*Figure 2: Service Debug options*

Field	Description
Service	The service for which debug will be set.
Debug Arguments	The arguments can either be a number to set all debug facilities to the same level or a space separate list of debug facilities and their desired debug levels. Examples: <ul style="list-style-type: none"> <li>• 1: set all debug facilities to level 1.</li> <li>• 0: set all debug facilities to level 0 (disabled).</li> <li>• messages 0: set the messages debug facility to level 0.</li> <li>• api 1 timing 2: set the API debug facility to level 1 and the timing debug facility to level 2.</li> </ul>

## EJB Debug

This tab allows setting of debug in the EJB application

*Figure 3: EJB Debug options*

Field	Description
Debug Facility	The name of the debug facility to set. These debug facility names are case-sensitive.
Debug Level	The desired debug level

Field	Description
	<ul style="list-style-type: none"> <li>On: enables debug and info messages.</li> <li>Off: disables debug and info messages.</li> </ul>

## Client Debug

This tab allows setting of debug in user clients

*Figure 4: Client Debug options*

Field	Description
User	The login id of the user to set debug for.
Debug Facility	The name of the debug facility to set. These debug facility names are case-sensitive.
Debug Level	The desired debug level <ul style="list-style-type: none"> <li>On: enables debug and info messages.</li> <li>Off: disables debug and info messages.</li> </ul>

## Recache

This tab has common recache/reload operations

*Figure 5: Recache options*

Option	Description
Recache Zones	This tells DDSservice to update its internal control zone memory structures. It is the equivalent of the following command:  <pre>UpdateDDS -recacheZones</pre>
Recache Rules	This reloads configuration rules from the srs_rules table. It is the equivalent of the following command:  <pre>Action any.any reload_rules</pre>
EJB Resync	This command causes the application running in the WebLogic server to reload the event cache. It is the equivalent of the following command:  <pre>Action any.publisher* ejb resync</pre>
EJB Refresh	This command causes the application running in the WebLogic server to reload the configuration and forces the client to re-request all data that it is currently displaying. This puts significant load on the system, so it should only be done when necessary in a production environment. It is the equivalent of the following command:  <pre>Action any.publisher* ejb refresh</pre>

## Logs

## Save Logs

A Cmd snapshot is needed to capture the state of services. This is typically for support or diagnostic purposes.

This operation may be started from any page of the **NMS Services** target.

1. Click **NMS Services > Logs...**

The **Logs** dialog appears.

2. Select the Save Logs tab, if not already selected.
3. Select either **Cmd snapshot** or **Cmd snapshot and service logs** option.

The **Cmd snapshot** option performs a Cmd snapshot to capture the current state of all Isis-connected processes and creates a zip file with the snapshot results. The **Cmd snapshot and service logs** option does the same as the **Cmd snapshot** option, but also includes the service log files in the resulting zip file.

4. Select or enter host credentials.
5. Click the **Save** button.

The **Logs** dialog disappears and the **Doing snapshot** dialog appears indicating the name and location of the zip file being created.

## Tips and Troubleshooting

- Discovery and metric configuration collection log information can be found in the agent perl trace file (`.../agent_inst/sysman/log/emagent_perl.trc`).

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