

Enterprise Manager for Oracle Utilities

Administrative Guide



Release 24.1.0.0.0

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June 2026

The Oracle logo, consisting of a solid red square with the word "ORACLE" in white, uppercase, sans-serif font centered within it.

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Introduction

Enterprise Manager for Oracle Utilities extends Oracle Enterprise Manager Cloud Control to allow monitoring and management of Oracle Utilities Application Framework-based products on remote servers.

When Enterprise Manager for Oracle Utilities is deployed, the following features and capabilities are available:

- Product discovery
- Target monitoring
- Environment assessment
- Patch identification and installation
- Patch migration from one environment to another
- View product configuration files

This document describes the various configuration and operational activities available to administrators of Enterprise Manager for Oracle Utilities.

Note

Prior versions of this product were released as Application Management Pack for Oracle Utilities. Please note that any references to Application Management Pack for Oracle Utilities that may occur within this document or in images within this document refer instead to the product's new name, Enterprise Manager for Oracle Utilities.

2

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 12c is available.

This document and other Enterprise Manager for Oracle Utilities-specific documentation is available on the [Oracle Utilities](#) section of the **Oracle Technology Network (OTN)** documentation site.

Additional information on Oracle Enterprise Manager-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/>).

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 "Enterprise Manager for Oracle Utilities" (or for related articles, search on the product's previous name, "Application Management Pack for Oracle Utilities").

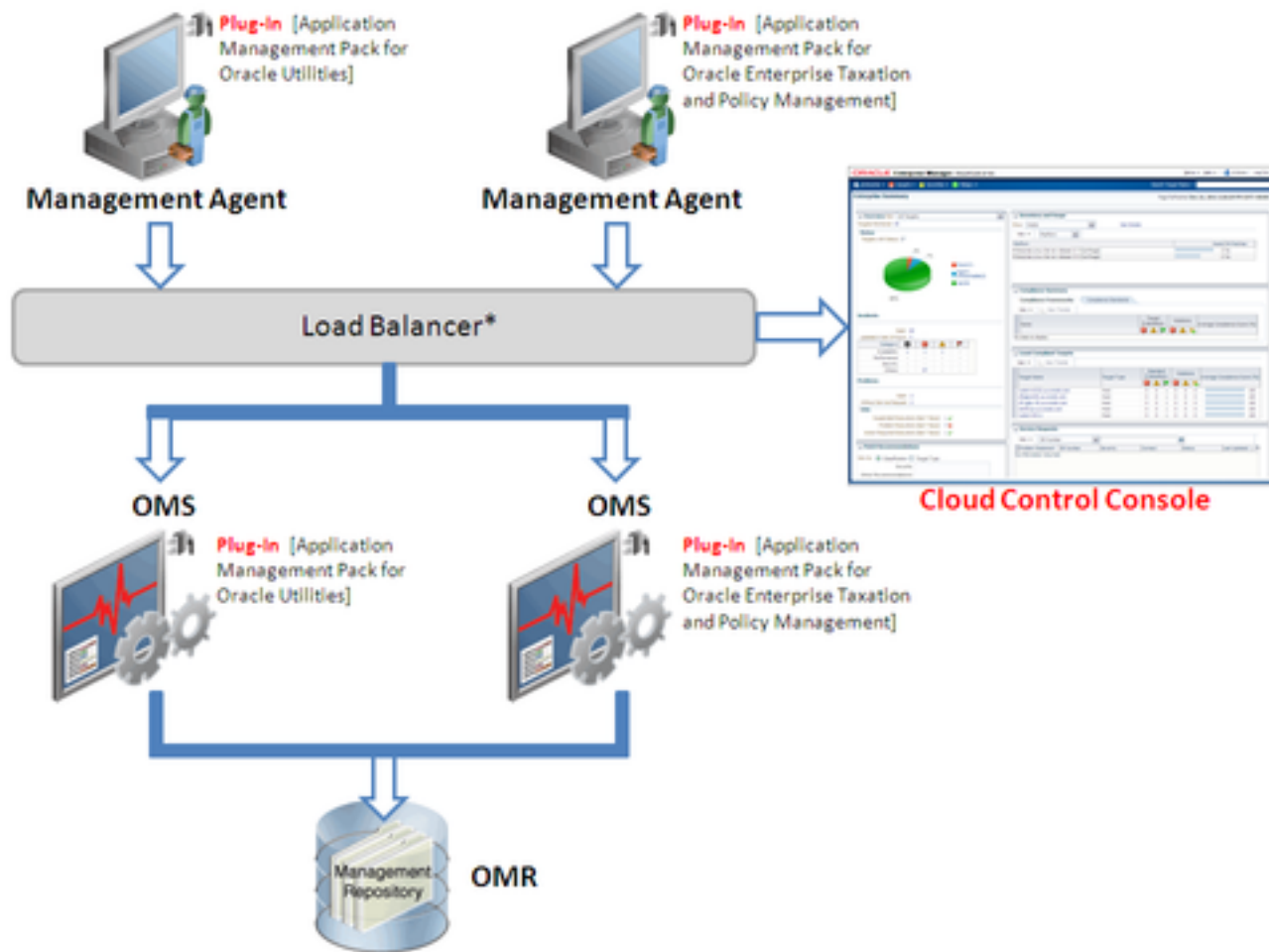
3

Architecture

Plug-in Architecture

The following diagram illustrates the Enterprise Manager for Oracle Utilities architecture.

Figure 3-1 Architecture



Note

* The load balancer and multiple OMSes depicted in the diagram above are included only to indicate how a sample Enterprise Manager Cloud Control architecture would look in a large organization. They are not a prerequisite or a requirement for an Enterprise Manager system installation. If you do not have a load balancer, then the Management Agents communicate directly with the OMSes.

4

Plug-in Functionality

Plug-in functionality available with Enterprise Manager for Oracle Utilities includes the following:

- [Product Discovery](#)
- [Environment Target Home Page](#)
- [Oracle Utilities Application Framework Target Home Page](#)
- [Target Home and Performance Monitor Pages](#)
- [Target Control Operations](#)
- [Detailed Description of Target Control Operations](#)

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, Enterprise Manager for Oracle Utilities provides a discovery framework and the functionality to monitor an Oracle Utilities Environment system target type with target members of type web application, web services, batch server and ouaf home. This models an installation of the Oracle Utilities Application Framework (OUAF) containing the software binaries and runtime components.

High-Level View of the Discovery Process

The discovery process involves Oracle Utilities Application Framework (OUAF)-based products. Each environment comprises the files necessary for the operation of the web application, the database, and the threadpool worker. Thus, each OUAF-based environment and its runtime components can be modeled as an Enterprise Manager target that contains information about the following:

- Host (the machine on which the application server runs)
- Installed products and releases
- Web applications
- Database host (the machine on which the database runs)
- Database
- Batch servers and threadpool workers

This release of Enterprise Manager for Oracle Utilities is based on Java and offers tighter integration with the application server and enhanced features. To leverage some of these features, as well as to accommodate some of the newer features of Oracle Utilities Application Framework, Enterprise Manager for Oracle Utilities offers a new target model with new target types: System Environment, [Web Application](#), [Web Services](#), [Batch Server](#) and Oracle Utilities Home.

The Web Application and Web Services target types are closely modeled on the Application Deployment type offered by Fusion Middleware and use some of the regions already developed by the Fusion Middleware Enterprise Manager Plug-in. In addition, these two models use Java Management eXtension (JMX) MXBeans (such as JVMSystems, PerformanceStatistics) that are used for discovery and to collect metrics.

Batch Server is a standalone JVM that uses MXBeans for discovery and monitoring.

In addition to these target types, a typical OUAF-based environment is modeled as a system target. This system environment has as members the other new target types as well as the application server, where the Web Application Server and the Service Application Server are deployed and to which the OEM database instance connects.

The OUAF home target type page models the installation directory, also referred to as **SPLEBASE**. Given extensive use of JMX, it must be configured properly in the OUAF environment for discovery and performance monitoring to operate correctly.

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. This process requires some prerequisite steps.

Note

Oracle recommends after upgrading the plugin, delete existing targets and re-discover.

1. All components of the environment should be up, namely, the web application, the web service and batch servers.
2. JMX should be configured on the target environment. To test this, use jconsole and connect to the JMX servers using the JMX URLs. You can search the WebLogic log for the Web and EJB JMX URLs. Examples:

```
service:jmx:rmi:///jndi/rmi://{host}:{ejbJmxPort}/oracle/ouaf/  
ejbAppConnector  
service:jmx:rmi:///jndi/rmi://{host}:{webJmxPort}/oracle/ouaf/  
webAppConnector
```

The threadpoolworker logs would have the batch JMX URLs. For example,

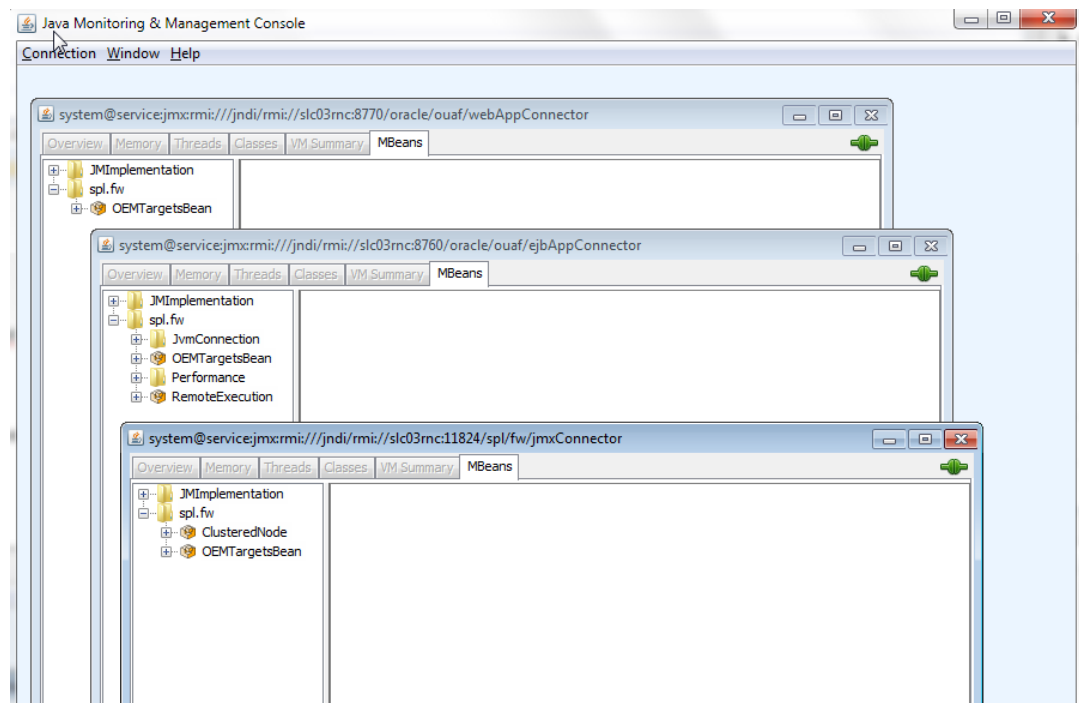
```
service:jmx:rmi:///jndi/rmi://{host}:{batchJmxPort}/oracle/ouaf/batchConnector
```

In FW 2.2, this would be `service:jmx:rmi:///jndi/rmi://{host}:{batchJmxPort}/spl/fw/jmxConnector`

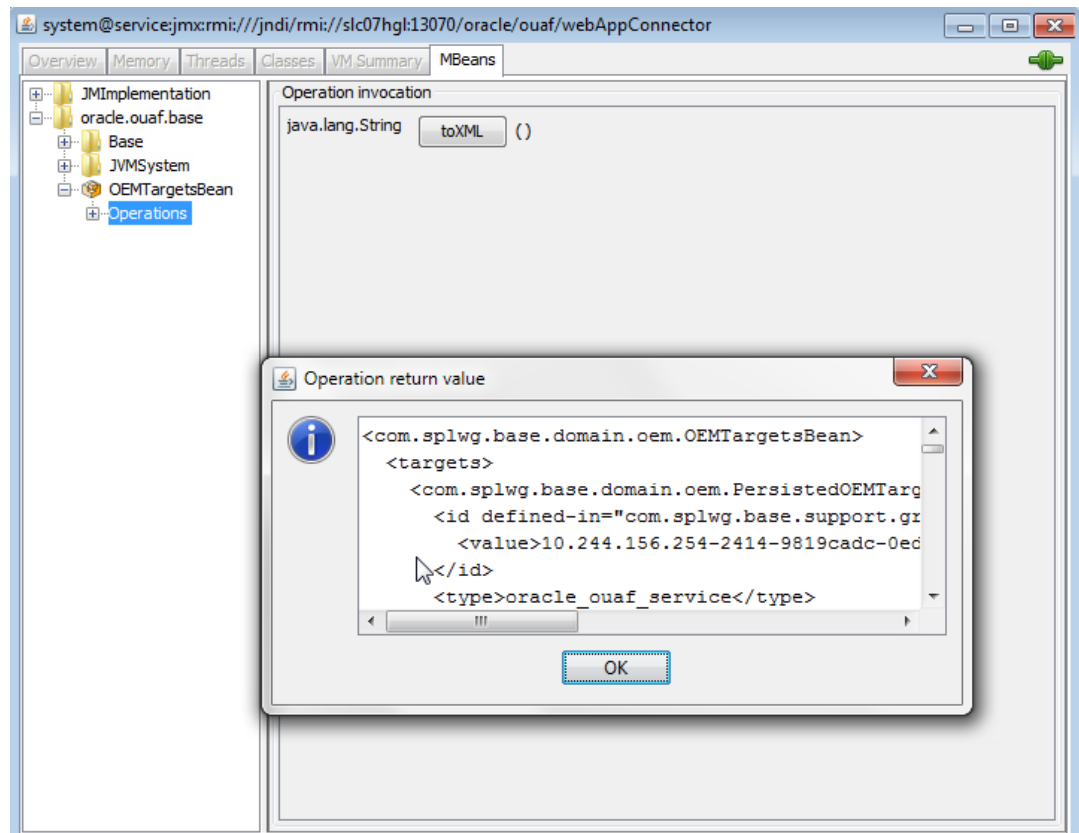
Make sure you can connect to the URLs and that the OEMTargetsBean is present, as illustrated in the following image:

Note

Here, the host should be fully qualified domain name.

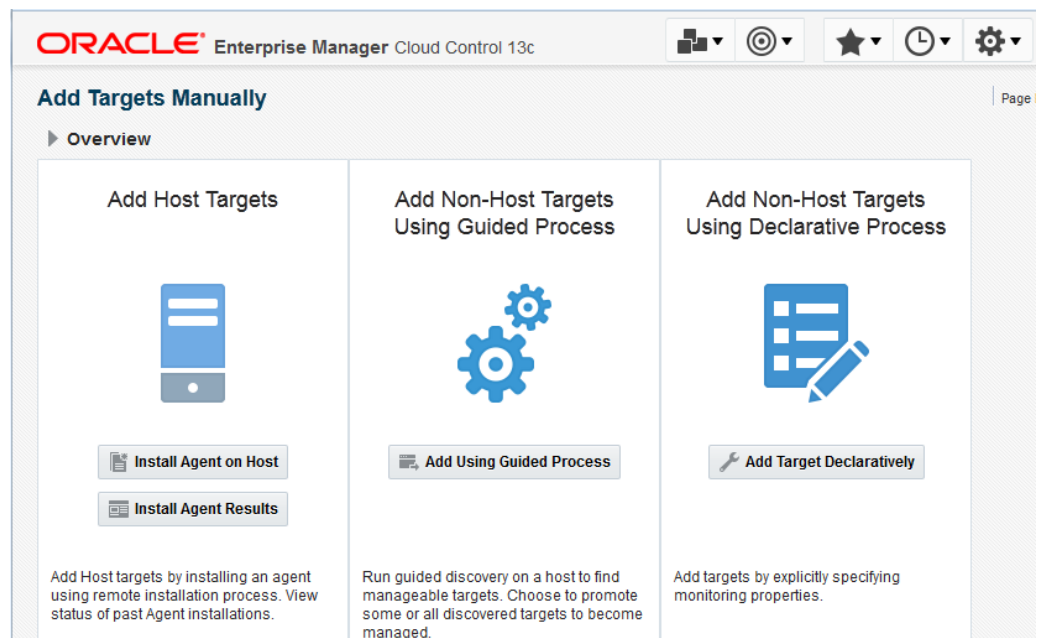


Expand the **OEMTargetsBean**, click **Operations**, then click the **toXML** button. A window should popup and return the XML of the targets that will be discovered. Do this for each JMX connection.



- Target monitoring can be performed via JMX or REST API. You can prefer to use REST API option, if you have any firewall restrictions. Details, to enable "JMX over REST" feature, are available below.

- a. Run configureEnv using FW menu options, choose option 57 and provide appropriate values for the displayed variables.
 - b. **JMX_REST_SERVICE_FLAG**: This flag in the Menu options is to enable the REST API. If this is false, then the communication happens using via JMX, the old way of the plugin communication.
 - c. **JMX_REST_SERVICE_FLAG** is true and **JMX_HTTPSSL_FLAG** false, the communication happens over the HTTP. **JMX_REST_SERVICE_FLAG** is true and **JMX_HTTPSSL_FLAG** true, the communication happens over the HTTPS.
 - d. More details are available in respective Utilities FW product documentation.
4. The WebLogic domain/Fusion middleware must be discovered. To do this, perform the following:
- The WebLogic admin server must be started. Verify that it is by logging into the WebLogic console.
 - Discover the WebLogic domain and Fusion middleware using guided discovery. On the grid console, go to **Setup**, and then **Add Targets**, and then **Add Targets Manually**. Select the following options on the page:



- Click **Add Using Guided Process**, enter the entries for the WebLogic admin server, then continue until the WebLogic domain/Fusion middleware is discovered.

If WebLogic is configured with SSL, use the **t3s** protocol.

ORACLE Enterprise Manager Cloud Control 13c

Middleware

Add Oracle Fusion Middleware/Weblogic Domain: Find Targets

To discover a WebLogic Domain, a Management Agent uses JMX protocol to make a t3/t3s connection to the domain's Administration Server. If only S the Advanced section and modify the JMX protocol from the default t3 to t3s.

* Administration Server Host

* Port

* Username

* Password

Node Manager Username

Node Manager Password

* Unique Domain Identifier

* Agent

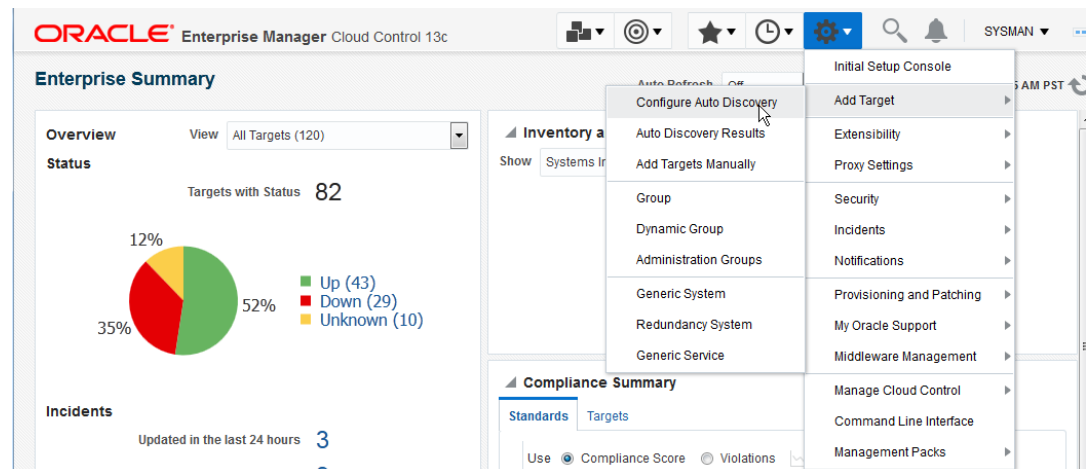
Discover Application Versions

▶ Advanced

To discover OUAF target environments:

1. Log in to Enterprise Manager.
2. Choose **Setup**, and then **Add target**, and then **Configure Auto Discovery**.

Figure 4-1 Selecting Auto Discovery



3. On the **Setup Discovery** page, click the host where discovery is to be run, then click the **Discovery Modules** button.

Figure 4-2 Setup Discovery

Setup Discovery

Automatic discovery is a process that detects hosts, virtual servers and other targets so that they can be monitored and managed by Enterprise Manager. Use the following options to configure and schedule automatic discovery.

Configure Auto Discovery

- Setup Network Scan Discovery
- Setup Discovery on Hosts

Add Targets from Auto Discovery Results

- Promote Discovered Targets
- Ignore Discovered Targets

Add Targets Manually

- Add Targets with Guidance
- Add Targets Declaratively

Servers, Storage and Network | **Targets on Hosts** | Advanced: Discovery Modules

Search

View | Collection Schedule | Diagnostic Details | Discover Now | Discovery Modules | Detach

Host	Collection Schedule	Discovered Targets	Managed Targets	Enabled Discovery Modules	Most Recent Ended On
msp52072.us.oracle.com	Every 1 Day	16	3	5	Dec 7, 2015 10:54:38 PM PST
slc03rnc.us.oracle.com	Every 1 Day	17	13	1	Dec 8, 2015 3:16:00 PM PST
slc05ynf.us.oracle.com	Every 1 Day	5	11	1	Dec 1, 2015 2:16:24 AM PST
slc06fdt.us.oracle.com	Every 1 Day	4	31	5	Dec 7, 2015 1:35:04 PM PST

- Ensure that the **Enterprise Manager for Oracle Utilities** module is on the **Discovery Module** list.

Figure 4-3 Verifying the module

Discovery Modules : slc03rnc.us.oracle.com

Configure discovery modules and parameters on this host.

OK Cancel

View | Edit Parameters

Discovery Module	En	Target Types	Discovery P
Enterprise Manager for Oracle Utilities Application	<input checked="" type="checkbox"/>	Oracle Utilities Batch Server, Oracle Utilities Home, Oracle Utilities Web Services	
OUAEnvironmentDiscovery	<input type="checkbox"/>	Oracle Utilities Batch Environment, Oracle Utilities Scheduler Environment	
Oracle Cluster and High Availability Service	<input type="checkbox"/>	Cluster, Oracle High Availability Service	
Oracle Database, Listener and Automatic Storage Management	<input type="checkbox"/>	Database Instance, Listener, Pluggable Database	
Oracle Fusion Middleware	<input type="checkbox"/>	Oracle WebLogic Domain	
Oracle Home Discovery	<input type="checkbox"/>	Oracle Home	
Oracle Secure Backup Domain	<input type="checkbox"/>	Oracle Secure Backup Domain	

- Once back on the **Setup Discovery** page, select the host again to enable the buttons at the top. When the desired host is selected, click the **Discover Now** button.

Figure 4-4 Running the discovery

Setup Discovery

Overview

Automatic discovery is a process that detects hosts, virtual servers and other targets so that they can be monitored and managed by Enterprise Manager. Use the following options to configure and schedule automatic discovery.

Configure Auto Discovery

- Setup Network Scan Discovery
- Setup Discovery on Hosts

Add Targets from Auto Discovery Results

- Promote Discovered Targets
- Ignore Discovered Targets

Add Targets Manually

- Add Targets with Guidance
- Add Targets Declaratively

Servers, Storage and Network | **Targets on Hosts** | Advanced: Discovery Modules

Search

View | Collection Schedule | Diagnostic Details | Discover Now | Discovery Modules | Detach

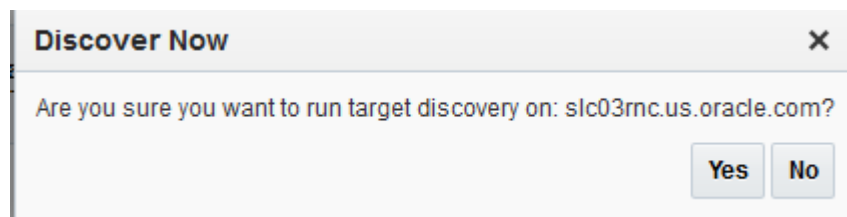
Host	Collection Schedule	Discovered Targets	Managed Targets	Enabled Discovery Modules	Most Recent Ended On
msp52072.us.oracle.com	Every 1 Day	16	3	5	Dec 7, 2015 10:54:38 PM PST
slc03rnc.us.oracle.com	Every 1 Day	17	13	1	Dec 8, 2015 3:16:00 PM PST
slc05ynf.us.oracle.com	Every 1 Day	5	11	1	Dec 1, 2015 2:16:24 AM PST
slc06fdt.us.oracle.com	Every 1 Day	4	31	5	Dec 7, 2015 1:35:04 PM PST

Rows Selected 1 | Hosts 7

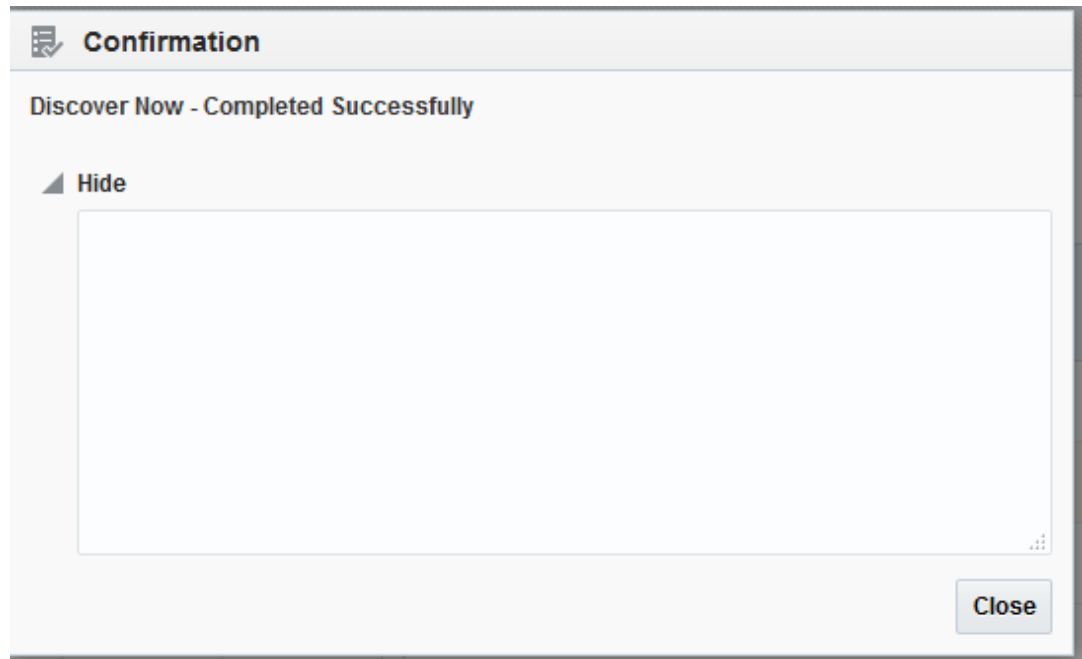
The **Target Discovery (Agent Based)** window opens.

- Click **OK** in the **Discover Now** dialog to confirm that you want to run the discovery.

Figure 4-5 Confirming the discovery



- A confirmation dialog appears on successful discovery of the host. Click **Close** to dismiss the confirmation dialog.

Figure 4-6 Host discovery confirmation dialog

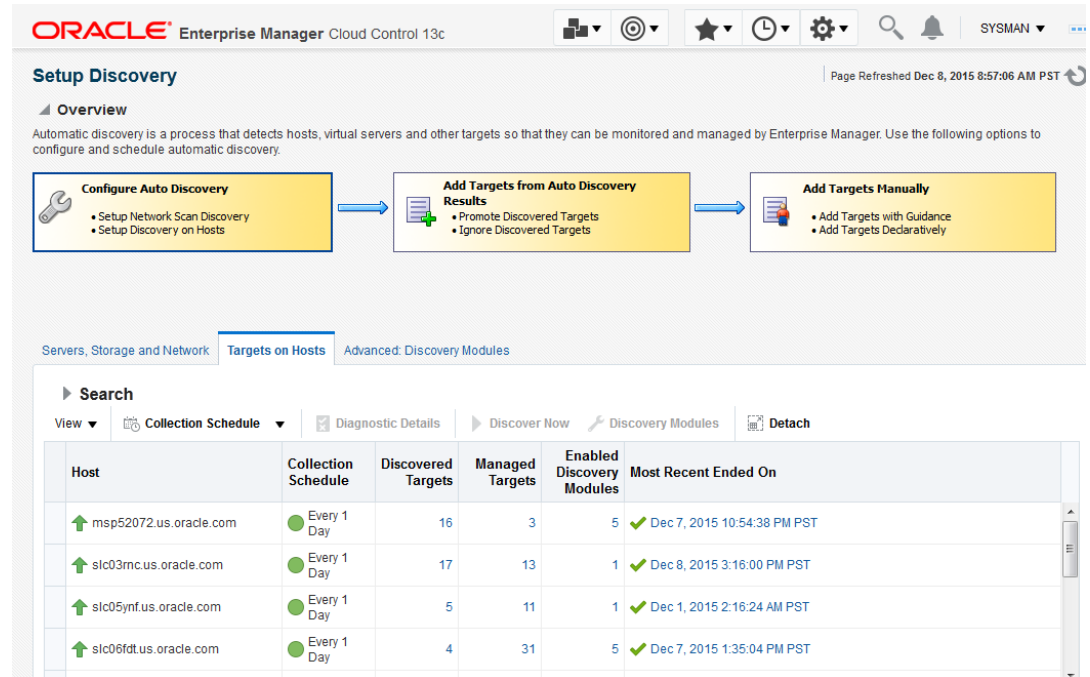
Promoting Targets

To promote targets so they can be managed:

1. Log in to Enterprise Manager.
2. Choose **Setup**, and then **Configure Auto Discovery**.

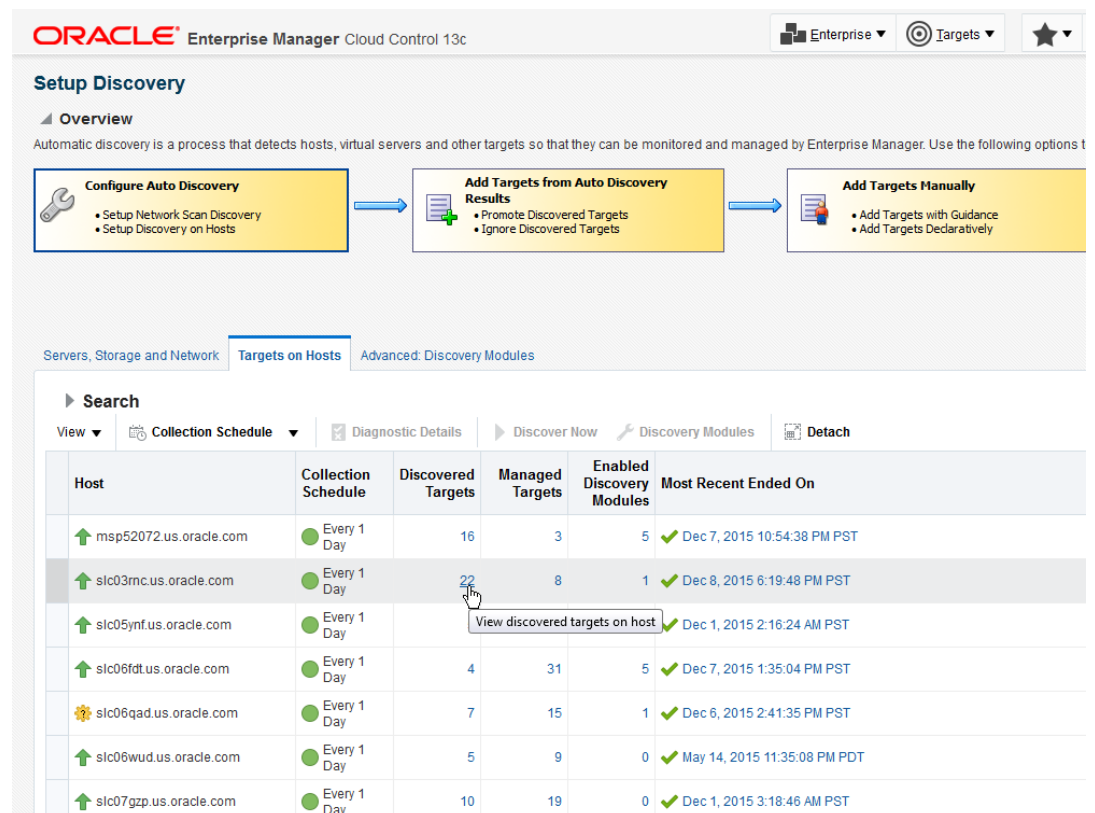
The **Setup Discovery** window opens. Go to the **Targets on Hosts** tab.

Figure 4-7 Setup Discovery window



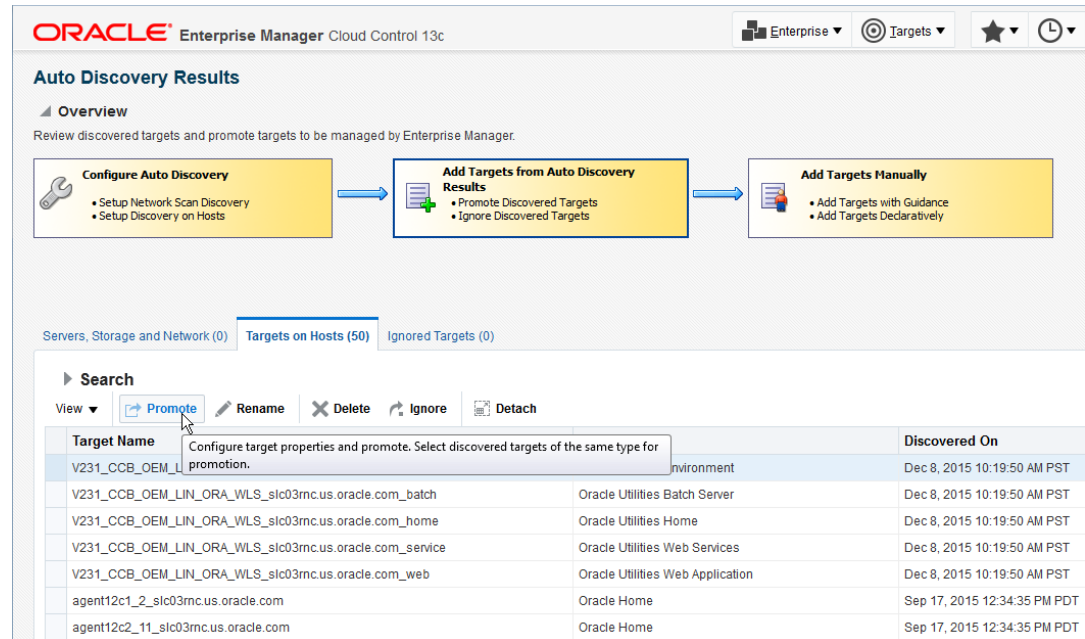
- For the host on which the discovery was run, click on the number that is in the **Discovered Targets** column.

Figure 4-8 Choosing a target



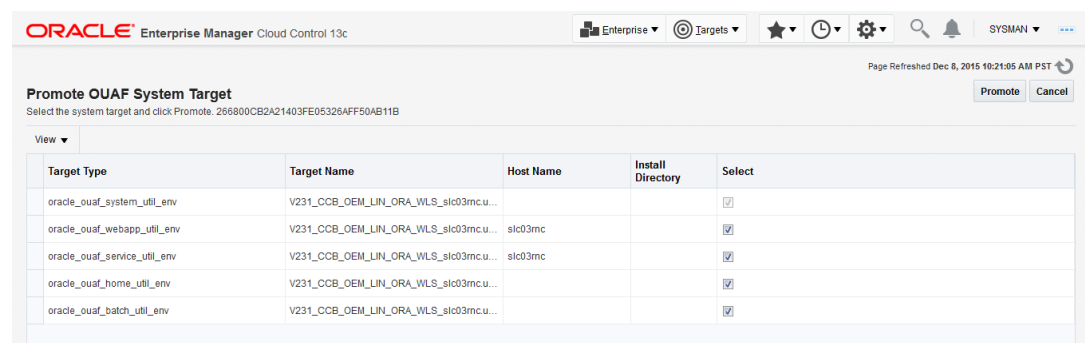
- A list of targets that were discovered but not yet promoted is displayed. Select the target you want to promote, then click the **Promote** button.

Figure 4-9 Promoting the target



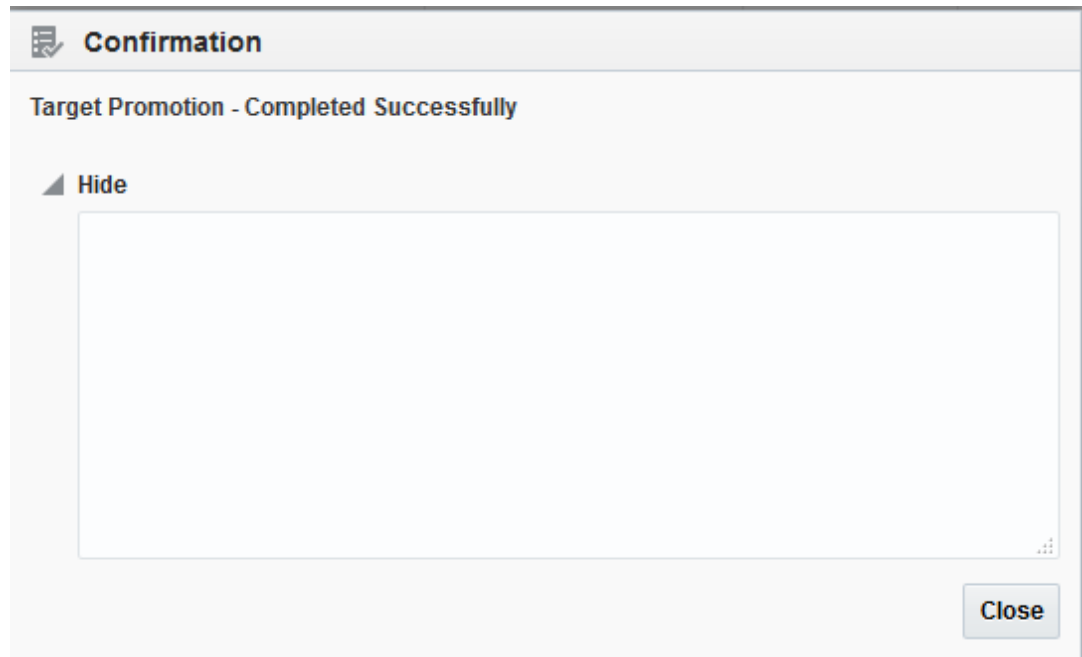
- All related members of the target system are shown and promoted at the same time. Click the **Promote** button.

Figure 4-10 Unmanaged system targets



- A confirmation dialog appears when the promotion is successful.

Figure 4-11 Confirmation dialog



7. Click **Close** to dismiss the confirmation dialog.
8. If any changes are made to the environment configuration using the command-line utilities (e.g., `configureEnv.sh/cmd`), the corresponding changes must also be made to the target properties. The quickest way to do this is to remove the target and perform the discovery and promotion process. You can also make changes by choosing **Target**, and then **Setup**, and then **Monitoring Configuration** and making the appropriate updates on the UI page.

Figure 4-12 Monitoring Configuration page



Post-Promotion Tasks

The following tasks are required after a target is promoted.

1. **Configure monitoring credentials.** This task creates the monitoring credentials for the web application, web services, and batch server targets. It involves navigating to **Setup**, and then **Security**, and then **Monitoring Credentials** and enter the JMX credentials for all three target types. For example, the following steps configure the credentials for the batch server. Follow the same steps for the web application and web services targets.
 - a. Select the target type and click the **Manage Monitoring Credentials** button.

ORACLE Enterprise Manager Cloud Control 13c

Security

Monitoring Credentials

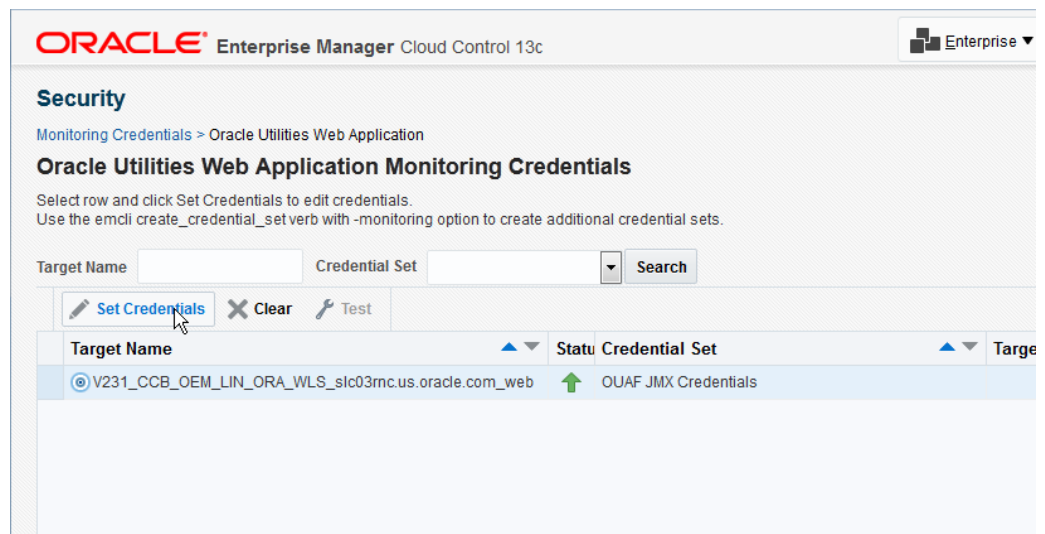
Select target type and click Manage Monitoring Credentials to set/view monitoring credentials for target in

Target type Search

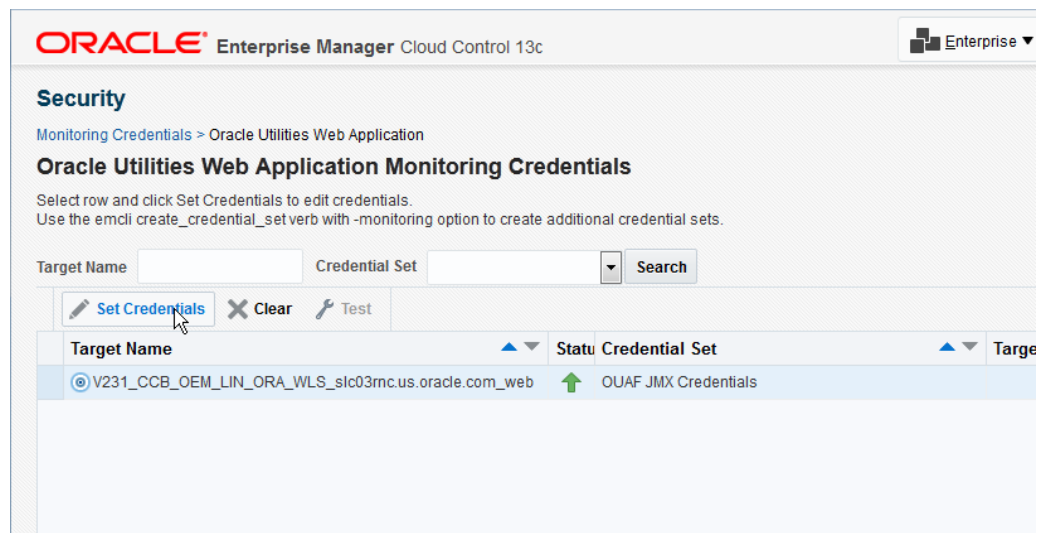
[Manage Monitoring Credentials](#)

Target Type	Total Targets
Listener	1
OMS and Repository	1
Oracle HTTP Server	1
Oracle Management Service	1
Oracle Utilities Batch Server	1
Oracle Utilities Web Application	1
Oracle Utilities Web Services	1
Oracle WebLogic Domain	6
Oracle WebLogic Server	12

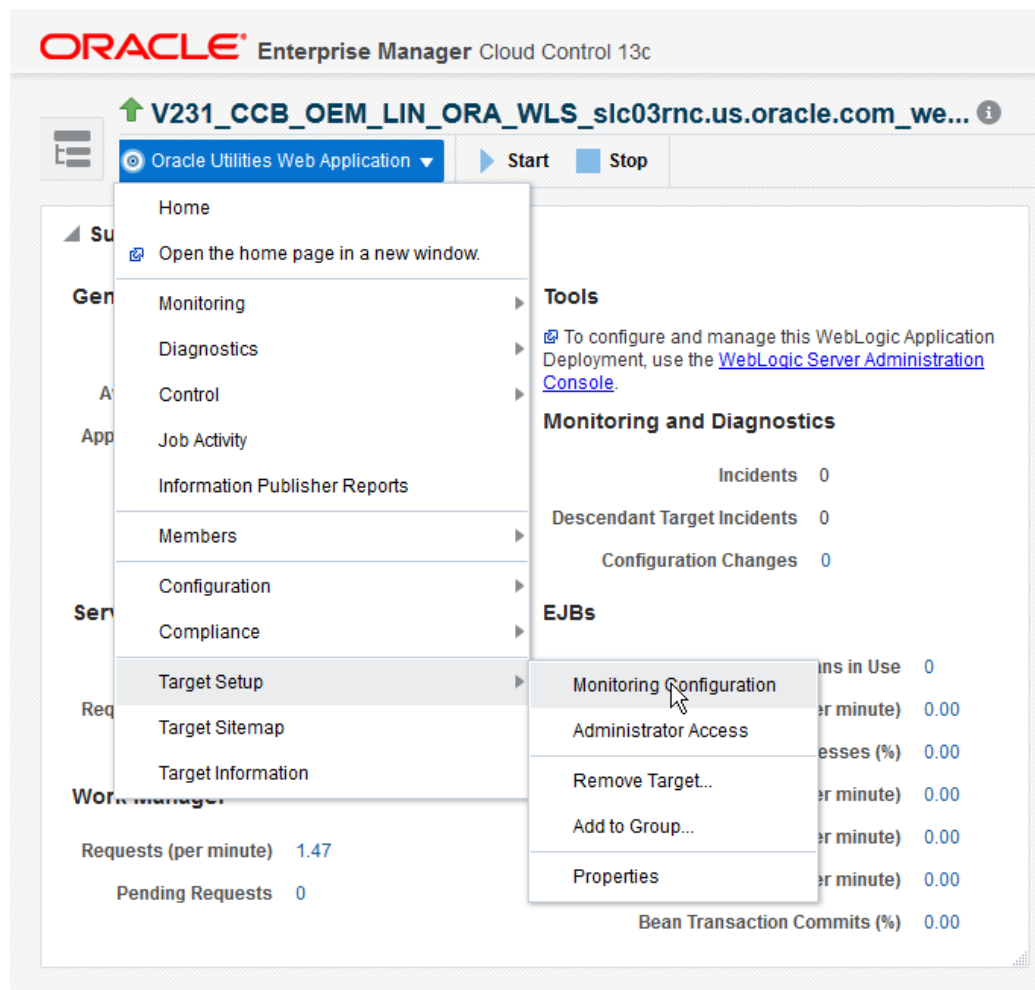
- b. Select the target and click the **Set Credentials** button.



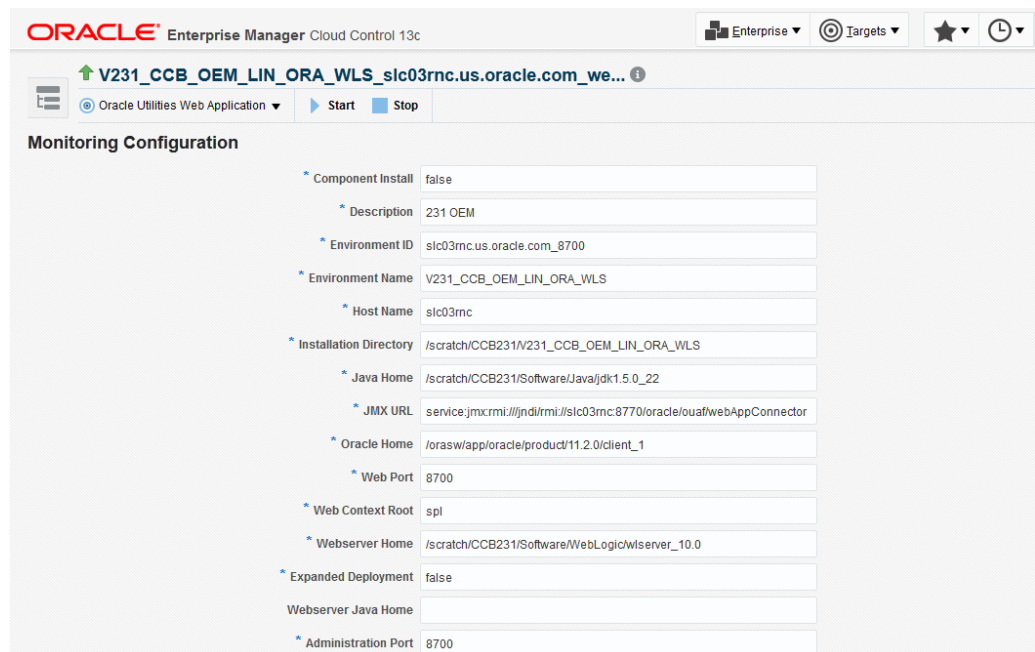
- c. Enter the JMX credentials. This should match the JMX credentials of the OUAF environment.



- d. If you prefer to use Rest API option, enter the JMX http credentials. This should match the JMX http credentials of the OUAF environment.
 - e. Repeat for the Web application and Web services targets.
2. **Set up monitoring configuration.** For all Framework version 2.2.0-based environments, ensure that the target monitoring configuration contain the appropriate settings for Java Home and Oracle Home, Web Server Home and Web Server Java Home values. These are the environment variables that are set in the host before you run splenviron.cmd/sh. Note that Web Server Home is the location on which the WebLogic software is installed (e.g., /spl/middleware10.3.3./wlserver_10.3). Web Server Java Home is the Java location that is used as JAVA_HOME by the Web Server. For WebLogic servers on Linux, it is same value as JROCKIT_HOME. Set up monitoring configuration for all target types.
 - a. For example, to setup the monitoring configuration for the batch server, first click on the target drop-down on the upper left, then choose **Target Setup**, and then **Monitoring Configuration**.



b. Then enter the appropriate information:



c. Repeat for the Web application and Web services targets.

Viewing a Target's Home Page

To view a target's home page:

1. Log in to Enterprise Manager.
2. Click **Targets**, and then **All Targets**.

Figure 4-13 Viewing all targets

The screenshot shows the Oracle Enterprise Manager Cloud Control 13c interface. The 'Targets' menu is open, highlighting 'All Targets'. The main content area shows the 'Enterprise Summary' with a pie chart indicating the status of 82 targets: 52% Up (43), 35% Down (29), and 12% Unknown (10). The 'Inventory and Usage' section is currently empty, displaying 'No data to display'.

3. To view its home page, locate and double-click a target from the sortable and searchable **All Targets** list.

Figure 4-14 All Targets list

The screenshot shows the 'All Targets' page in Oracle Enterprise Manager Cloud Control 13c. The page features a 'Refine Search' sidebar on the left and a main table of targets. The table has columns for 'Target Name', 'Target Type', and 'Target Status'. The targets listed include various Oracle Utilities servers, Oracle Cloud instances, database instances, and Oracle Utilities web services. The 'Target Status' column shows icons representing the status of each target, such as green up arrows for 'Up', red down arrows for 'Down', and a yellow lightning bolt for 'Unknown'.

Target Name	Target Type	Target Status
slc06fdt.us.oracle.com	Host	Up
slc06fdt.us.oracle.com:3872	Agent	Up
slc06fdt.us.oracle.com:4889_Management_Service	Oracle Management Service	Up
slc06fdt.us.oracle.com:4889_Management_Service_CONSOLE	OMS Console	Up
slc06fdt.us.oracle.com:4889_Management_Service_PBS	OMS Platform	Up
slc06gad.us.oracle.com	Host	Up
slc06gad.us.oracle.com:3872	Agent	Unknown
slc06wud.us.oracle.com	Host	Up
slc06wud.us.oracle.com:1830	Agent	Up
slc07gzz.us.oracle.com	Host	Up
slc07gzz.us.oracle.com:3872	Agent	Up
Subnet-10.242.80.0/21	Systems Infrastructure Network	N/A
Subnet-10.244.152.0/21	Systems Infrastructure Network	N/A
Subnet-2606:b400:2010:504a:0:0:0:0/64	Systems Infrastructure Network	N/A
Subnet-2606:b400:2010:604d:0:0:0:0/64	Systems Infrastructure Network	N/A
V231_CCB_OEM_LIN_ORA_WLS_slc03mc.us.oracle.com	Oracle Utilities Environment	N/A
V231_CCB_OEM_LIN_ORA_WLS_slc03mc.us.oracle.com_batch	Oracle Utilities Batch Server	Up
V231_CCB_OEM_LIN_ORA_WLS_slc03mc.us.oracle.com_home	Oracle Utilities Home	N/A
V231_CCB_OEM_LIN_ORA_WLS_slc03mc.us.oracle.com_service	Oracle Utilities Web Services	Up
V231_CCB_OEM_LIN_ORA_WLS_slc03mc.us.oracle.com_web	Oracle Utilities Web Application	Up
WebLogicServer10_3_6_0_slc05mf.us.oracle.com_4966	Oracle Home	N/A
WebLogicServer10_3_6_0_slc06fdt.us.oracle.com_9176	Oracle Home	N/A
WebLogicServer10_3_6_0_slc06gad.us.oracle.com_4008	Oracle Home	N/A
WebLogicServer10_3_6_0_slc06wud.us.oracle.com_4008	Oracle Home	N/A
webtier12c1_23_slc06fdt.us.oracle.com	Oracle Home	N/A

Environment Target Home Page

Figure 4-15 Environment Target Home Page

In the **All Targets** list under **Applications** you can find the target type **Oracle Utilities Environment** targets. This is a system target whose members comprise other targets that make up the. The page is divided into five regions. The regions are:

- **System Properties.** Contains basic information about the system.
- **System Availability.** Contains a list of all members of the system including availability.
- **Job Summary.** Contains summary information about job executions. This includes counts of all target members of the system.
- **Job Activity.** This region lists all submitted jobs.
- **Incidents & Problems.** *Problems* are classified as issues that cause the plug-in to malfunction or throw errors and exceptions. *Incidents* are issues that need not necessarily impact plug-in operations, but are related to the target being monitored. Most incidents are thrown when certain defined criteria, such as thresholds, are met. If, for example, the administrator sets a threshold of 95 percent for disk space usage, an incident is reported when that level of usage is exceeded.

Oracle Utilities Application Framework Target Home Page

The OUAF target home page models the installation directory, also referred to as **SPLBASE**. There is no system availability as this metric is not applicable to directories. It contains the following regions.

- **System Properties.** Contains basic information about the ouaf home directory.
- **Job Summary.** Contains summary information about job executions.

- **Job Activity.** This region lists all submitted jobs.
- **Incidents & Problems.** *Problems* are classified as issues that cause the plug-in to malfunction or throw errors and exceptions. *Incidents* are issues that need not necessarily impact plug-in operations, but are related to the target being monitored. Most incidents are thrown when certain defined criteria, such as thresholds, are met. If, for example, the administrator sets a threshold of 95 percent for disk space usage, an incident is reported when that level of usage is exceeded.
- **Incident Summary.** Summary information and messages regarding incidents recorded.

Ensure Collection of Installed Product Configuration Information

Many of the features in this product rely on information about products that have been installed. This is collected as part of the Enterprise Manager's Metric Configuration Collection. To ensure that this has been collected (and to avoid execution errors on certain features), go to **Target**, and then **Configuration**, and then **Last Collected** from the **Target Home** page, then choose **Actions**, and then **Refresh**. This action triggers a refresh of the configuration metrics so that the common information region is complete.

Figure 4-16 Collecting Target Configuration

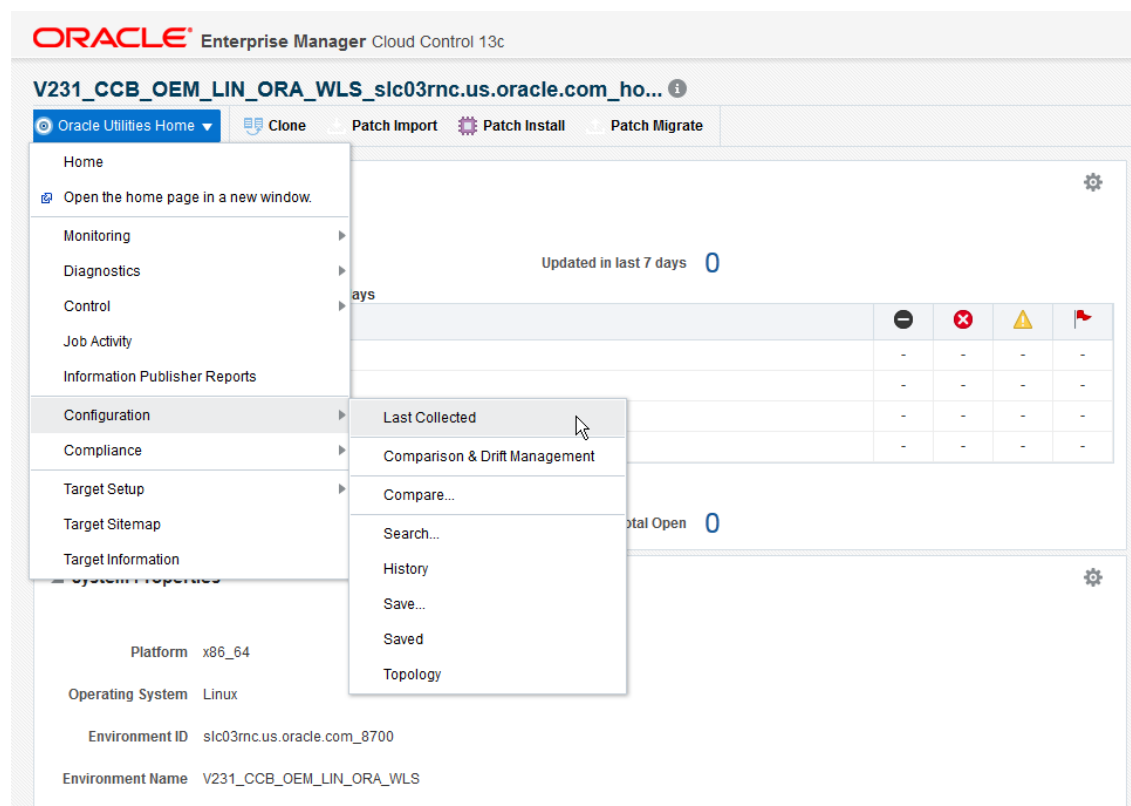
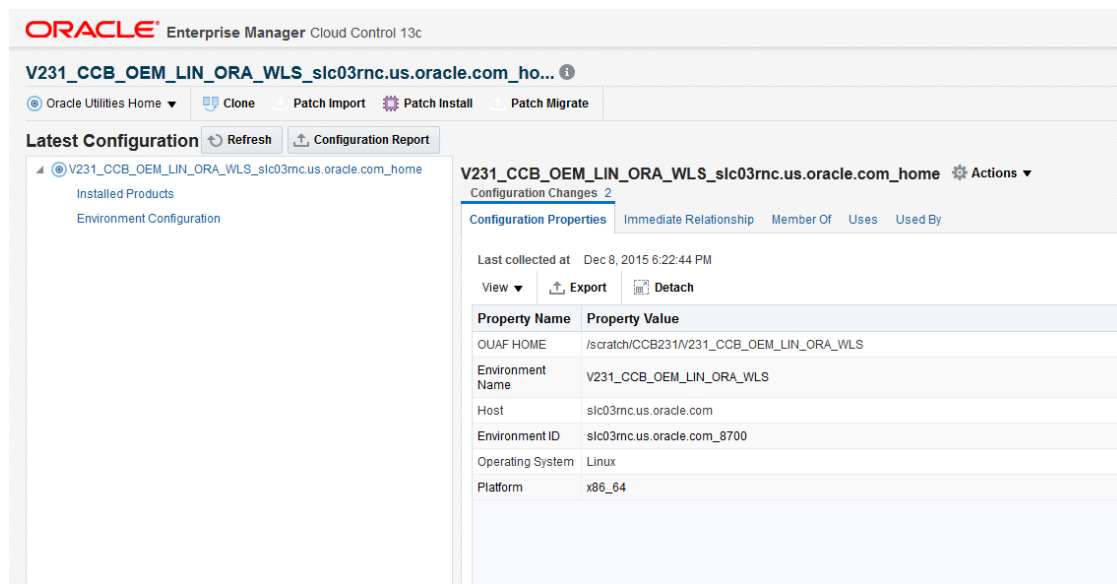


Figure 4-17 Configuration Properties



The screenshot shows the Oracle Enterprise Manager Cloud Control 13c interface. The target is identified as V231_CCB_OEM_LIN_ORA_WLS_slc03rnc.us.oracle.com_home. The Configuration Properties section is active, displaying a table with the following data:

Property Name	Property Value
OUAF HOME	/scratch/CCB231/V231_CCB_OEM_LIN_ORA_WLS
Environment Name	V231_CCB_OEM_LIN_ORA_WLS
Host	slc03rnc.us.oracle.com
Environment ID	slc03rnc.us.oracle.com_8700
Operating System	Linux
Platform	x86_64

Target Home and Performance Monitor Pages

The system members that gather performance information are the runtime targets with target type web application, web services, and batch server. Their target home pages contain performance metrics and other information pertinent to the particular target type.

Target monitoring can be performed via JMX or REST API. You can prefer to use REST API if you have firewall restrictions. Details, to enable "JMX over REST" feature, are available in Installation documentation.

About Performance Monitors

Application deployments that are available for discovery in Enterprise Manager for Oracle Utilities include managed beans (MBeans) that are accessed with Java Management Extensions (JMX) to retrieve metrics and measurements for batch and application-level performance monitoring.

Three target types—[Web Application](#), [Web Services](#), and [Batch Server](#)—contain the connection information among their properties to allow collection of detailed statistics over JMX.

The Web Services Home Page

The Web Services Home page comprises five regions:

- **Called Services:** This region lists the services that were called along with such metrics as Minimum, Maximum, and Average execution times, number of times called, and information about the last call. It also has the following three command buttons:

- **Add to Watchlist:** You can select certain services to watch and click the "Add to Watchlist" button to add it to the **Service Watchlist** area.
- **Refresh:** Refreshes the **Called Services** table from the server.
- **Reset Statistics:** Resets all the counters to zero; it will also re-initialize the **Called Services** list.
- **Service Watchlist:** This table displays the list of services that you would like to watch. It supports a **Delete** button to remove the service from the watchlist.
- **Graph Area:** Displays the **Status** of the service. This is a customizable area in which the customer can add various monitoring charts. By default it displays the **Status** of the Business Application Service.

The screenshot displays the Oracle Enterprise Manager Cloud Control 13c interface. The top navigation bar includes the Oracle logo, version information, and various utility icons. The main content area is titled "Called Services" and features a table with the following data:

Select	Service Name	Service Type	Min Time	Max Time	Average Time	Num
<input type="checkbox"/>	CILENAWP	READ	6.0	763.0	263.33333333333333	3
<input type="checkbox"/>	CILES0BP	READ	30.0	8632.0	2903.6666666666665	3
<input type="checkbox"/>	F1-OEMWEBTARGET	READ	64.0	64.0	64.0	1
<input type="checkbox"/>	Manuul_loginService	READ	749.0	749.0	749.0	1

Below the table is a "Service Watchlist" section with a "Delete" button and a "No Data Available" message. To the right, there is a "Service Name:" label above a line graph showing a constant value of 1.0 over time. The graph's x-axis represents time from 12:00 AM to 09:00 on December 08, 2015. A "Table View" link is located at the bottom right of the graph area.

Like other monitoring pages in this release, this UI is customizable. The user can customize the UI by clicking the **Customize** icon at the top right hand corner:



Both the layout and content of the page can be changed.

Web Application Home Page

The Web Application target type uses the Jvmsystems MBean's ThreadMXBean and MemoryMXBean to retrieve the following performance metrics:

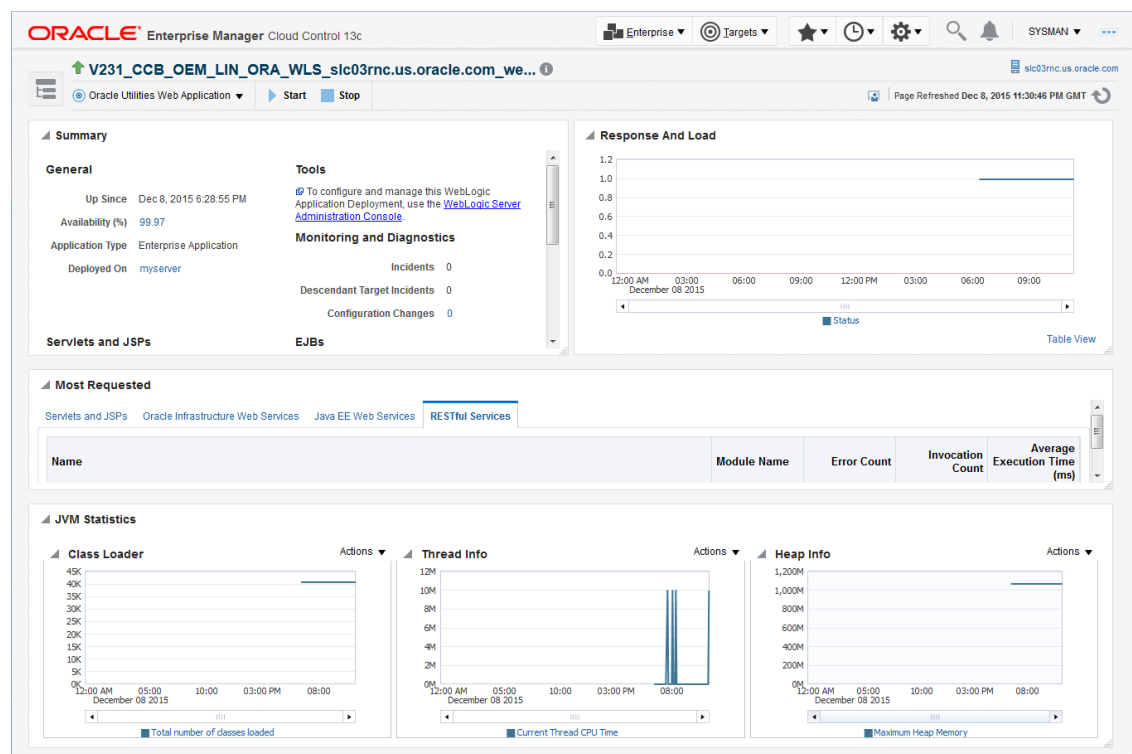
- **From ThreadMXBean:**
 - ThreadCount
 - PeakThreadCount
 - DaemonThreadCount

- CurrentThreadCPUTime
- CurrentThreadUserTime
- **From MemoryMXBean:**
 - HeapMemoryUsage(init)
 - HeapMemoryUsage(max)
 - HeapMemoryUsage(used)
 - NonHeapMemoryUsage(init)
 - NonHeapMemoryUsage(max)
 - NonHeapMemoryUsage(used)

The Web Application Server Home page comprises four regions:

- **General Information Region:** This is the summary of the overall status of the Web Application. It tracks close to the General Information Region in the J2EE Application Server target home. The information is extracted from **ServerRuntimeMBean**. This region reuses the Deployment Summary Region provided by the Fusion Middleware Plug-in.
- **Response And Load** shows a simple graphic indicating historic availability and load.
- **Performance Region:** This region contains performance information collected from ServletRuntimeMBean, WsseOperationRuntimeMBean, and WebAppComponentRuntimeMBean for various JSP pages. This region reuses the Most Requested Region provided by the Fusion Middleware Plug-in.
- **JVM Statistics Region:** This region displays a set of standard JVM statistics acquired from JVMSystems MBeans in a chart format. The user can customize these graphs to display any of the other metrics that are collected.

Figure 4-18 Web Application Home page



Like other monitoring pages in this release, this UI is customizable. The user can customize the UI by clicking the **Customize** icon in the top right-hand corner:



Both the layout and content of the page can be changed.

Batch Server Home Page

The Batch Server Home Page allows you to monitor thread pools, nodes, and batch process details.

Batch processes are monitored using Java Management Extensions (JMX), which is provided by the Oracle Utilities Application Framework (OUAF), and performance monitoring is supported only for products that are based on OUAF 2.2 or later.

In addition to monitoring batch processes, this feature can shut down thread pools, cancel thread operations, and provides an option to set alerts based on batch metrics.

Configuring and Connecting to JMX on an OUAF-based Product

Use this procedure only for monitoring performance for products that are based on OUAF 4.2 or later. Using it for other products will cause the process to abort with an "Operation not supported" error.

1. Obtain BATCH_RMI_PORT and other variables from the ENVIRON.INI file as described in the following table.

Table 4-1 Common Information for JMX Connections

Field	Comment	Source
Batch Mode	Execution Mode	BATCH_MODE (ENVIRON.INI)
Cluster Address	Cluster Address	COHERENCE_CLUSTER_ADDRESS (ENVIRON.INI)
Cluster Port	Cluster Port	COHERENCE_CLUSTER_PORT (ENVIRON.INI)
Batch JMX Port	RMI Port for connection	BATCH_RMI_PORT (ENVIRON.INI)
Online Batch Enabled	Whether Online Batch is enabled	BATCHENABLED (ENVIRON.INI)
Online Batch Threads	Number of threads allocated to DEFAULT threadpools	BATCHTHREADS (ENVIRON.INI)
Online Batch Daemon	Whether Online Batch Daemon is enabled	BATCHDAEMON (ENVIRON.INI)

2. Obtain the JMX user name and password from the following files contained in SPLEBASE/scripts:
 - **Access file:** ouaf.jmx.access.file
 - **Encrypted password file:** ouaf.jmx.password.file.
3. Connect to JMX using the Java API class `javax.management.remote (JMXConnector, JMXServiceURL)`.

- If connecting to a batch server target, use the URL:

```
jmx:rmi:///jndi/rmi://server:port/spl/fw/jmxConnector
```

- If connecting to a web application target, use the URL:

```
jmx:rmi:///jndi/rmi://server:port/oracle/ouaf/webAppConnector
```

- If connecting to a web services target, use the URL:

```
jmx:rmi:///jndi/rmi://server:port/oracle/ouaf/ejbAppConnector
```

If BATCH_RMI_PORT is not available, the error message "JMX support not configured" is issued. If a connection is not available, the error message "JMX Service not available" is issued.

4. Use the following stub/beans to obtain values from the server:
 - com.splwg.base.support.batch.management.ActiveBatchMBean
 - com.splwg.base.support.batch.management.ActiveBatchJobMBean
 - com.splwg.base.support.batch.management.ActiveClusteredNodeMBean
 - com.splwg.base.support.batch.management.ActiveCobolBatchThreadMBean
 - com.splwg.base.support.batch.management.ActiveGridNodeMBean
 - com.splwg.base.support.batch.management.ActiveJavaBatchThreadMBean

Viewing and Managing Batch Processes

The Batch Monitor page comprises four sections:

- [Common Information](#)
- [Threadpool Summary](#)
- [Active Batch Jobs](#)
- [Batch Details](#)

Figure 4-19 Batch Monitor page

The screenshot displays the Oracle Enterprise Manager Cloud Control 13c interface for the Batch Monitor page. The page is titled "V231_CCB_OEM_LIN_ORA_WLS_slc03rnc.us.oracle.com_ba...". It features several sections:

- Common Information:** Displays cluster details such as Cluster Name (CLUST_11824), Cluster Address (230.44.11.148), Cluster Port (11825), Batch Mode (CLUSTERED), Batch Daemon (false), and Batch RMI Port (11824). A "Flush All Caches" button is present.
- Threadpool Summary:** A table with columns for Pool Name, Number of Threads, and Number of Members. It currently shows "No Data Available". A "Shutdown Threadpool" button is located to the right.
- Active Batch Jobs:** A table with columns for Threadpool, JVM Name, Node, PID, Date Time Started, Elapsed Time, Status, User, Thread, and Batch Worker. It also shows "No Data Available". Buttons for "Cancel Threads", "Refresh", and "Reset Table" are available.
- Batch Details:** A section with two columns: "Summary" and "Performance Summary". The Summary column lists fields like Batch Code, Batch Description, Thread, Thread Limit, Batch Number, Program Name, Program Type, and Run Type. The Performance Summary column lists fields like Elapsed Time, Date Time Started, Max Execution Attempts, Cancel Requested, Requested By, Records Committed, Records in Error, and Work Unit Size. Buttons for "Cancel Thread" and "Refresh" are present.

Common Information

This section displays information about the cluster you are connected to. It includes the **Cluster Name**, **Cluster Address**, and **Cluster Port**. The section is populated automatically when the page is loaded. **Flush All Caches** flushes all Cache information within the cluster.

Threadpool Summary

This section displays the individual threadpool workers that are up and running and which belong to this cluster.

The following table describes each of the columns in the summary.

Table 4-2 Threadpool Summary

Field	Comment	Attribute
ThreadPool	Name of Thread pool	Name
Available Threads	Available number of Threads	AvailableThreads
Members	Number of Active Members	NumberOfMembers

The section also offers a button to shut down a selected threadpool worker.

Active Batch Jobs

The Active Batch Jobs section displays all currently active batch jobs. This is displayed in the form of a table with the following fields:

Table 4-3 Batch Bean

Field	Comment	Source
Thread Pool	Name of Threadpool	DistThreadPool
JVM Name	Name of JVM	Inherited from previous call
Node	Node running on	Inherited from previous call
Thread	Thread Number	ThreadNumber
Batch Number	Batch Run Number	BatchNumber
Date Time Started	Date Time Job Started	DateTimeStarted
Elapsed Time	Elapsed time since job started	ElapsedTime
Status	Status of Job	Status
User	User used to run job	UserId

When you click on an active batch job, its details populate in the **Batch Details** section.

This section also supports the following actions via buttons:

- **Cancel Threads:** Kills the selected batch job.
- **Refresh:** Refreshes the list of active batch jobs.
- **Reset Table:** Same as Refresh, except it cleans up the list and reloads it.

Batch Details

This section displays all details about the batch job selected in the **Active Batch Job** section. The following table describes the displayed fields:

Table 4-4 Batch Detail

Field	Comment	Source
Summary		
Batch Code	Batch Control Id	BatchCd
Thread	Thread Number	ThreadNumber
Thread Limit	Max number of threads	ThreadCount
Batch Number	Batch Run Number	BatchNumber
Program Name	Program running	ProgramName
Run Type	Type of Run	RunType
Execution Strategy	Execution Commit Strategy	ExecutionStrategyClass
Common Parameters		
Language	Language Code used	LanguageCd
Maximum Commit Records	Commit Frequency	MaximumCommitRecords
Maximum Timeout (min)	Commit Timeout	MaximumTimeoutMinutes

Table 4-4 (Cont.) Batch Detail

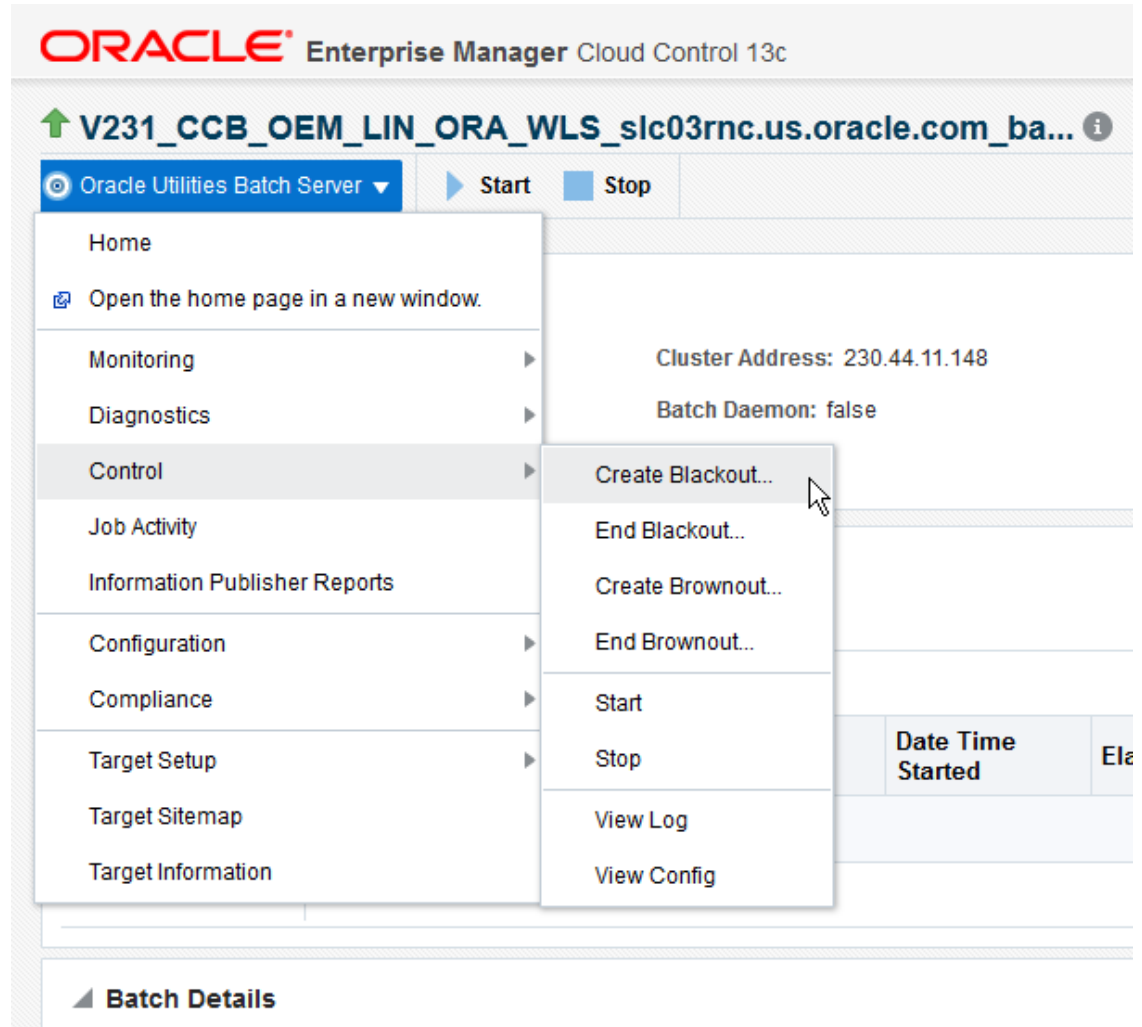
Field	Comment	Source
Business Date	Business Date used for job	ProcessDate
ReRun Number	Rerun Number for reruns	RerunNumber
Thread Pool	Thread Pool allocated to	DistThreadPool
Name	JVM Name	
UserId	User Running Job	UserId
Trace Program Start	Is Tracing on for Start of job?	TraceProgramStart
Trace Program End	Is Tracing on for End of job?	TraceProgramEnd
Trace SQL	Is Tracing on for all SQL in job?	TraceSQL
Trace Standard Out	Is Tracing on for debug messages for job?	TraceStandardOut
Performance Summary		
Elapsed Time	Elapsed Time since start	ElapsedTime
Date Time Started	Date Time Job started	DateTimeStarted
Max Execution Attempts	Number of executions	MaxExecutionAttempts
Cancel Requested	If job has been cancelled recently	CancelRequested
Requested By	If CancelRequested = true then OS userid of person who requested the cancel	CancelRequestedBy
Records Committed	Number of records processed so far	RecordsCommitted
Records in Error	Number of records in Error so far	RecordsInError
Work Unit Size	Size of Work unit within Execution Strategy	WorkUnitSize
Work Unit Size This Run	Work Unit used for this run	WorkUnitSizeThisRun
Work Units Committed	Work Units Committed so far	WorkUnitsCommitted
Work Units In Error	Work Units errored so far	WorkUnitsInError
Work Units Processed	Work Units processes so far	WorkUnitsProcessed
Additional Parameters (List of parameters from SoftParameters)		
Parameter	Parameter Name	Element before = in array
Value	Parameter Value	Element after = in array

The thread details are part of default collections, and only when a **Refresh** button is clicked will the details be refreshed by calling a job or by getting the latest information from the default collections.

Target Control Operations

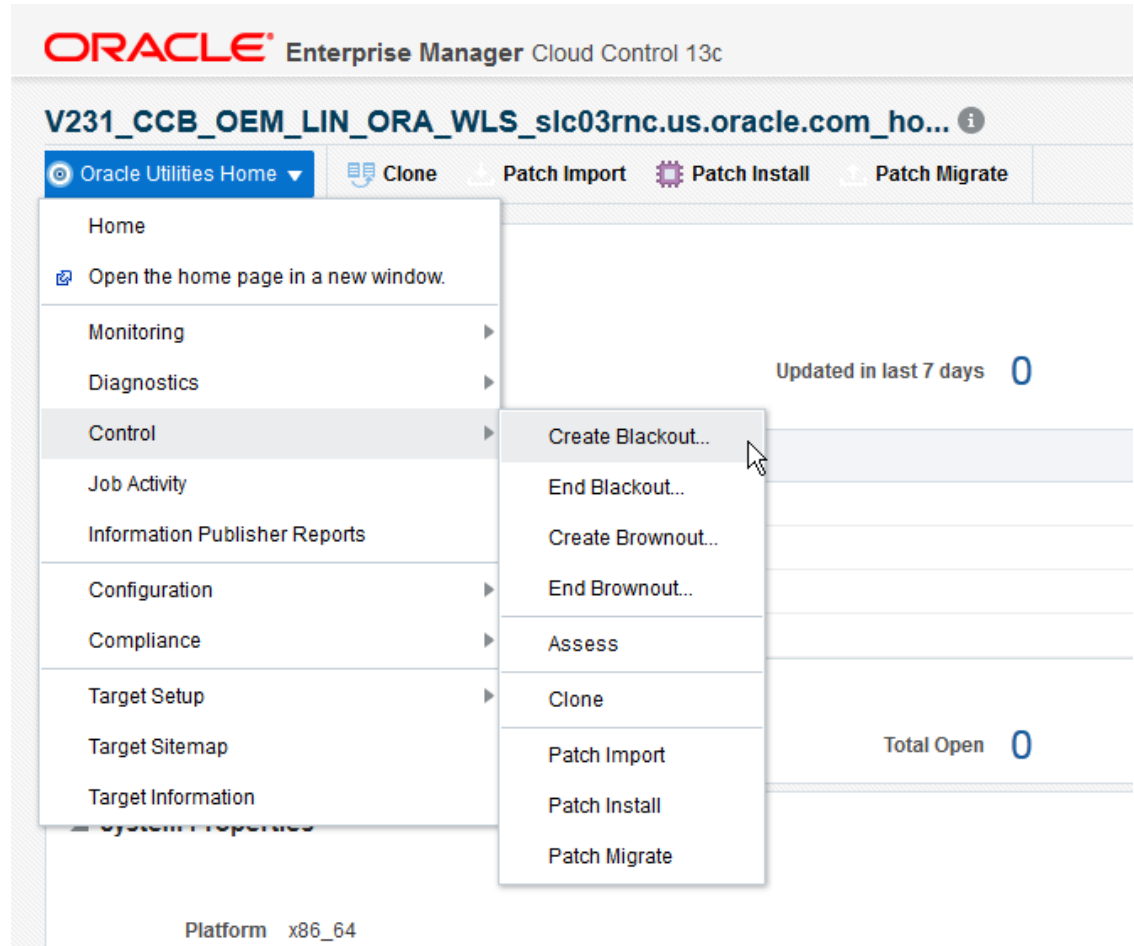
The target controls provide access to common operations performed by the administrator. It includes buttons to start and stop the application server and batch server. These buttons are available on the applicable target home page and on the target control submenu.

Figure 4-20 Common Target Controls



Based on the target type, you can view log and configuration files, assess a target, clone an ouaf home target (application server only), or manage the installation or migration of patches. These features can be found on the target control submenu.

Figure 4-21 Procedure-based Target Control Operations



These are job-based or deployment procedure-based operations that run the appropriate utilities that an administrator would normally submit from the command line. As such, it is the administrator's responsibility to ensure that jobs submitted do not conflict with each other. For example, during patch installation, the Start button will still be available, so if a start job is submitted, that operation will interfere with the running patch process (and vice-versa).

The following sections describe the various features available using start/stop and the target controls.

Start/Stop

Start and Stop allows the operator to start or stop a given target. The start/stop buttons are prominently displayed on the target home page.

View Logs

The View Logs feature allows the operator to view the contents of log files generated at the application server level.

View Configuration Files

The View Configuration Files function lets the operator view the contents of configuration files used by the application server.

Assess

The Assess function assesses an environment's configuration.

Import Patches

Patching an environment involves three steps:

1. Download the patches from My Oracle Support (performed manually outside of Enterprise Manager for Oracle Utilities).
2. Import the patches into Enterprise Manager for Oracle Utilities (via the **Import Patches** button on the **Common Operations** panel).
3. Install/Migrate the patches.

The Import Patches function must be used for the second step. This function is required for patch installs and patch migration within the Enterprise Manager for Oracle Utilities plug-in.

Install Patches

The Install Patches function is used to install patches that have already been imported into the Enterprise Manager for Oracle Utilities plug-in in the current environment.

Migrate Patches

The Migrate Patches function is a special form of patch installation wherein a source environment is compared to a destination environment. The source environment is used to identify patches that the administrator intends to install in the current/destination environment. The identified patches should have been imported previously for the current target's product, release and platform.

Detailed Description of Target Control Operations

Start/Stop

As mentioned earlier, start/stop allows operators to startup/shutdown a target. In a way, it also confirms that the environment is properly installed by checking that the configuration files contain all the values necessary to bring up/down the environment. These are available on the target home pages for the batch server target types.

These buttons open a dialog in which the administrator enters the credentials to connect to the server for the purpose of either starting or stopping the target. For the web application and web services, we need to use the "Application Deployment" targets discovered using the Oracle Fusion middleware/weblogic domain plugin.

Figure 4-22 Credentials Input

ORACLE Enterprise Manager Cloud Control 13c

Credentials Input

Stop: Credentials Input

Host Credentials

Credential Preferred Named New

Credential Name: GBU

Attribute	Value
Username	aeraflup
Password	*****
Privilege Type	SUDO
Run As	gbuora

More Details

OUAF Credentials

Credential Preferred Named New

* Username: system

* Password: *****

* Confirm Password: *****

✓ Save As: NC_ORACLE_O_2015-12-08-162309

The types of credentials that can be selected are:

- Credentials to connect to the host on which environment is running (e.g., `cissys` or `oracle`)
- Credentials that were used to configure the environment (e.g., `cissys`)

You can either enter these values or select a saved credential.

When credentials are entered, clicking **OK** executes the selected command (**Start** server or **Stop** server). Clicking **Cancel** or closing the dialog exits without starting (or stopping) the server.

Note

The **Start/Stop** buttons submit jobs that perform the same function provided by the `sp1.sh/sp1.cmd` start/stop command-line utility. Thus, the environment in which you are working must be set up so that these utilities are available and properly functioning.

Environment Assessment

Environment assessment allows administrators to perform basic validation of correct installation of Oracle Utilities Application Framework Home target page.

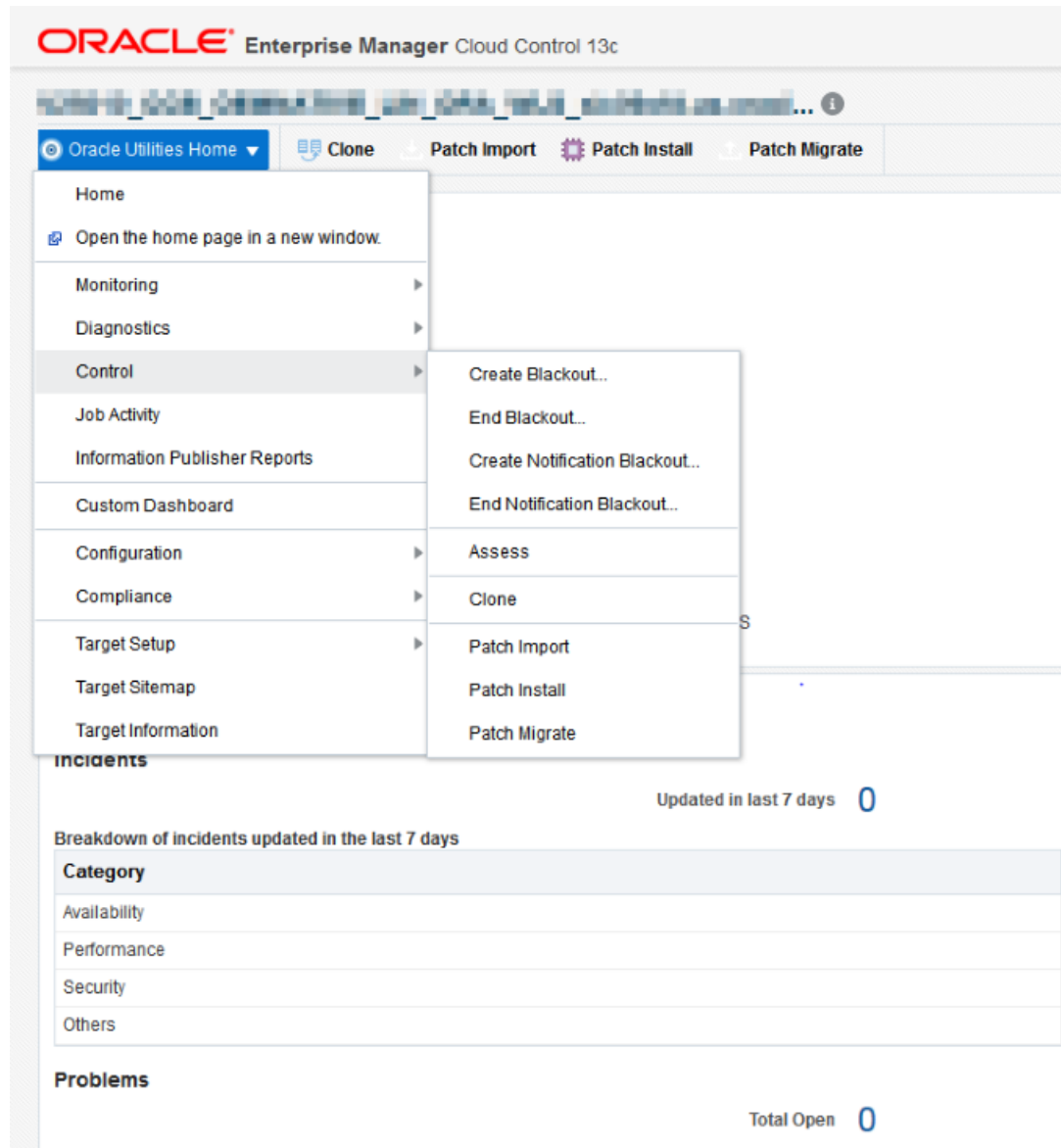
The following files, settings, and definitions are checked:

- Correct positioning of key files
- Key configuration settings
- Correct setting of security definitions
- Patch validation

To assess the current environment:

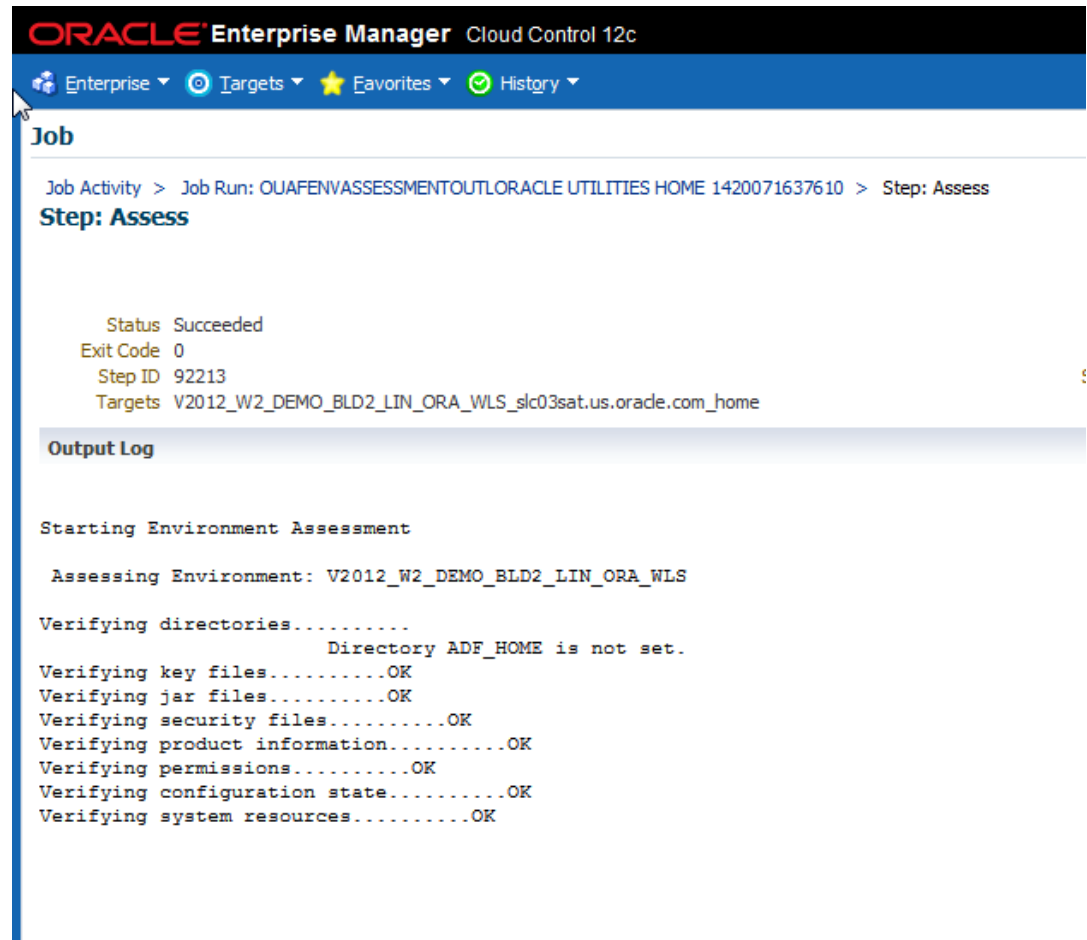
1. Open the Oracle Utilities Application Framework Home target page. On the **Target** dropdown, choose **Control**, and then **Assess**.

Figure 4-23 OUAF Home Target page: Assess



2. On the **Credentials** page, choose a set of saved credentials or enter your user name and password, then click **Next** to proceed.
3. You will be directed to the **Job Activity** page, where you can view the results of the assessment job.

Figure 4-24 Environment Assessment: Result

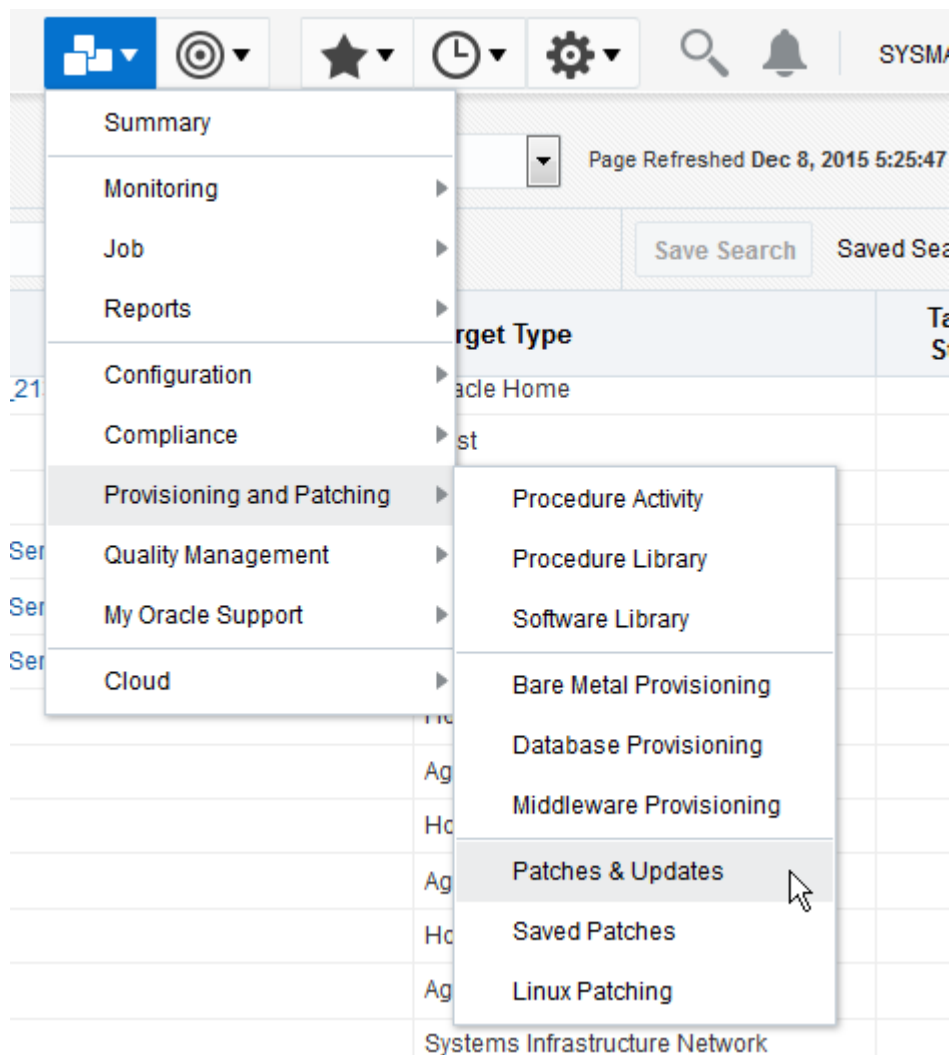


4. Click **Finish** to return to the Oracle Utilities Application Framework Home target page.

Patch Import and Installation

Patching is a three-step process*:

1. **Download** patches from My Oracle Support (MOS): This step is performed through the **My Oracle Support Plug-in** within Oracle Enterprise Manager from the top-level menu, choose **Enterprise**, and then **Provisioning and Patching**, and then **Patching & Updates**.



2. **Import** the downloaded patches: This process allows you to import downloaded patches which are subsequently unpackaged into a format that is compatible with Enterprise Manager for Oracle Utilities's installation process.
3. **Install** the imported patches: This process allows you to import downloaded patches and install them into a target environment, updating relevant files in `$SPLEBASE`. If you deploy manually to the web server, you must perform this step after the installation process completes.

Patch Import/Installation Notes

- In addition to the procedures described in this topic, follow the steps in the [Patching Prerequisite](#) topic before installing patches in Enterprise Manager for Oracle Utilities Release 24.1.1.0.0 and later.

Note

Installation of Service Packs for OUAF products is supported in this release. Review the document *Whitepaper: Service Pack Compliance* before installing any service pack to make sure the service pack is packaged in a compliant manner.

- Read-write access to the download directory is required.

- For patches containing single fixes and hot fixes: Application server patch components are installed using the standard patch install script. Database patch components are installed using a Java version of the standard `CDXPatch.exe` utility.
- Patches containing service packs using the new SP model are now supported. These type of patches contain a file called `Metadata.xml`, which is used by the plug-in to install the service pack.
- During patch installation and patch migration, the installation job copies the individual patch directories from the download staging directory to a directory on the target environment (`$SPLBASE/oem/patch/install/tmp/YYYY-MM-DD-HH-MI-SS`). The subdirectories are sorted by install sequence, e.g., `001-gf`, `002-gf`, `003-sfs`. The job output clearly states the directories from which patch installation occurs.
- During service pack installation, make sure the service pack zip file is the sole content of the download directory.
- During any installation process—service pack, single fixes, rollups—WebLogic environments are shut down automatically using the command-line utility `spl.sh/spl.cmd`. Non-WebLogic environments must be shut down manually.
- Due to packaging differences, only standard single fixes, group fixes and service packs using the new service pack model are supported. An error is generated if you choose an old service pack or rollup for import, or if the single fix or group fix is packaged in a non-standard manner.

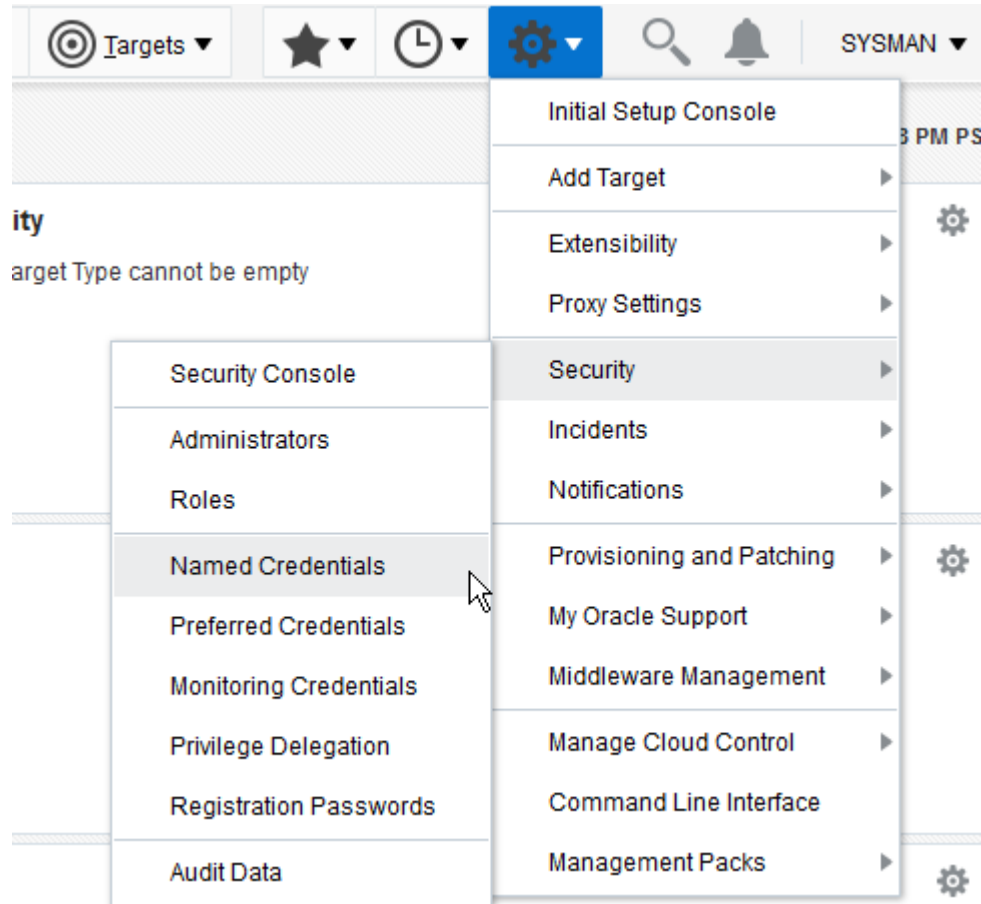
Patching Prerequisite

As of Enterprise Manager for Oracle Utilities Release 24.1.1.0.0, OUAF database credentials are Enterprise Manager for Oracle Utilities stored as a named credential and referenced by the patching procedures. Before patching an OUAF Home target, you must create the OUAF database credentials.

To set up the OUAF database credentials:

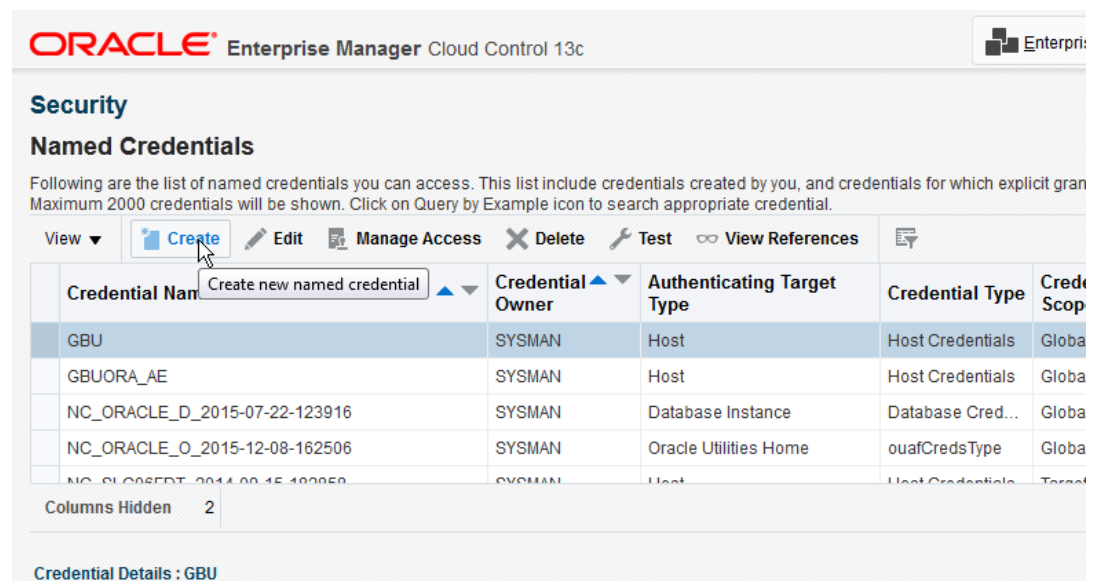
1. Navigate to **Setup**, and then **Security**, and then **Named Credentials**.

Figure 4-25 Navigating to Named Credentials



2. Click the **Create** button.

Figure 4-26 Creating Credentials



3. Enter the appropriate credential information. Set the **Scope** to **Global**. Do not enter a target type or target. When the credentials and **Scope** are set, click **Save**.

Figure 4-27 Entering Credentials

Patch Import

To import patches:

1. Open the **OUAF Home Target Home page** and click the **Patch Import** button.

Figure 4-28 Starting the Patch Import Process

Category	[-]	[X]	[!]	[+]
Availability	-	-	-	-
Performance	-	-	-	-
Security	-	-	-	-
Others	-	-	-	-

2. On the first page of the **Import Patches** walk-through, enter the download directory (the directory on the server where the downloaded zip files are stored when you manually downloaded them from My Oracle Support). The path entered here should be accessible from the server on which the target environment is hosted. After entering the path, click **Next**.

Figure 4-29 Entering the Patch Path

ORACLE® Enterprise Manager Cloud Control 13c

V231_CCB_OEM_LIN_ORA_WLS_slc03rnc.us.oracle.com_home

Patch Download Directory Credentials Schedule Exit

Patch Import: Patch Download Directory Back Step 1 of 4

Overview

Patch Import allows you to import the patches, both Single Fixes and Service Packs, already downloaded from My Oracle Support into Oracle Enterprise Manager's staging area. This will allow the subsequent step of Patch Migration to be able to evaluate patch dependencies and to deploy the patches into target environment from a central repository without the need to re-download them. Enterprise Manager for Oracle Utilities Application Framework supports the import of Single Fixes and Group Fixes.

Patch Download Directory

We recommend using a shared drive to download the patches from My Oracle Support. Please provide here the path to such a download directory. Note this path should be as it appears on the server where Oracle Enterprise Manager is hosted.

* Source Location

3. On the **Credentials** page, choose a set of saved credentials or enter your user name and password, then click **Next** to proceed.

Figure 4-30 Patch Import Credentials

V231_CCB_OEM_LIN_ORA_WLS_slc03rnc.us.oracle.com_home

Patch Download Directory Credentials Schedule Exit

Patch Import: Credentials

Host Credentials

Credential Preferred Named New

Credential Name: GBU

Attribute	Value
UserName	aerattup
Password	*****
Privilege Type	SUDO
Run As	gbuora

[More Details](#)

OUAF Credentials

Credential Preferred Named New

Credential Name: NC_ORACLE_O_2015-12-08-162506

Attribute	Value
UserName	system
Password	*****

[More Details](#)

- On the **Schedule** page, choose to either perform the import operation **Now** or **Later**. If set for **Later**, click **Schedule** to complete the process and schedule the deployment procedure.

Figure 4-31 Scheduling the Patch Import

V231_CCB_OEM_LIN_ORA_WLS_slc03rnc.us.oracle.com_home

Patch Download Directory Credentials Schedule Exit

Patch Import: Schedule

[Back](#) [Step 3 of 4](#) [Schedule](#) [Cancel](#)

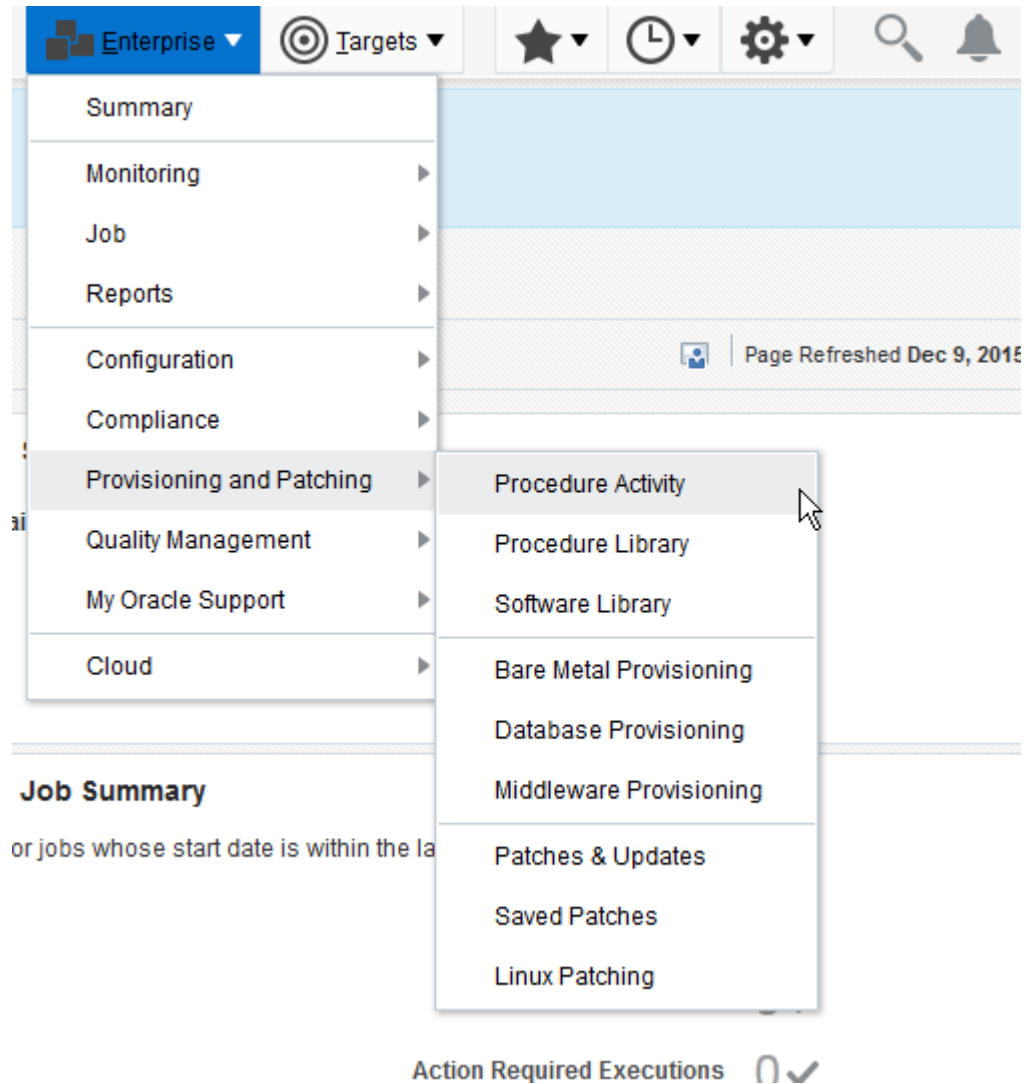
Select a date and time to schedule

Now

Later

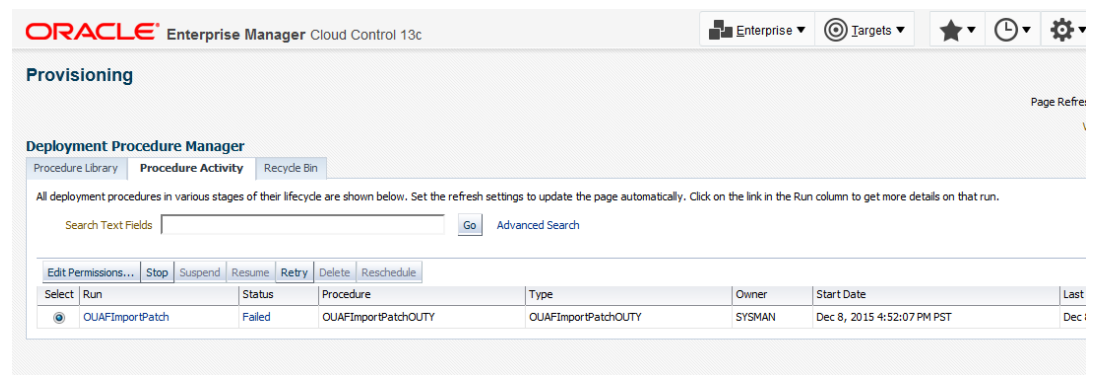
- To check the output, go to **Enterprise**, and then **Provisioning and Patching**, and then **Procedure Activity**.

Figure 4-32 Import Patch Procedure Activity



6. Search the **Procedure Activity** list for the appropriate run item, and click the link.

Figure 4-33 Checking a Patch Import



7. Expand the **Procedure Steps** on the left and review the **Import Patch Structuring / Step** to view the output.

Figure 4-34 Patch Provisioning Procedure Activity page

The screenshot displays the Oracle Enterprise Manager Cloud Control 13c interface. The main heading is "Provisioning" with a sub-heading "Procedure Activity > OUAImportPatch @2015-12-08 18:33:47.56". The procedure name is "Procedure Activity: OUAImportPatch @2015-12-08 18:33:47.56" and it has an elapsed time of 13 seconds. The procedure is "Succeeded".

Key details include:

- Run: OUAImportPatch @2015-12-08 18:33:47.56
- Scheduled: Dec 8, 2015 6:33:56 PM PST
- Elapsed Time: 13 seconds
- Procedure: OUAImportPatchOUTY
- Start Date: Dec 8, 2015 6:33:56 PM PST
- Execution Id: 266DF76B86550DCBE05399C0F00A1DAF
- Owner: SYSMAN
- Last Updated: Dec 8, 2015 6:34:09 PM PST
- Status: Succeeded
- Completed Date: Dec 8, 2015 6:34:09 PM PST

The "Procedure Steps" section shows a table with the following steps:

Select	Name	Status
<input type="checkbox"/>	PatchStructuring	✓
<input type="checkbox"/>	V43010_Z1_OEM_QA_LIN_ORA_WLS_slc09ctq.us.oracle.com	✓
<input checked="" type="checkbox"/>	Import Patch - Structuring	✓

The "Import Patch - Structuring" step is expanded, showing the following details:

- Type: Job
- Start Date: Dec 8, 2015 6:33:59 PM PST
- Elapsed Time: 10 seconds
- Completed: Dec 8, 2015 6:34:09 PM PST
- Date: PST
- Step: Command (Succeeded)
- Start Date: 2015.12.08 18:34:00
- Completed Date: 2015.12.08 18:34:08
- Targets: V43010_Z1_OEM_QA_LIN_ORA_WLS_slc09ctq.us.oracle.com_home
- Log entries:
 - 2015-12-08:18:34:01 -----
 - 2015-12-08:18:34:01 ----- Starting import from /spl/versions/OEM/download to /spl/ve

On completion of the patch import job, the imported zip file is unpackaged in the appropriate staging directory and a *.zip-unpacked file is created.

Example: An FW V4.1.0 patch zip file called p12548444_4100_Generic.zip is imported and placed in /tugbu_oem/download. On completion of the import procedure, the following occurs:

1. /tugbu_oem/download/p12548444_4100_Generic.zip-unpacked is created. This prevents patches that have already been imported from being processed again. If you would like a patch to be re-imported, delete its *.zip-unpacked file.
2. For a single fix or hotfix, /tugbu_oem/download/staging_directory/FW/V4.1.0/multiplatform/FW.V4.1.0-12548444/ 12548444_sf_patch_info.xml is created. This file contains information about the patch. The contents of the file are also placed in the proper product, release, platform, and patch number directory.

For a service pack containing the new SP model, the following file should be present: /tugbu_oem/download/staging_directory/FW/SP/multiplatform/9999999/Metadata.xml.

Patch Import Enhancements

Patch import also includes the identification of patch prerequisites and the ability to download and import them. This feature is available from OUA release 4.3.0 Service Pack 1 and later. All environments on OUA release 4.3.0 Service Pack 1 will have the old patch import flow.

Figure 4-35 Source screen

ORACLE Enterprise Manager Cloud Control 13c

Patch Download Directory

Back Step 1 of 5 Next Cancel

Overview

Patch Import allows you to import the patches, both Single Files and Service Packs, already downloaded from My Oracle Support into Oracle Enterprise Manager's staging area. This will allow the subsequent step of Patch Install and Patch Migration to be able to evaluate patch dependencies and to deploy the patches into target environment from a central repository without the need to re-download them. Enterprise Manager for Oracle Utilities Application currently supports the import of Single Files and Group Files.

Patch Download Directory

We recommend using a shared drive to download the patches, from My Oracle Support. Please provide here the path to such a download directory. Note this path should be as it appears on the server where Oracle Enterprise Manager is hosted.

* Source Location: DEMdownloading1

Figure 4-36 Credentials screen

ORACLE Enterprise Manager Cloud Control 13c

Patch Import: Credentials

Back Step 2 of 5 Next Cancel

Credentials input

Host Credentials

Credential: Preferred Named New

Credential Name: [dropdown]

Attribute	Value
UserName	[input]
Password	*****
Privilege Type	SUDO
Run As	[input]

More Details

OUAF Credentials

Credential: Preferred Named New

* Username: test

* Password: ****

* Confirm Password: ****

Save As: test

Figure 4-37 Prerequisite screen

ORACLE Enterprise Manager Cloud Control 13c

Patch Import: Prerequisite Patch List

Back Step 3 of 5 Next Cancel

Patches listed here are required to be downloaded

Patch Number

Auto download prerequisite patches

The user can choose to download the prerequisite. If not, the user has to uncheck the auto download checkbox.

Figure 4-38 Schedule screen

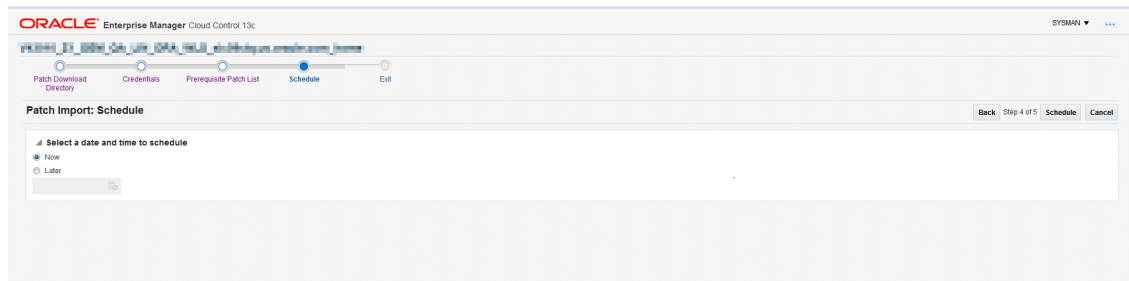
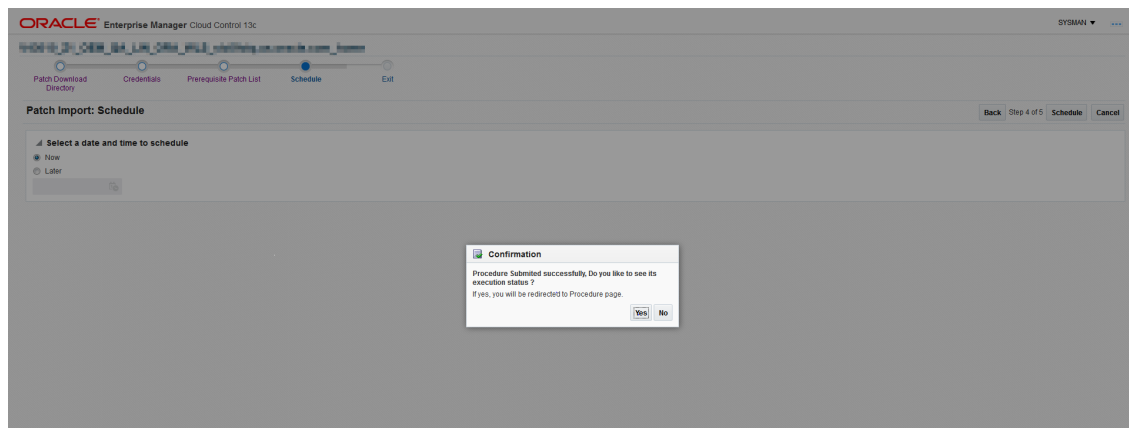


Figure 4-39 Confirmation box

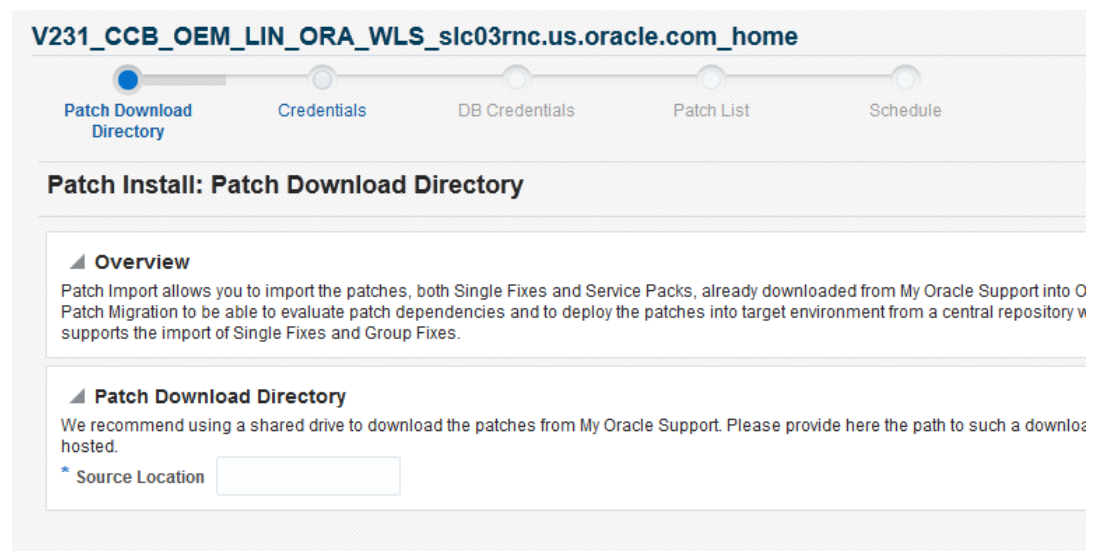


Installing Patches

To install patches:

1. Open the **OUP Home Target Home Page** and click the **Patch Install** button.

Figure 4-40 Starting the Patch Install process



- The first page of the **Patch Install** walk-through appears. Enter the download directory used during patch import (relative to the target environment). After entering your selection, click **Next** to proceed.

Figure 4-41 Specifying the Install Directory



- On the **Credentials** page, choose a set of saved credentials or enter the user name and password for the environment, then click **Next** to proceed.

Figure 4-42 Specifying Install Credentials

ORACLE® Enterprise Manager Cloud Control 13c

V231_CCB_OEM_LIN_ORA_WLS_slc03rnc.us.oracle.com_home

Patch Download Directory | **Credentials** | DB Credentials | Patch List | Schedule

Patch Install: Credentials

Host Credentials

Credential: Preferred Named New

Credential Name: GBU

Attribute	Value
UserName	aerattup
Password	*****
Privilege Type	SUDO
Run As	gbuora

[More Details](#)

OUAF Credentials

Credential: Preferred Named New

Credential Name: NC_ORACLE_O_2015-12-08-162506

Attribute	Value
UserName	system
Password	*****

[More Details](#)

4. Enter the ouaf database credentials on the next page. The credentials should have been created previously as a named credential (see the [Patching Prerequisite](#) topic for details). After entering the credentials, click **Next** to proceed.

Figure 4-43 Specifying Database Credentials

ORACLE® Enterprise Manager Cloud Control 13c

V231_CCB_OEM_LIN_ORA_WLS_slc03rnc.us.oracle.com_home

Patch Download Directory | Credentials | **DB Credentials** | Patch List | Schedule

Back Step 3 of 5 Next

Patch Install: DB Credentials

OUAF DB Credentials

Credential: Preferred Named

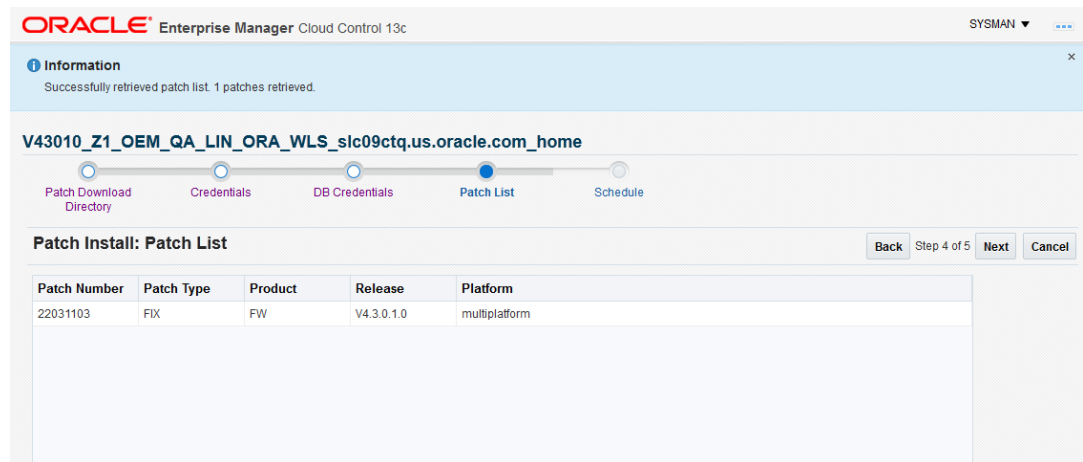
Preferred Credential Name: OUAF DB Credentials

Credential Details: Credentials will be determined at runtime.

5. The **Patches** page lists candidate patches. The list includes only patches that are valid for the target environment (based on product, release and platform), exist on the download

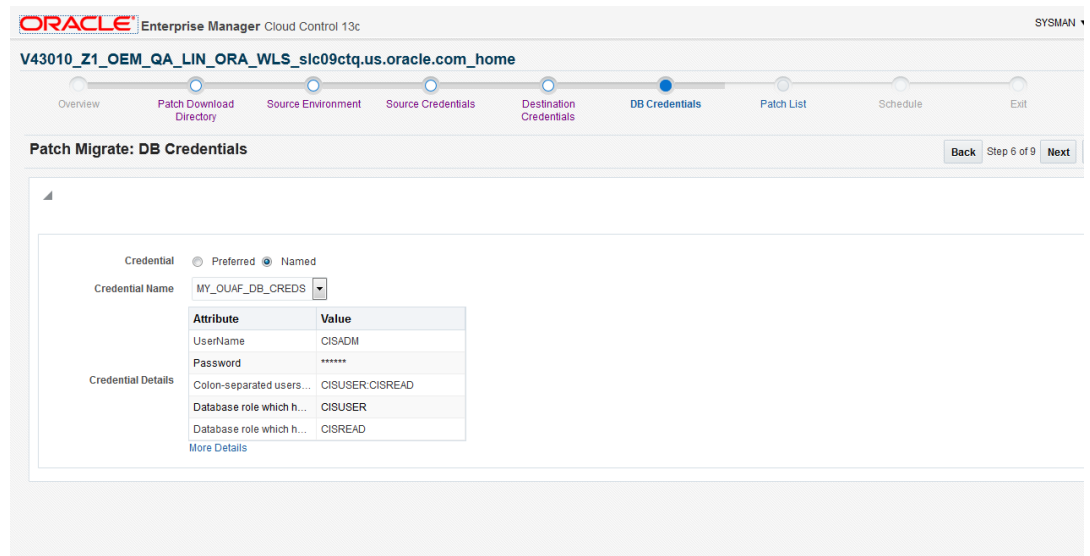
directory, and have not yet been installed on the target environment. Select the patch or patches to be installed. Use **Control+Click** or **Shift+Click** to select multiple patches. After making your choice(s), click **Next** to proceed. Note that you cannot mix service packs and fixes. You also cannot install more than one service pack at a time, or the install job will fail.

Figure 4-44 Selecting Patches



- On the **Schedule** page, choose to either perform the installation operation **Now** or **Later**. If set for **Later**, click **Schedule** to complete the process and schedule the deployment procedure.

Figure 4-45 Scheduling the Patch Install



- As with the patch import procedure, check the output by going to **Enterprise**, and then **Provisioning and Patching**, and then **Procedure Activity**. On the **Provisioning** page, search for the appropriate run and click on the link. To view the output, expand the **Procedure Steps** on the left to view the output.

Figure 4-46 Install Patch Procedure Activity

The screenshot shows the Oracle Enterprise Manager Cloud Control 13c interface. The main heading is "Provisioning" and the sub-heading is "Procedure Activity: OUAFInstallPatch @2015-12-08 18:41:03.667". The status is "Running" and the elapsed time is "6 seconds". The procedure is "OUAFInstallPatchOUTY" and the owner is "SYSMAN". The start date is "Dec 8, 2015 6:41:11 PM PST" and the execution ID is "266EEC30E20B19C7E05399C0F00A9A9F".

The "Procedure Steps" section shows a table with the following data:

Select	Name	Status
<input type="checkbox"/>	PatchInstallation	Completed
<input type="checkbox"/>	V43010_Z1_OEM_OA_LIN_ORA_WLS_slc09cdq.us.oracle.com	Completed
<input checked="" type="checkbox"/>	Install Patch	Running

The "Install Patch" step details are shown in a pop-up window. It is a "Job" type with a start date of "Dec 8, 2015 6:41:12 PM PST" and an elapsed time of "11 seconds". The step is "Completed". The step name is "copyPatchList (Succeeded)" with a start date of "2015.12.08 18:41:13" and a completed date of "2015.12.08 18:41:15". The targets are "V43010_Z1_OEM_OA_LIN_ORA_WLS_slc09cdq.us.oracle.com_home". The step is currently "Command (Running)" with a start date of "2015.12.08 18:41:15".

Additional details regarding patch installations.

Installation occurs in the following sequence:

- Patches are copied from the download staging directory to a temporary directory on the target (`$SPLBASE/oem/patch/tmp`).
- Patch installation is grouped by product, according to the order in which the products are listed in the `PRODUCT.txt` file.
- For single/hot fixes within a product, group fixes are installed first, in order of patch number. Single-fix patches are combined as a rollup, and a group install is performed. For each of these, the database components are installed first, followed by the application server component, and, finally, an error-checker is executed.
- For service packs, product versions are updated by the SP installation process. There can be a delay before this is reflected in the target home page. Refer to the section titled "Ensure Collection of Installed Product Configuration Information" for instructions on how to refresh this information.

Patch Install Enhancements

Patch installation functionality also includes the ability to identify patch prerequisites and notify the user of the requirement to download and import them. This functionality is available from OUAF release 4.3.0 Service Pack 1 and later. All environments on OUAF release 4.3.0 Service Pack 1 will have the old patch import flow.

Figure 4-47 Source

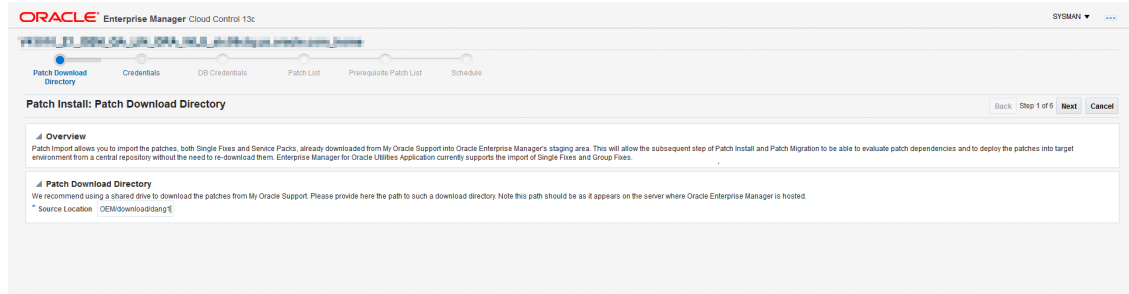


Figure 4-48 Credentials screen

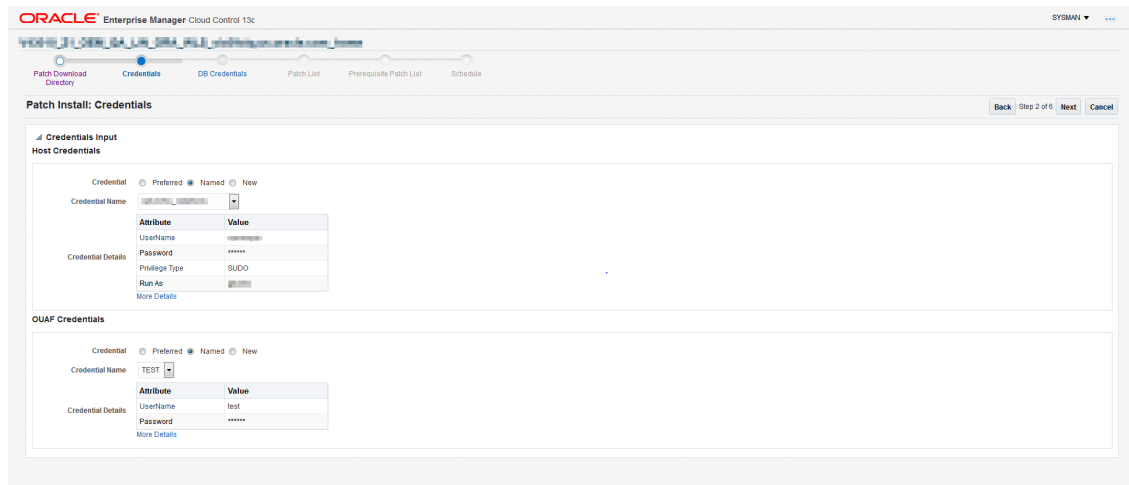


Figure 4-49 DB credentials

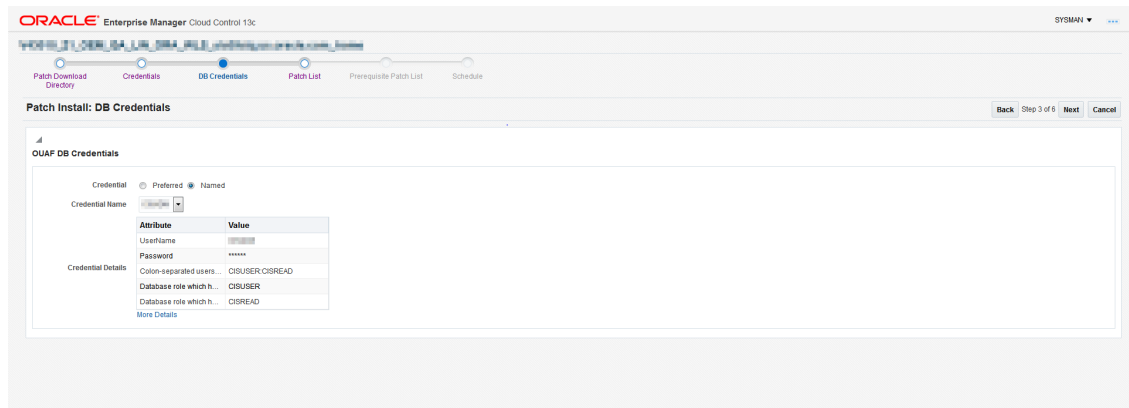


Figure 4-50 Patches screen

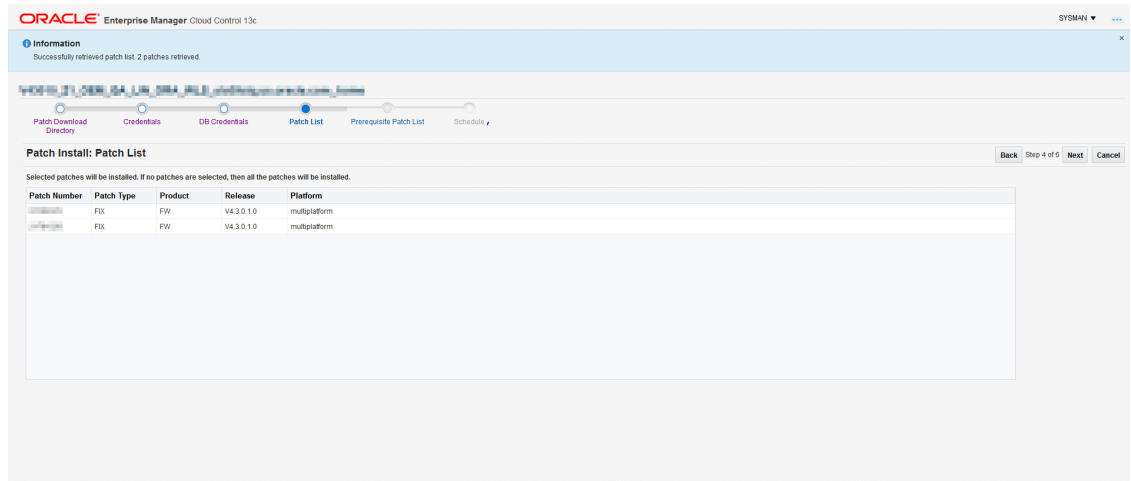
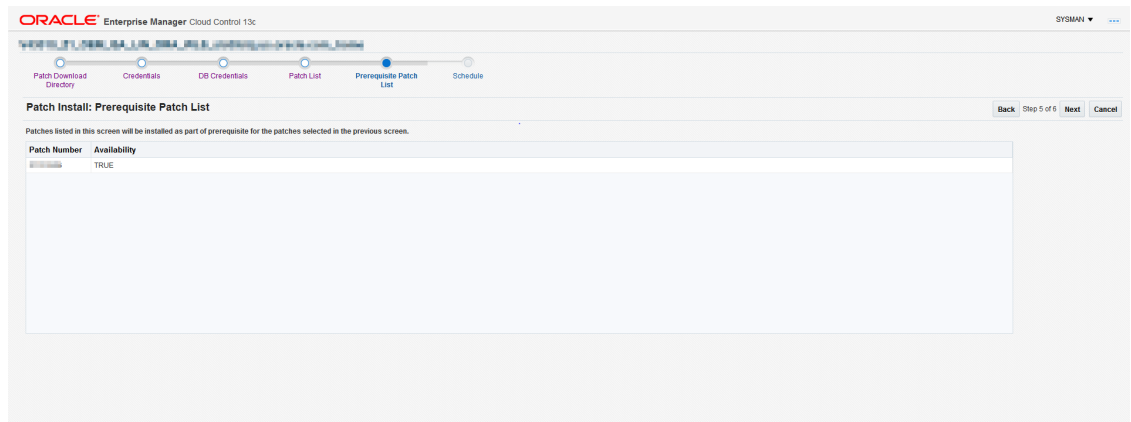


Figure 4-51 Prerequisite patches availability



If the prerequisite patches are not available, availability is set to *false*, the **Next** button is disabled, and a scheduling screen is made available to allow you to schedule downloading of the prerequisites.

Figure 4-52 Schedule screen

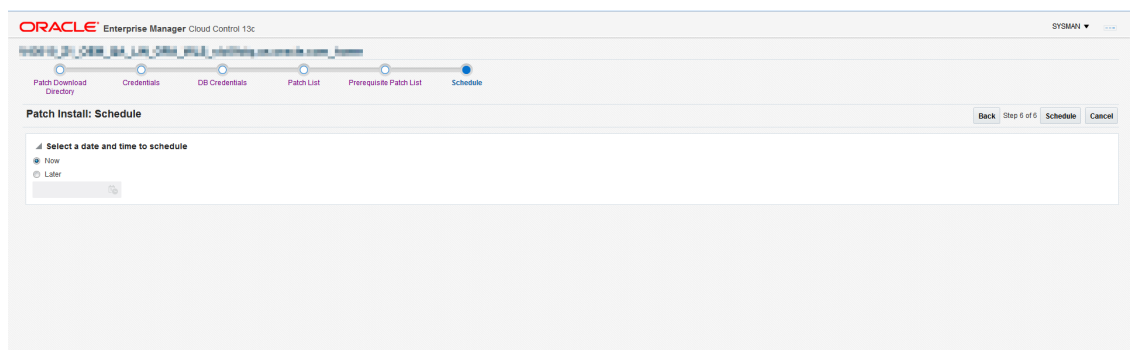
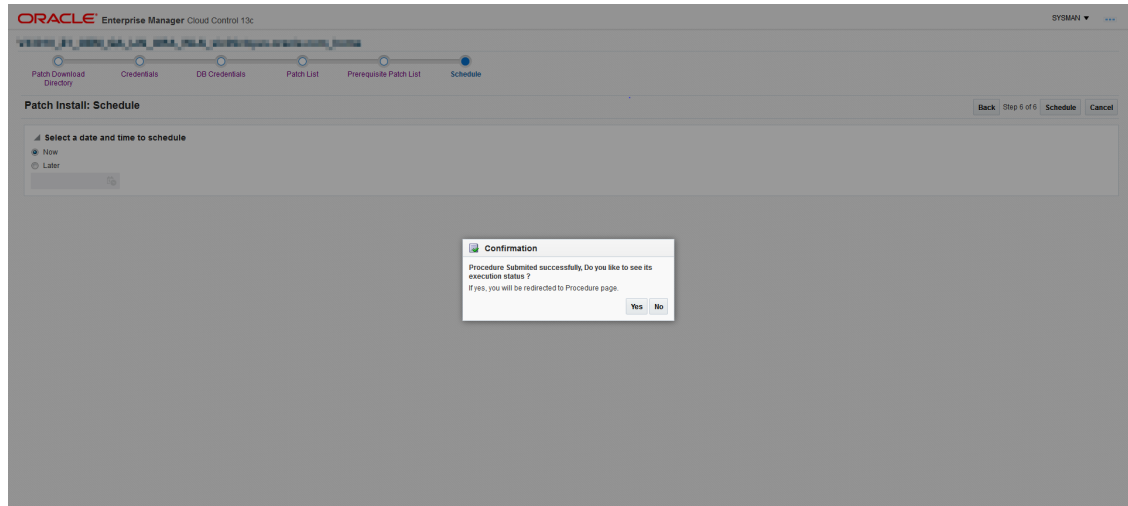


Figure 4-53 Confirmation Box



Patch Migration

During the product implementation lifecycle, patches are normally installed and tested on an environment, and the process is repeated on each environment. The patch migration feature in Enterprise Manager for Oracle Utilities allows administrators to migrate patches to all environments from a central location.

Patch migration is special form of patch installation wherein a source environment is compared to a destination environment. The source environment is used to identify patches that the administrator intends to install in the current/destination environment. The identified patches should have been imported previously for the current target's product, release and platform.

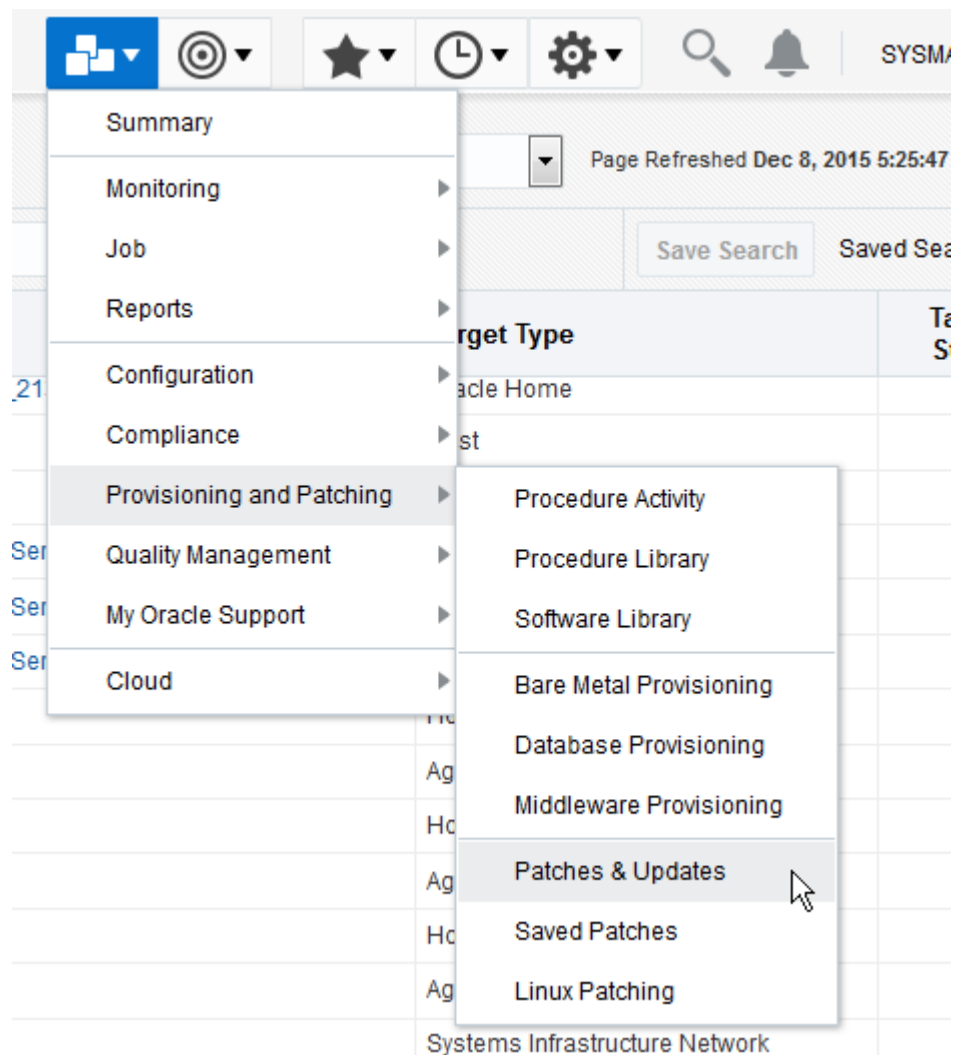
The workflow is as follows:

1. On the destination environment's target home page, click the **Migrate** button.
2. A source target containing the patches to migrate is selected from the dropdown list.
3. Existing patches installed on both targets are analyzed and a list of patches that are installed on the source (but not on the destination target) is created. This list is compared to the contents of the download staging directory and only the patches that have been previously imported are displayed for selection.
4. The selected patches are then installed by the patch installation job (the same one used in the patch installation process), updating relevant files in `$SPLEBASE`. If you deploy manually to the web server, you must perform this step after the installation process completes.

The Process

Patch migration is a three-step process:

1. **Download** patches from My Oracle Support (MOS): This step is performed through the **My Oracle Support Plug-in** within Oracle Enterprise Manager from the top-level menu, choose **Enterprise**, and then **Provisioning and Patching**, and then **Provisioning & Patching**.



2. **Import** the downloaded patches: This process allows you to import downloaded patches which are subsequently unpackaged into a format that is compatible with the Enterprise Manager for Oracle Utilities installation process.
3. **Migrate/install** the imported patches.

Note

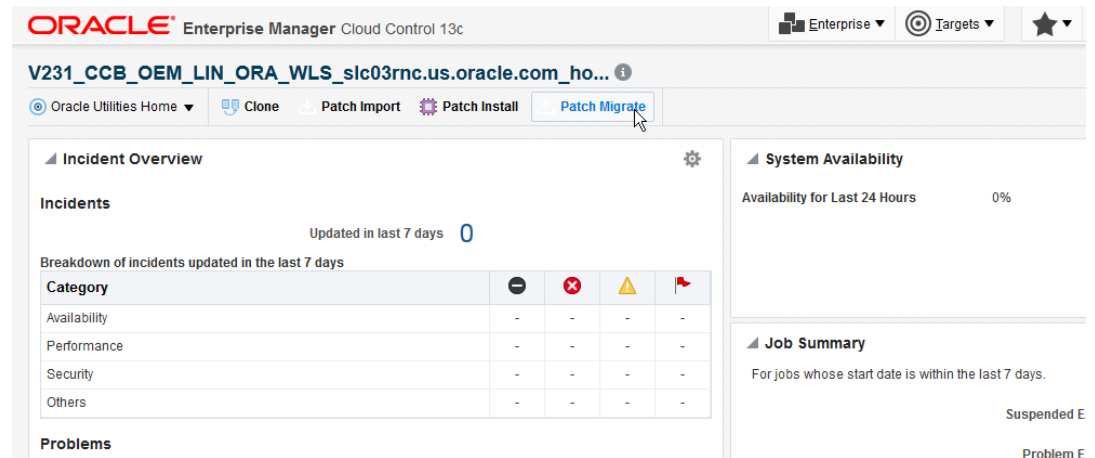
Application server patch components are installed using the standard patch install script. Database patch components are installed using a Java version of the standard `CDXPatch.exe` utility. Note that patches using the database upgrade-install utility `cdxdbi.exe` are *not* supported and the database component of the patch will not be installed.

Migrating Patches

To migrate patches:

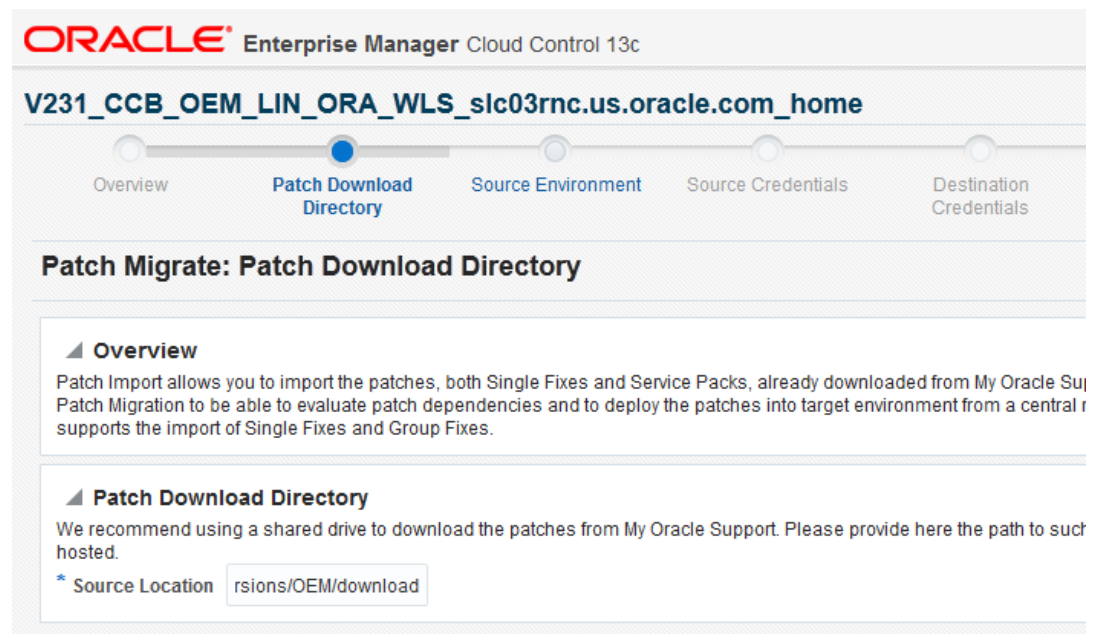
1. Open the **OUM Home Target Home Page** and click the **Migrate Patches** button to open the **Migrate Patches** walk-through.

Figure 4-54 Starting a Patch Migration



2. On the **Download Directory** page, enter the download directory used during patch import (relative to the destination environment). After entering your selection, click **Next** to proceed.

Figure 4-55 Specifying the Download Directory



3. On the **Source** page, choose the source target environment from the dropdown list. Note that only targets with identical product/version combinations are included in the list. After making your selection, click **Next** to proceed.

Figure 4-56 Choosing a Source Environment

ORACLE Enterprise Manager Cloud Control 13c

V43010_Z1_OEM_QA_LIN_ORA_WLS_slc09ctq.us.oracle.com_home

Overview Patch Download Directory **Source Environment** Source Credentials Destination Credentials DB Credentials Patch List Schedule Exit

Patch Migrate: Source Environment Back Step 3 of 9 Next

Select a source environment v43010_FOR_SELENIUM_slc09ctq.us.oracle.com_home

- On the **Source Credentials** page, choose a set of saved credentials or enter the user name and password for the source environment, then click **Next** to proceed.

Figure 4-57 Specifying Source Credentials

ORACLE Enterprise Manager Cloud Control 13c

V43010_Z1_OEM_QA_LIN_ORA_WLS_slc09ctq.us.oracle.com_home

Overview Patch Download Directory Source Environment **Source Credentials** Destination Credentials DB Credentials Patch List Schedule Exit

Patch Migrate: Source Credentials Back Step 4 of 9 Next

Host Credentials

Credential Preferred Named New

Credential Name STD_GBUORA_AE1

Attribute	Value
UserName	serattup
Password	*****
Privilege Type	SUDO
Run As	gbuora

[More Details](#)

OUAF Credentials

Credential Preferred Named New

Credential Name NC_ORACLE_O_2015-12-08-162506

Attribute	Value
UserName	system
Password	*****

[More Details](#)

- On the **Destination Credentials** page, choose a set of saved credentials or enter the user name and password for the destination environment, then click **Next** to proceed.

Figure 4-58 Specifying Destination Credentials

ORACLE Enterprise Manager Cloud Control 13c

V43010_Z1_OEM_QA_LIN_ORA_WLS_slc09ctq.us.oracle.com_home

Overview Patch Download Directory Source Environment Source Credentials **Destination Credentials** DB Credentials Patch List Schedule Exit

Patch Migrate: Destination Credentials Back Step 5 of 9 Next

Host Credentials

Credential Preferred Named New

Credential Name: STD_GBUORA_AE1

Attribute	Value
UserName	aerattup
Password	*****
Privilege Type	SUDO
Run As	gbuora

More Details

OUAF Credentials

Credential Preferred Named New

Credential Name: NC_ORACLE_O_2015-12-08-182506

Attribute	Value
UserName	system
Password	*****

More Details

6. Enter the ouaf database credentials on the next page. The credentials should have been created previously as a named credential (see the [Patching Prerequisite](#) topic for details). After entering the credentials, click **Next** to proceed.

Figure 4-59 Specifying Database Credentials

ORACLE Enterprise Manager Cloud Control 13c

V43010_Z1_OEM_QA_LIN_ORA_WLS_slc09ctq.us.oracle.com_home

Overview Patch Download Directory Source Environment Source Credentials Destination Credentials **DB Credentials** Patch List Schedule Exit

Patch Migrate: DB Credentials Back Step 6 of 9 Next

DB Credentials

Credential Preferred Named

Credential Name: MY_OUAF_DB_CREDS

Attribute	Value
UserName	CISADMIN
Password	*****
Colon-separated users...	CISUSER:CISREAD
Database role which h...	CISUSER
Database role which h...	CISREAD

More Details

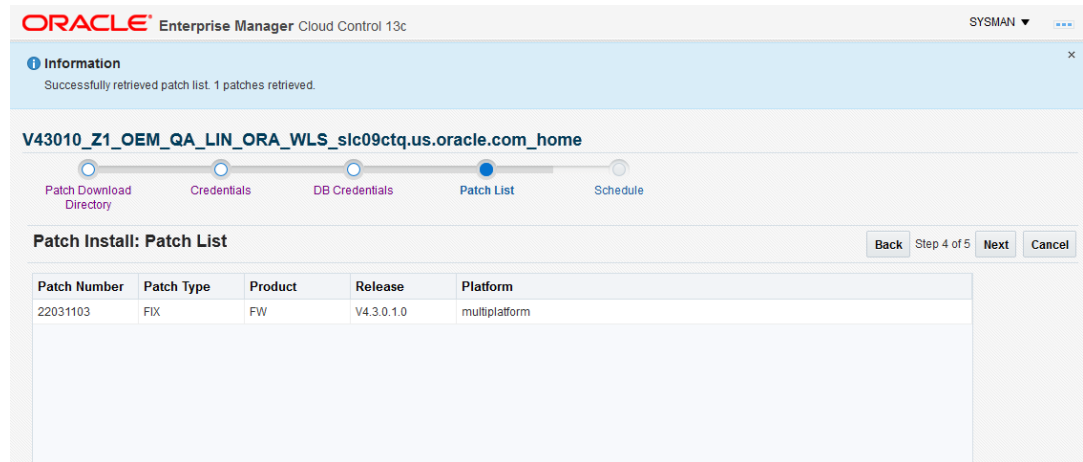
7. The **Select Patches** page lists candidate patches. The list includes only patches that are valid for the target environment based on product, release and platform), exist on the download directory, and have not yet been installed on the destination target but are already installed in the source target.

For a patch to be displayed in the list, it must meet all of the following criteria:

- It is valid for the product, release and platform of the environment;
- It must have been already been successfully imported, and, thus, exist on the download directory;

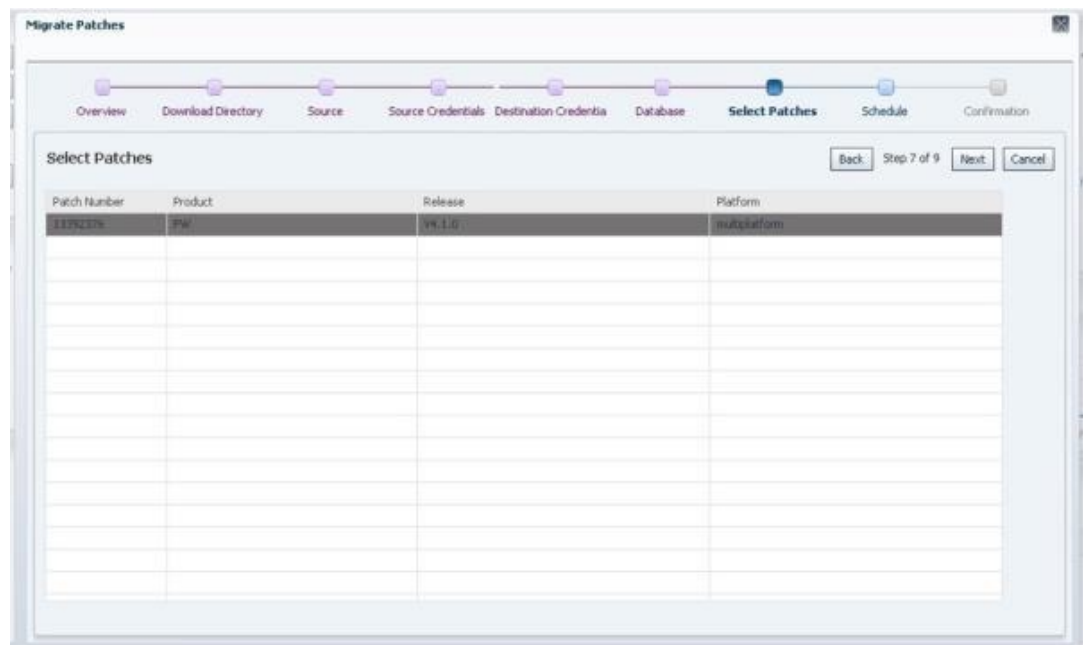
- It must not yet have been installed on the destination environment; and,
- It must already be installed on the source environment.

Figure 4-60 The Select Patches page



8. Select the patch or patches to be migrated. Use **Control+Click** or **Shift+Click** to select multiple patches. After making your choice(s), click **Next** to proceed.

Figure 4-61 Selecting Patches



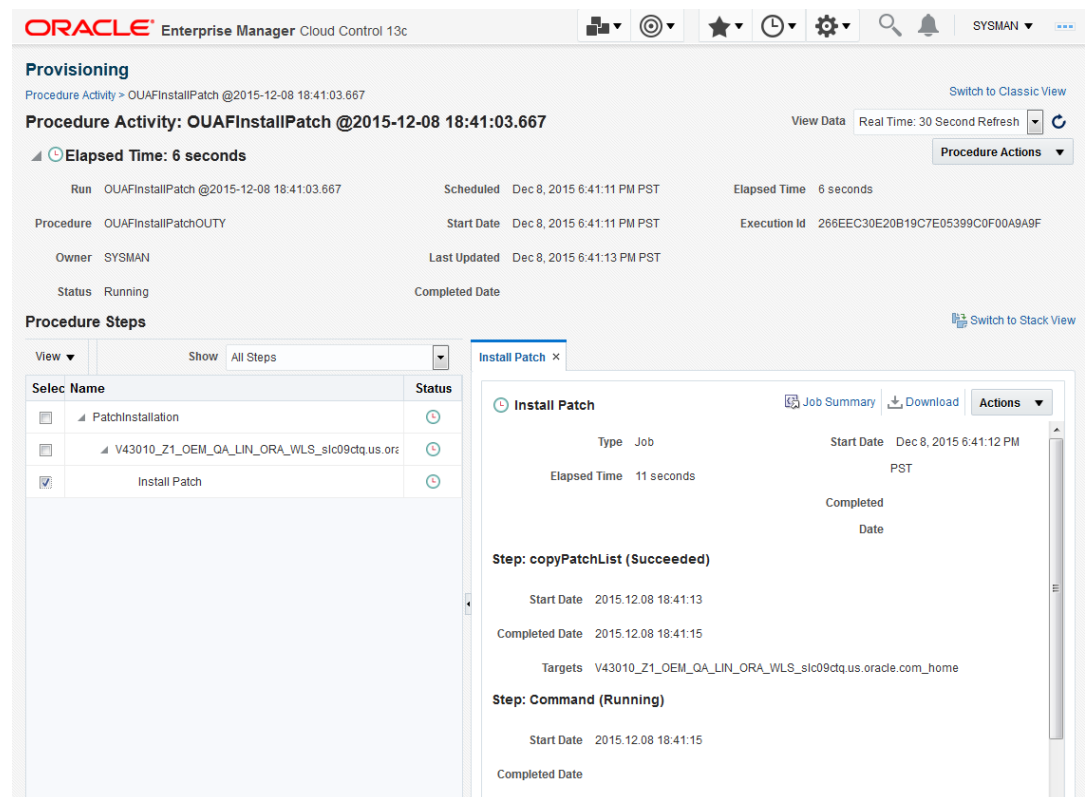
9. On the **Schedule** page, choose to either perform the migration operation **Now** or **Later**. If set for **Later**, click **Schedule** to complete the process and schedule the deployment procedure.

Figure 4-62 Scheduling the Migration



- As with the patch import procedure, check the output by going to **Enterprise**, and then **Provisioning and Patching**, and then **Procedure Activity**. On the **Provisioning** page, search for the appropriate run and click on the link. To view the output, expand the **Procedure Steps** on the left to view the output.

Figure 4-63 Patch Migration Procedure Activity



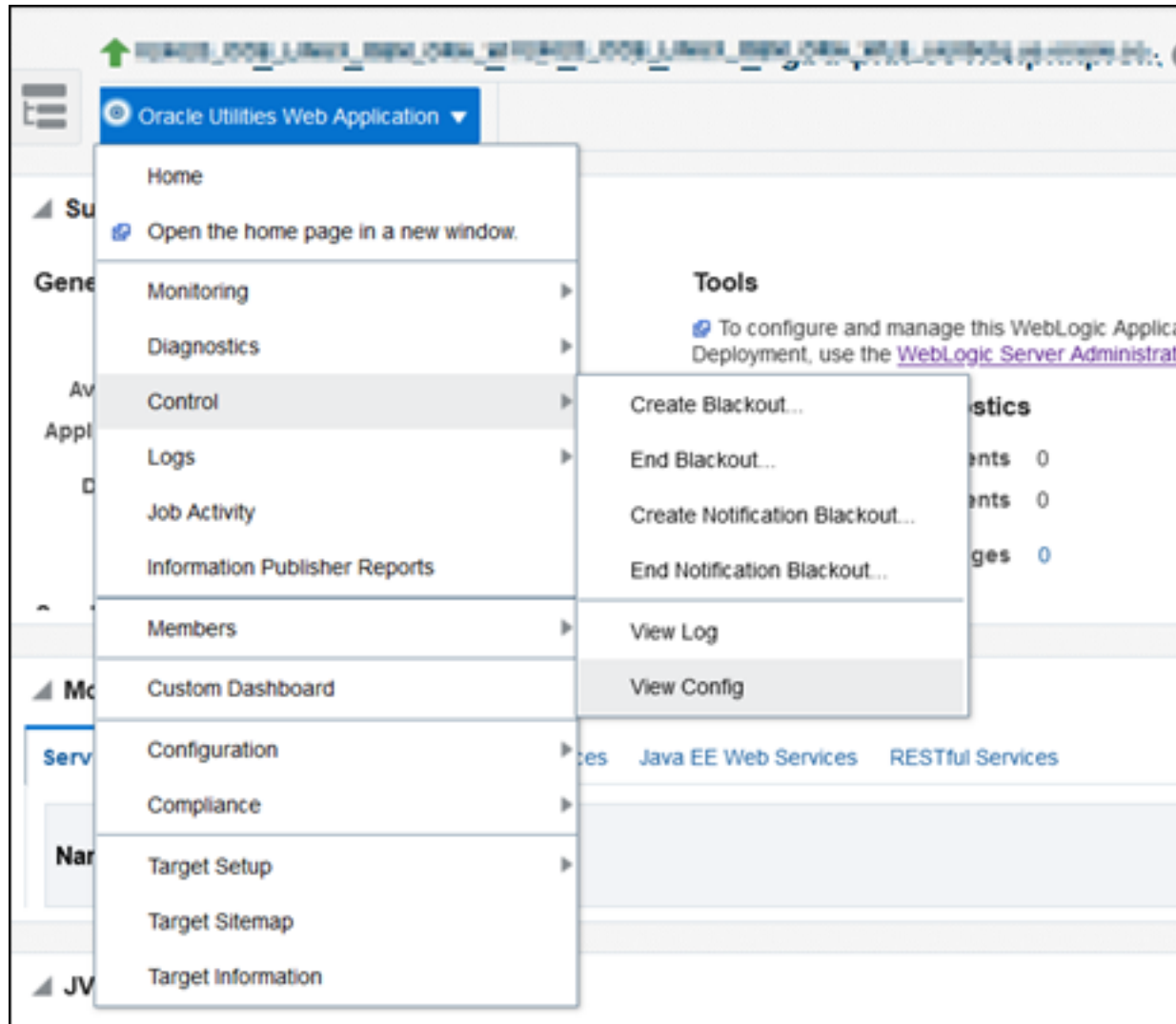
Viewing Configuration Files

The View Configuration Files feature lets you review configuration details remotely without logging into the server or the environment. This information lets you compare environments and diagnose customer setup issues.

To view configuration files:

1. From the appropriate Target Home Page (Web Application, Web Services, or Batch Server target home page), choose **Target**, and then **Control**, and then **View Config**.

Figure 4-64 Viewing Configuration Files



2. On the **Credentials** page, choose a set of saved credentials or enter your user name and password, then click **Next** to proceed.

Figure 4-65 Specifying Credentials

ORACLE Enterprise Manager Cloud Control 13c

V231_CCB_OEM_LIN_ORA_WLS_slc03rnc.us.oracle.com_web

Credentials Input Config File

View Configuration: Credentials Input

Host Credentials

Credential Preferred Named New

Credential Name: GBU

Attribute	Value
UserName	aerattup
Password	*****
Privilege Type	SUDO
Run As	gbuora

[More Details](#)

OUAF Credentials

Credential Preferred Named New

* UserName: system

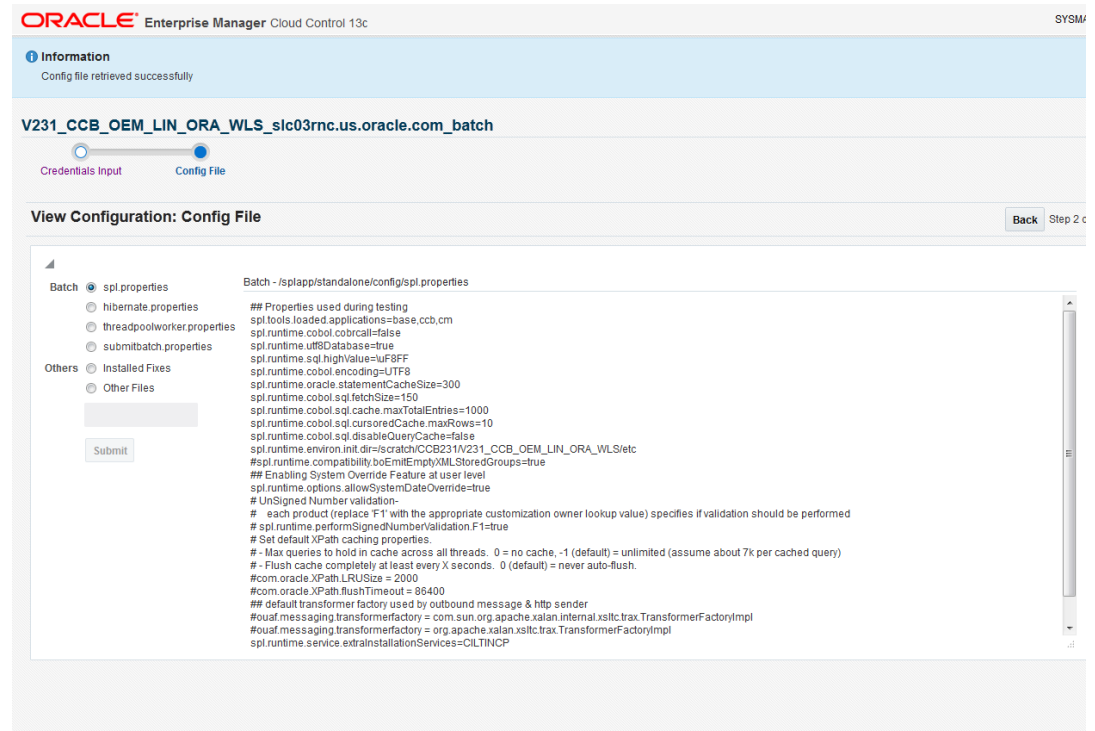
* Password: *****

* Confirm Password: *****

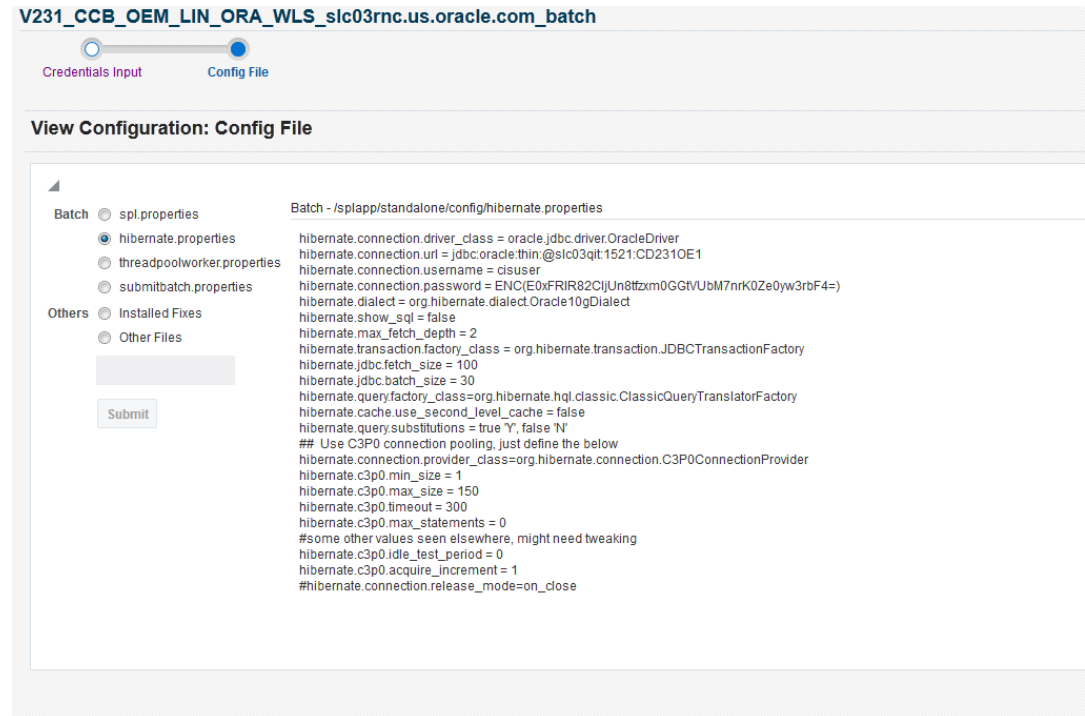
Save As: STD_SYSTEM_CRED

- The **Configuration Files** page offers a selection region to let you choose configuration files to view, as well as a display area for the selected file.

Figure 4-66 Configuration File Viewer



4. Choose a configuration file by either clicking an option button from the listed items or by selecting the **Other file** option and entering the path (relative to SPLBASE) of a valid configuration file. `etc/ENVIRON.INI`, will, for example, display `$SPLBASE/etc/ENVIRON.INI`.
5. Click **Submit** to display the file in the scrollable text area.

Figure 4-67 Viewing a Configuration File

6. After viewing the selected configuration file, you can select other configuration files to view, or click **Cancel** to return to the Target Home Page.

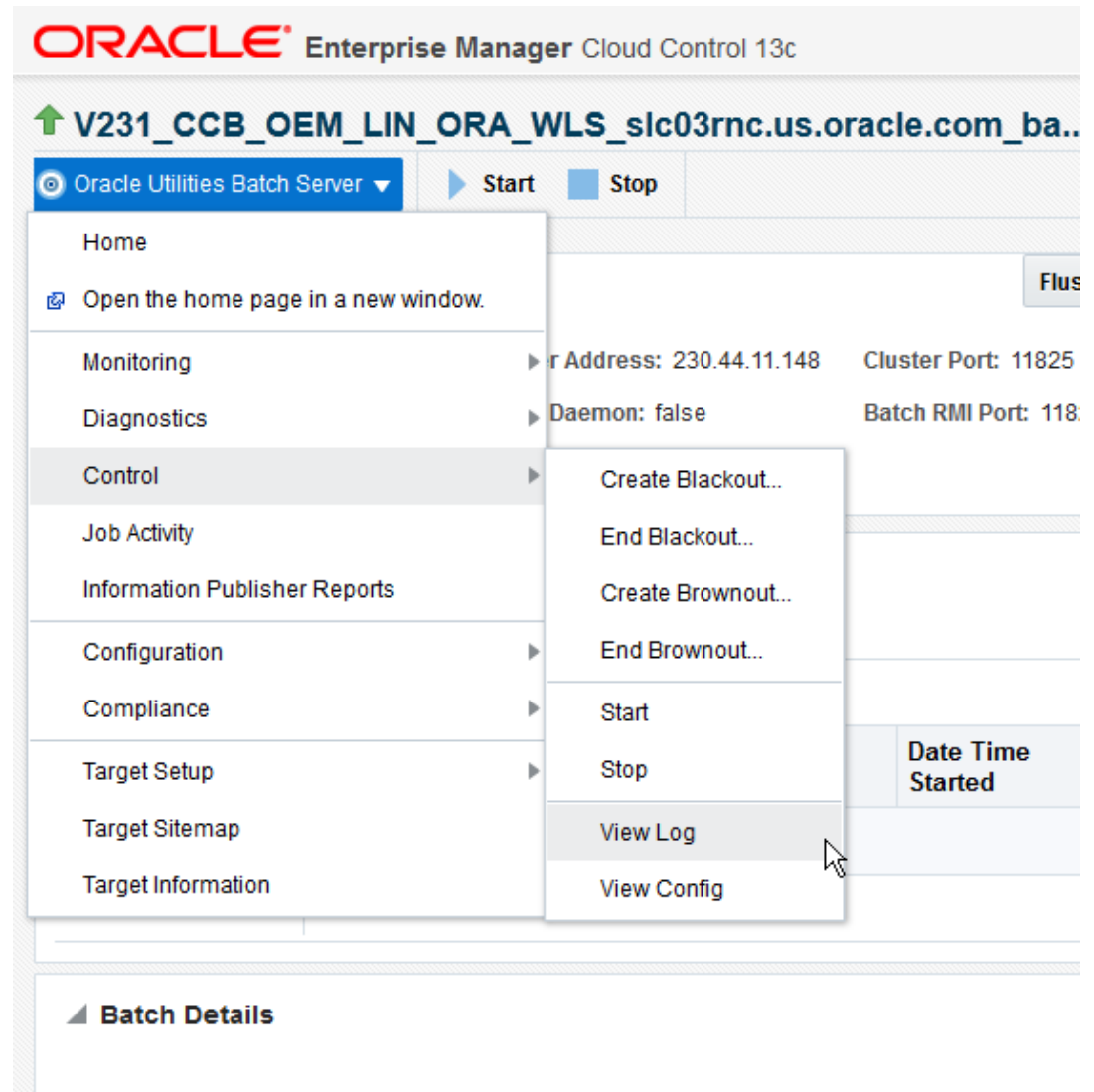
Viewing Logs

The View Logs feature allows you to view the contents of log files, including the latest thread pool worker log, that are generated at the application server level.

To view logs:

1. From the appropriate Target Home Page (Web Application, Web Services, or Batch Server target home page), choose **Target**, and then **Control**, and then **View Log**.

Figure 4-68 Viewing Configuration Logs



2. On the **Credentials** page, choose a set of saved server credentials or enter your user name and password, then click **Next** to proceed.

Figure 4-69 Specifying Credentials

ORACLE Enterprise Manager Cloud Control 13c

V231_CCB_OEM_LIN_ORA_WLS_slc03rnc.us.oracle.com_batch

Credentials Log Info

View Log: Credentials

Host Credentials

Credential Preferred Named New

Credential Name: STD_GBUORA_AE1

Attribute	Value
UserName	aerattup
Password	*****
Privilege Type	SUDO
Run As	gbuora

[More Details](#)

OUAF Credentials

Credential Preferred Named New

Credential Name: NC_ORACLE_O_2015-12-08-174505

Attribute	Value
UserName	system
Password	*****

[More Details](#)

- The **Log Info** page offers a selection region to let you choose from among all available logs, as well as a display area for the selected log.

Figure 4-70 Log Info page



4. Enter the number of lines that you would like to view from the selected log. If no value is entered or the value exceeds the number of lines in the selected log, the complete log is displayed.
5. Click **Submit** to display the log in the scrollable text area.
6. After viewing the selected log, you can select other logs to view, or click **Cancel** to return to the Target Home Page.

Log Viewer Enhancements

This module allows you to view all log files relating to a specified target type. Log viewer enhancements allow display of details such as timestamp, message type, etc., lets you search for specific terms in the log file, and lets you download the file.

Note

The default preferred host credentials for the target type must be set beforehand.

Figure 4-71 Log viewer menu

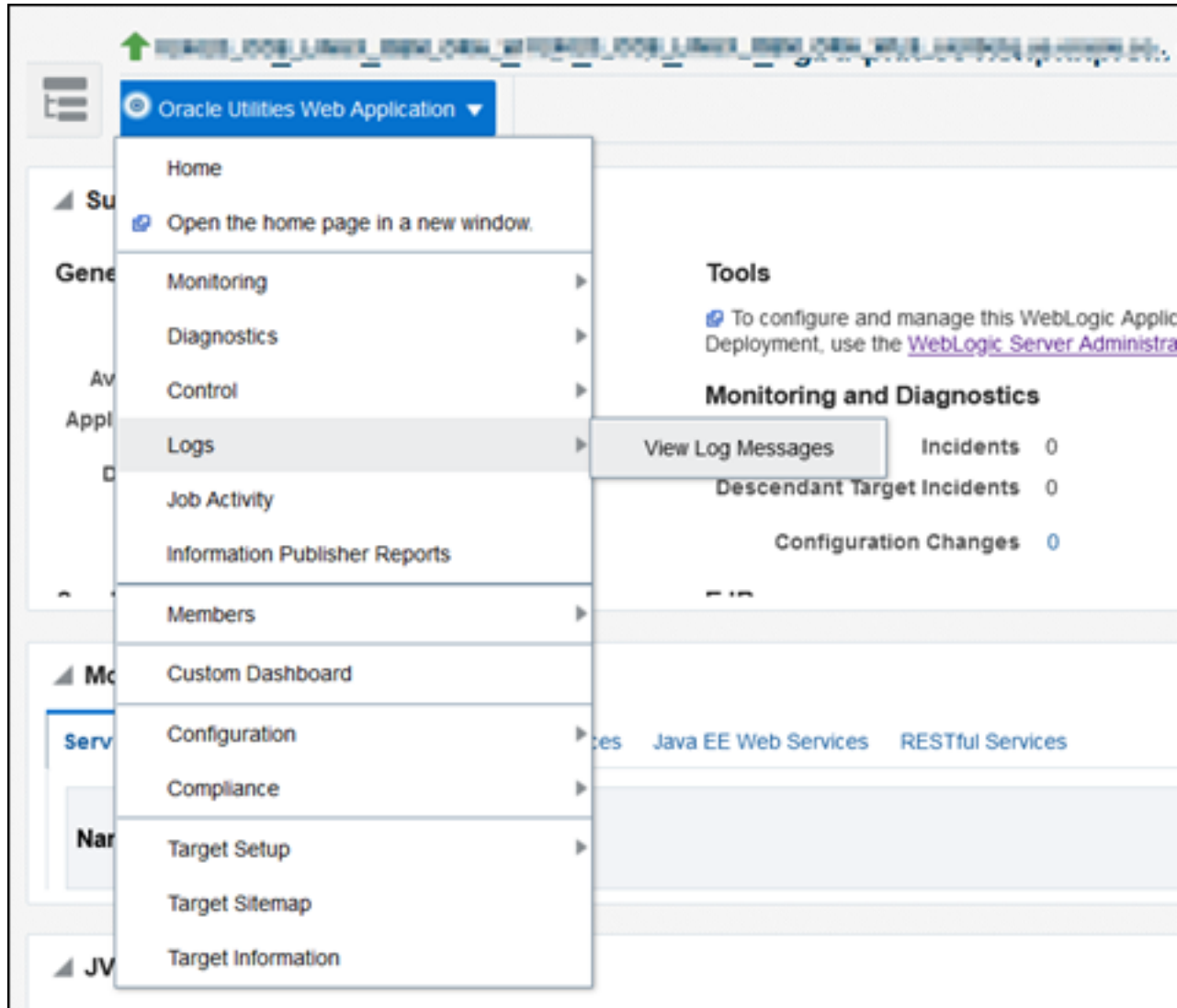
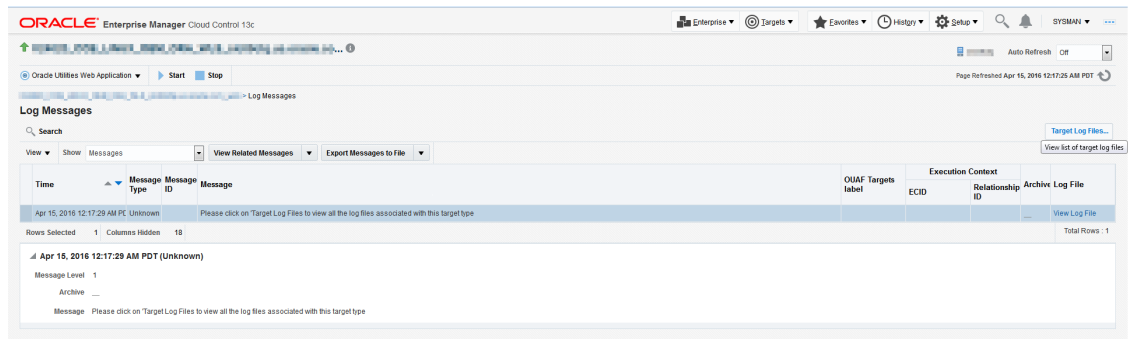
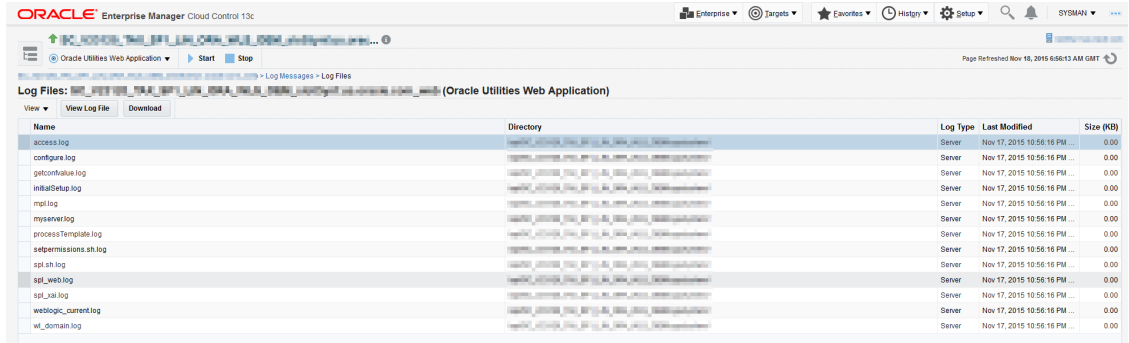


Figure 4-72 Log viewer landing page



This is a generic page. To view the target-specific log files, click **Target Log Files** on the side of the screen.

Figure 4-73 Target-specific log files



In the following image, the list of log files relating to the target type are displayed. You can also view/download a selected log file from this screen.

Figure 4-74 Display content of log file

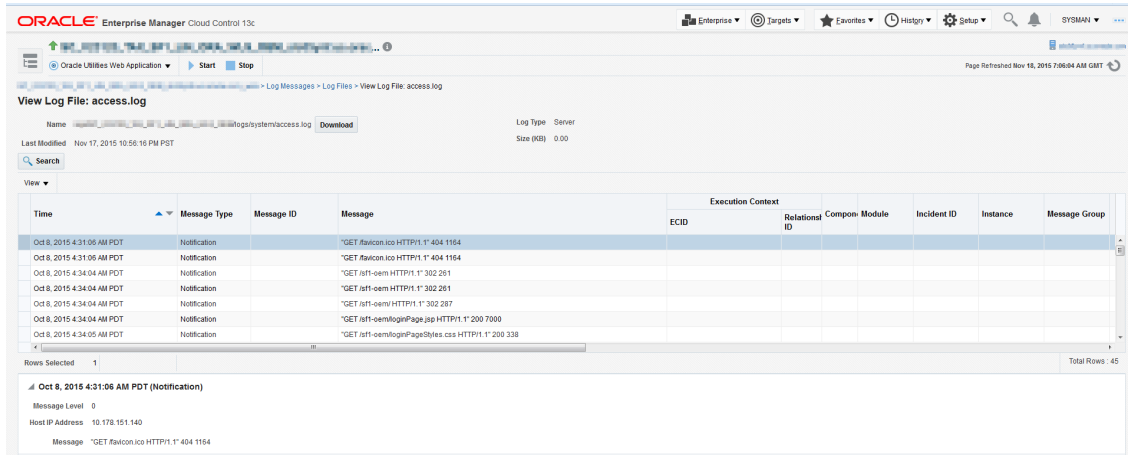
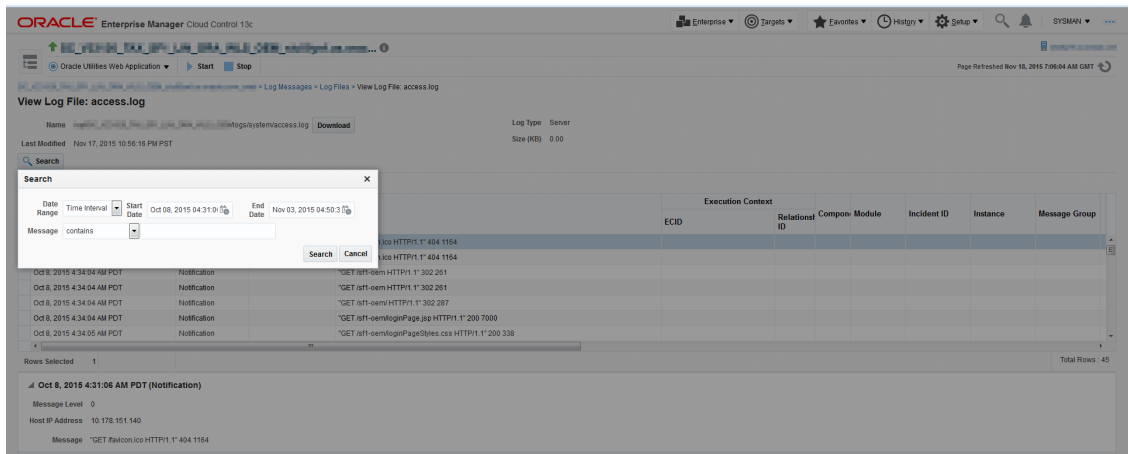


Figure 4-75 Searching for a term in a log file



5

Performance Portal: Custom Dashboard

This feature is available for all target types. By default, it displays the availability region and a metric palette along with a chart toolbar and a time toolbar. You can customize this dashboard according to your own use cases. Various charts can be viewed by selecting the charts in the metric palette, and the time range can be selected accordingly. Also, chart values can be compared with respect to a set baseline or with another chart.

 **Note**

Users with read-only privileges cannot access the custom dashboard.

Figure 5-1 Custom dashboard menu option

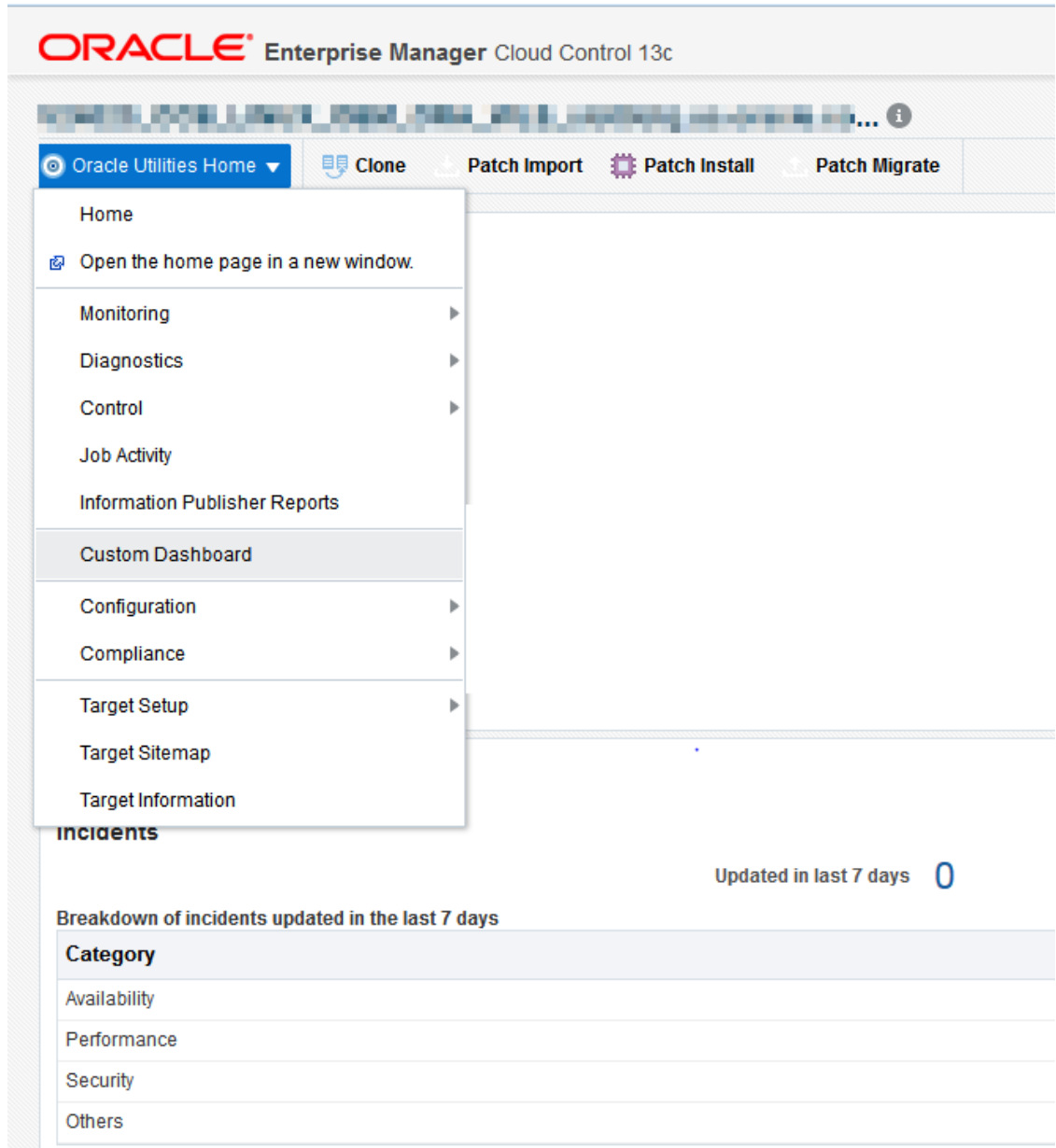


Figure 5-2 Default custom dashboard page

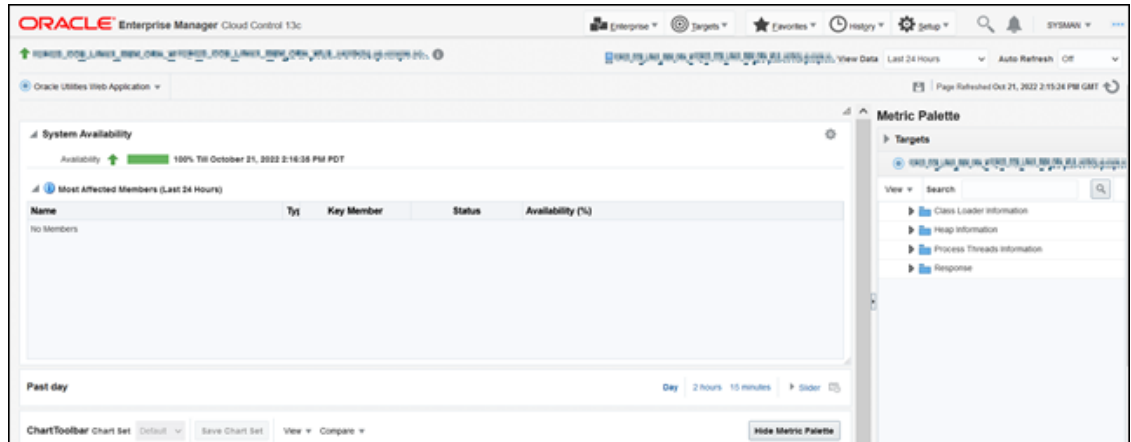
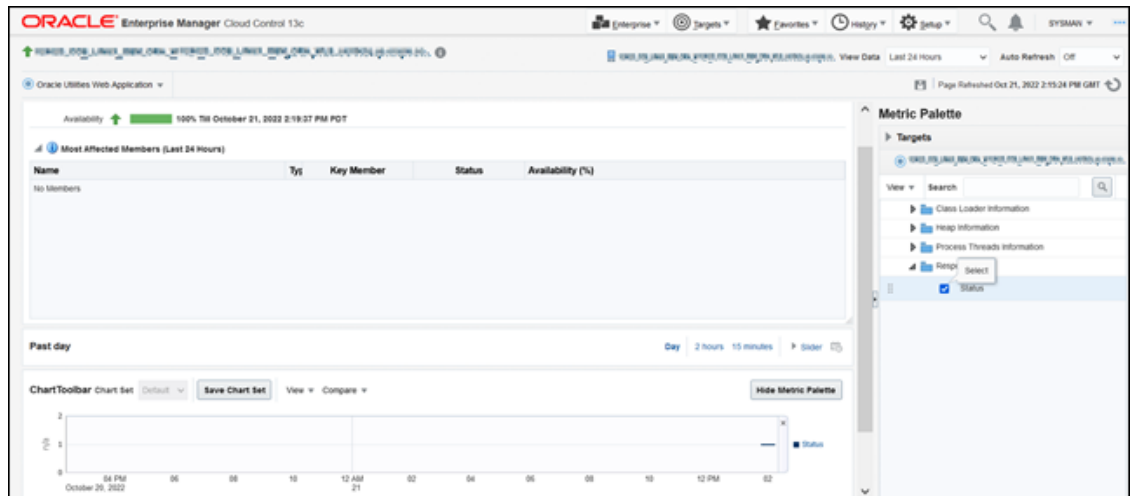


Figure 5-3 Charts selected and displayed on the UI



6

Additional Features and Functionality

Metrics Enhancement: Batch Level of Service

This feature supported from OUAF 4.2.0 Service Pack 3 with Bug 21358792.

Figure 6-1 Menu to navigate to the metric

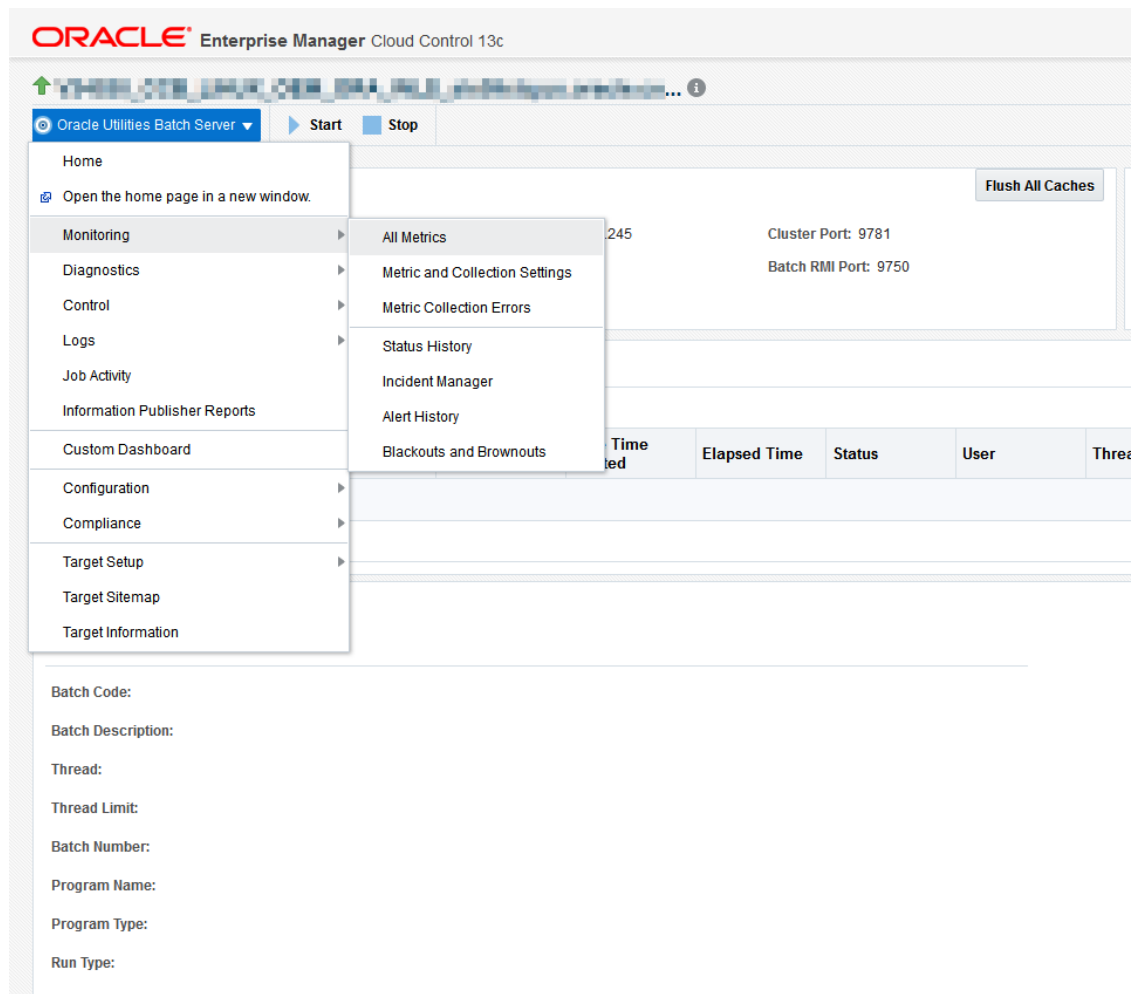
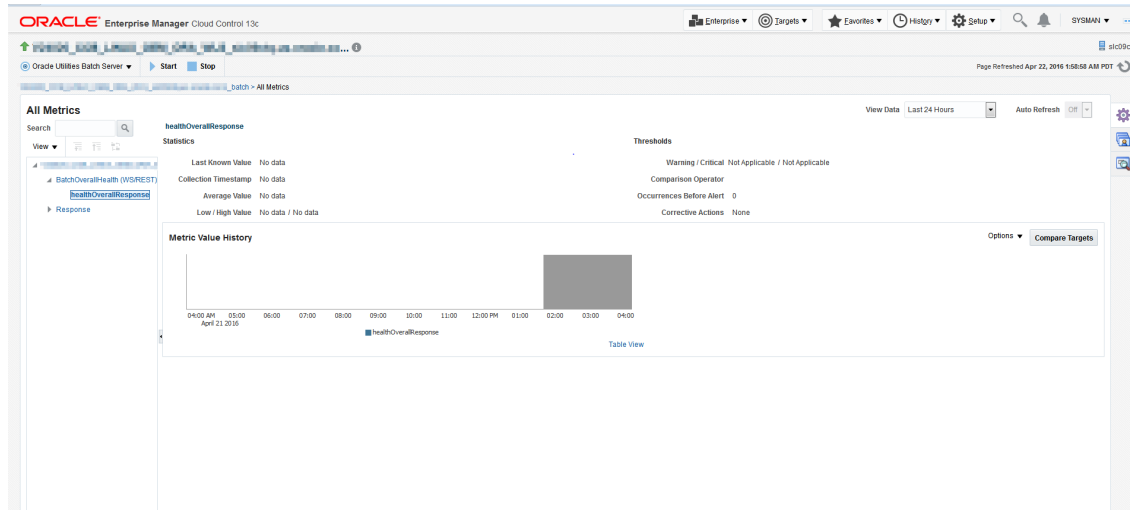


Figure 6-2 BatchOverAllHealth metric



Features Available for Users with Specific Roles

A. User: Operator Privileges

Figure 6-3 Environment Home page functions

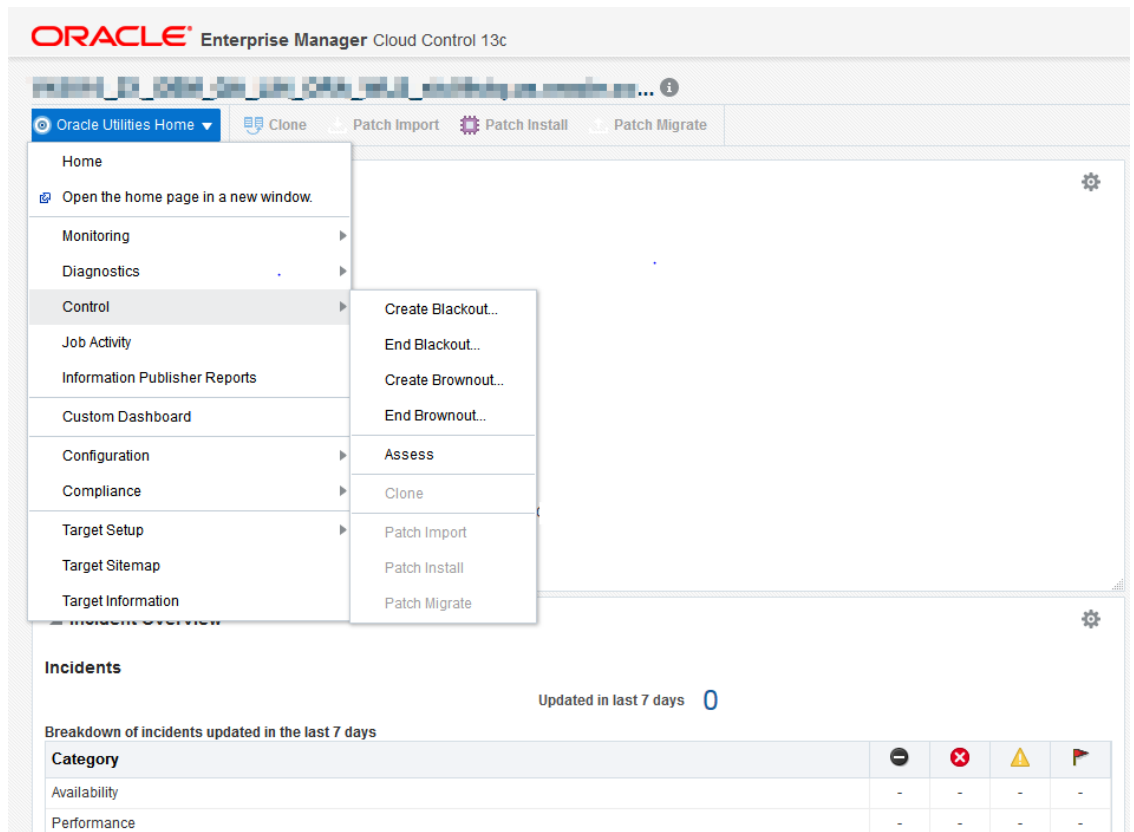


Figure 6-4 Web Page functions

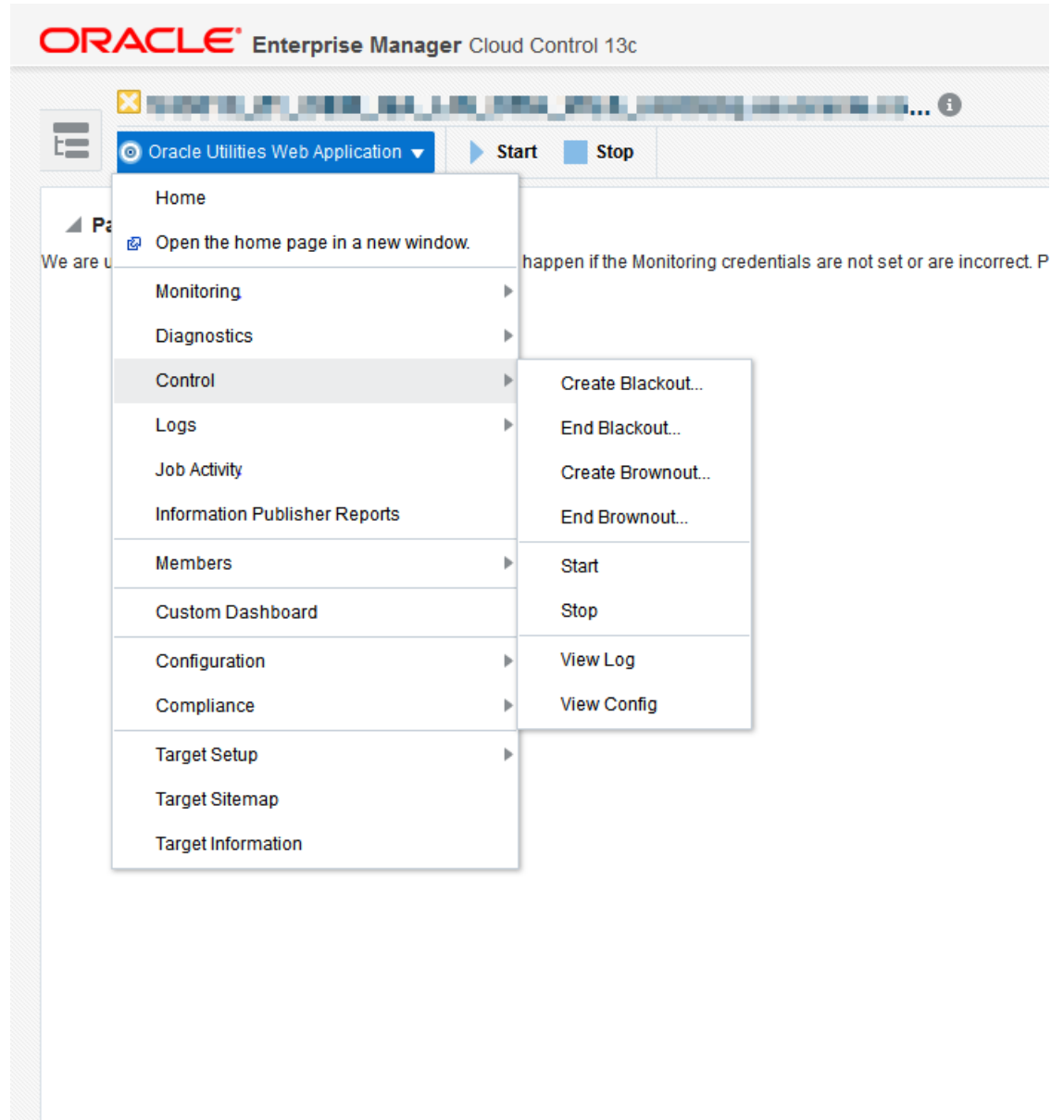
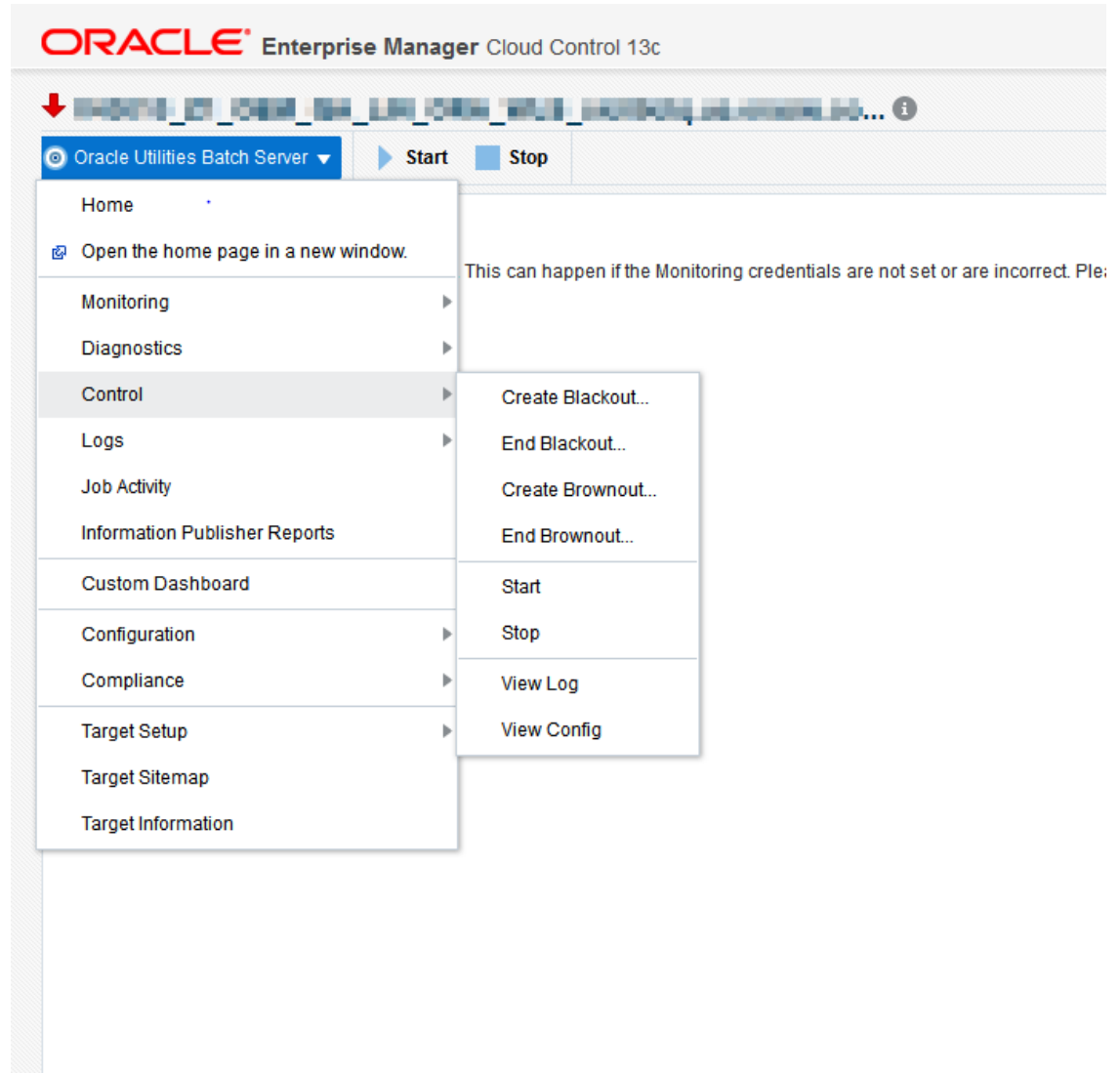


Figure 6-5 Batch Page functions



B. User: Read-Only Privileges

Prerequisite: For a read-only plugin user role to work properly (to enable the user to access modules with previously-saved credentials), the following actions must be applied:

- Add 'Execute Command Anywhere' for 'Privileges applicable to all targets'
- Add 'Named Credential' for 'EM Resource Privileges'
- Add 'Configure Target' Privilege for Target Privileges Applicable to Specific Targets

Figure 6-6 Environment Home page functions

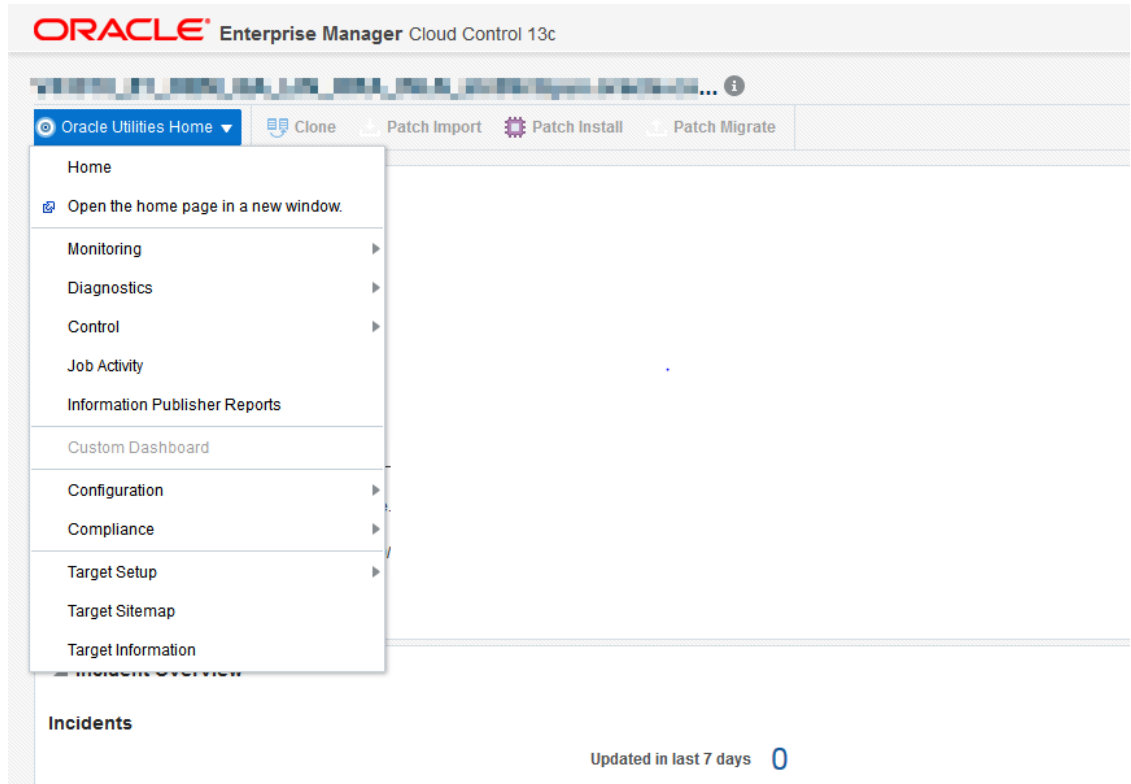


Figure 6-7 Web Page functions

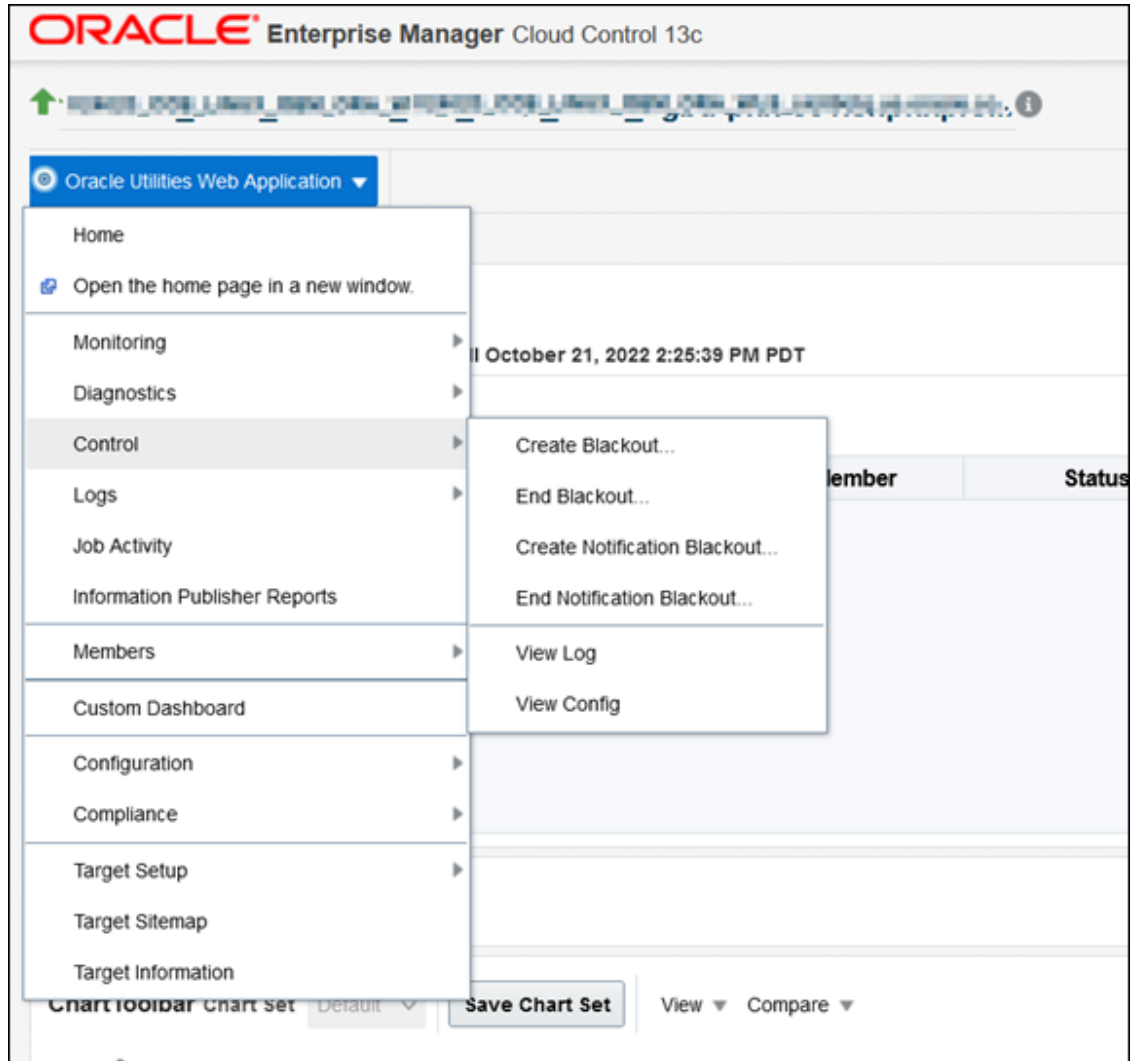
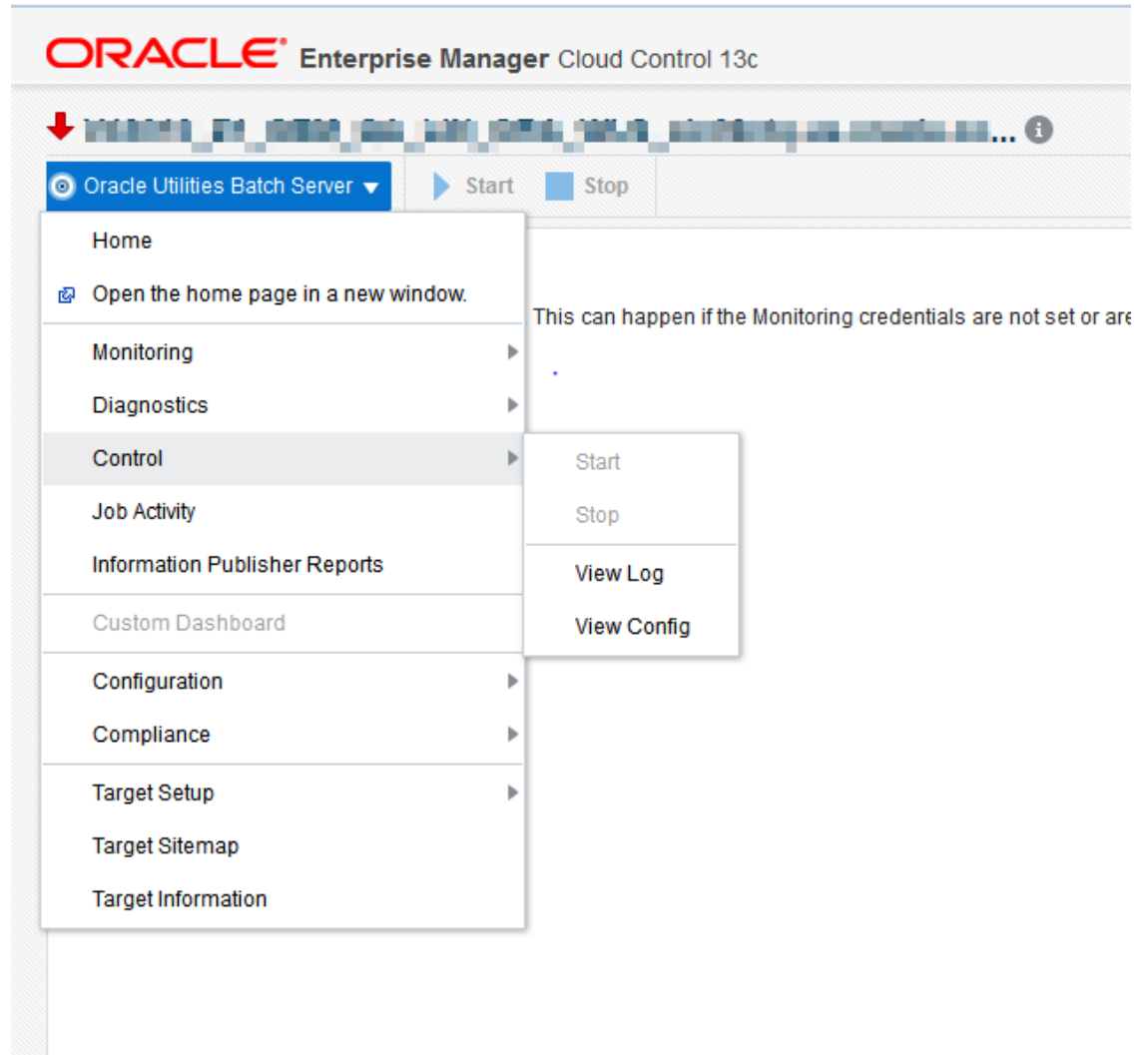


Figure 6-8 Batch Page functions



C. User: Administrator Privileges (has access to all functionality)

Figure 6-9 Environment Home page functions

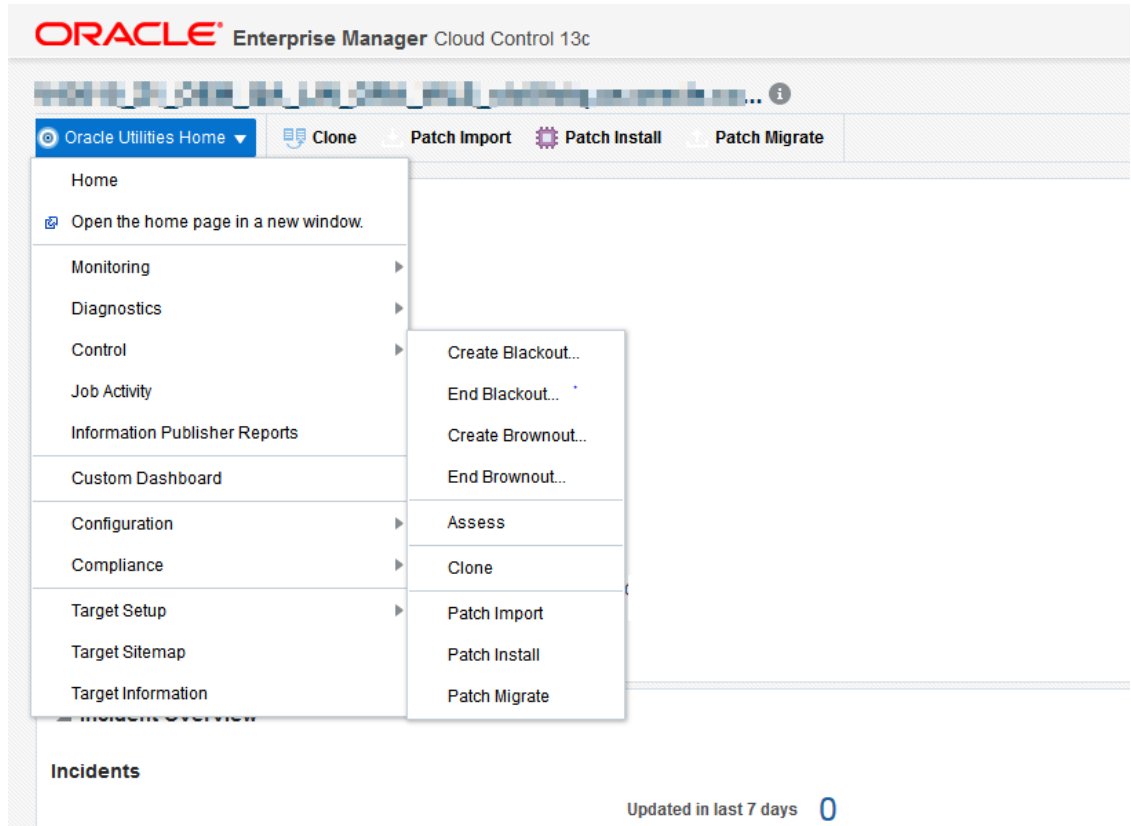


Figure 6-10 Web Page functions

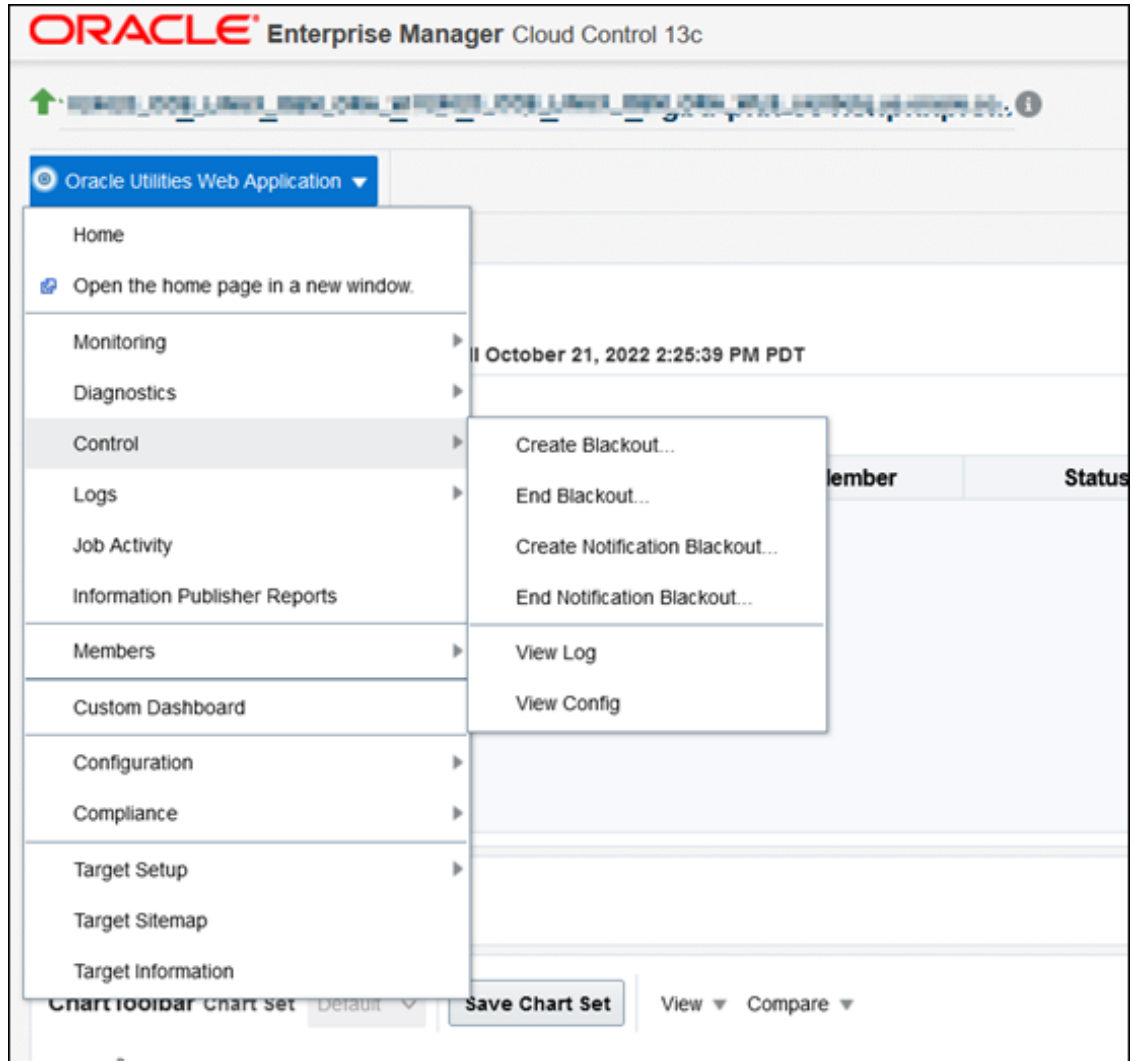
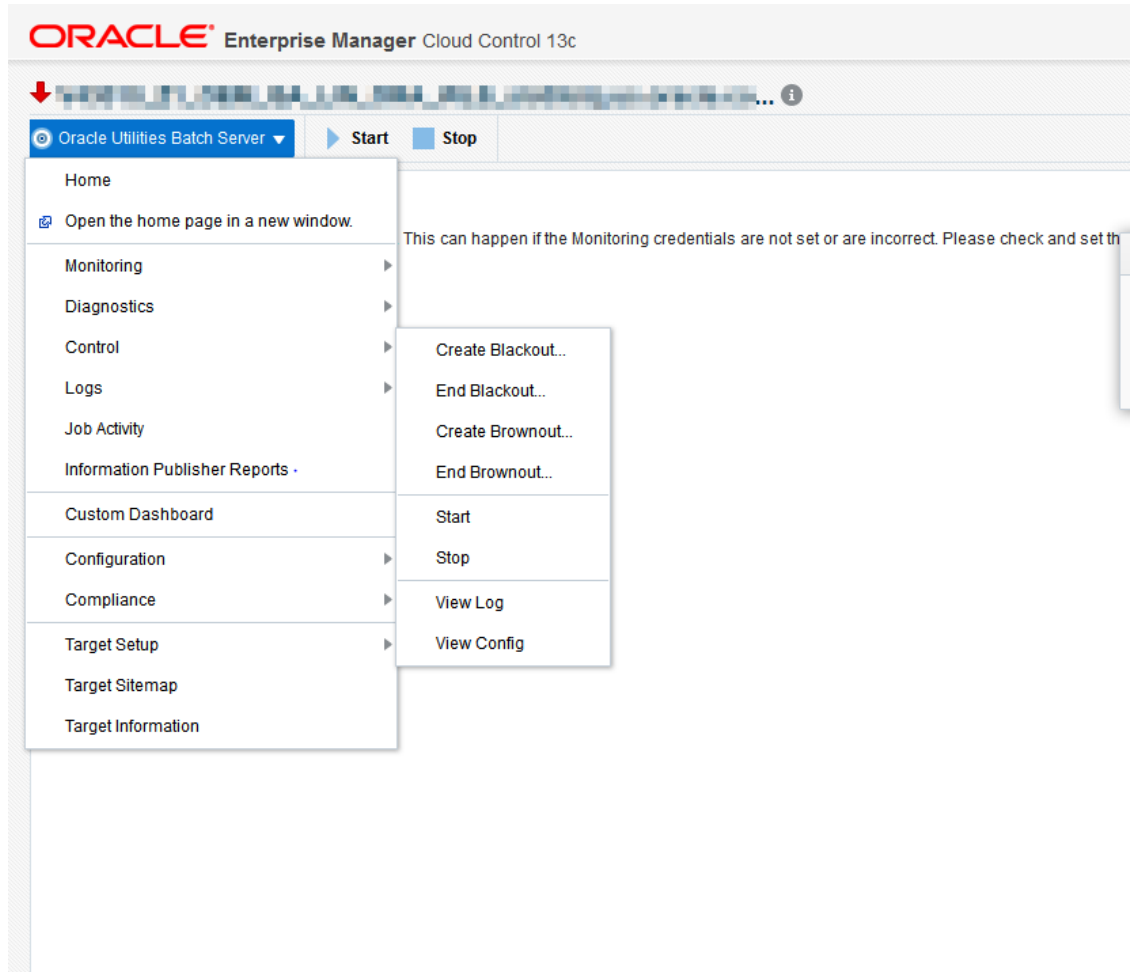


Figure 6-11 Batch Page functions



7

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`).
- Environment-specific log files can be found in `$SPLEBASE/logs/system`, and are named `ouaf_oem*.log`.