



HP Oracle LMS

Software Version: 1.20

User Guide

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Universal Discovery for Oracle License Management Implementation Software

Overview

Universal Discovery for Oracle License Management Implementation Software enables you to collect the required data for review, analysis and checking, and to send it to Oracle for use by their License Management Services division.

Universal Discovery for Oracle License Management Implementation Software uses SQL queries to the underlying Oracle databases, and enriches that data with data discovered by Universal Discovery's host discoveries.

Supported Versions

UCMDB version	Content Pack version	Oracle version
UCMDB 10.01 CUP1 or later CUP	Content Pack 12 Update 15 or a later update	Oracle version 8 and later, up to version 11g
UCMDB 10.11/10.20/10.21, with or without CUPs	<ul style="list-style-type: none"> Content Pack 15 Update 3 or a later update Content Pack 16 or later content pack, with or without updates 	Oracle version 8 and later

Database Privileges Required to Collect Oracle LMS Data

The following database privileges are required to collect Oracle LMS data. These privileges must be granted to the DB user whose credentials are used to gather the data.

- CREATE SESSION
- SELECT ANY TABLE
- SELECT ANY DICTIONARY (for Oracle 9i or higher)
- When DATABASE VAULT is in use, PARTICIPANT or OWNER authorization on "Oracle Database Vault Realm" is needed

Upgrade Path

You can upgrade from Oracle LMS 1.0 or 1.10. If you are running Oracle LMS 1.0 or 1.10, simply install Oracle LMS 1.20.

How to Deploy the Software

This task contains the following steps:

1. Prerequisite - Install UCMDB version 10.01 CUP 1 or above

This software requires the UCMDB version to be 10.01 CUP 1 or above. If UCMDB 10.01 CUP 1 or above is already installed, ignore this step and move to step 2. Otherwise, perform the following:

- To install UCMDB 10.01, follow the instructions in the interactive *HP Universal CMDB Deployment Guide*.
- To install UCMDB 10.01 CUP 1 or above, follow the instructions in the *HP Universal CMDB 10.01 CUP Release Notes* for the CUP that you are installing.

Note: You are recommended to ensure you have installed the latest Universal CMDB CUP.

2. Prerequisite - Install Universal Discovery Content Pack 12 Update 1 (CP 12.01) or above

This software requires Universal Discovery Content Pack 12 Update 1 (CP 12.01) or above. If CP 12.01 or above is already installed, ignore this step and move to step 3. Otherwise, follow the instructions for installing CP 12.01 or above in the *HP UCMDB Universal Discovery Content Pack Update (CP) Release Notes* for the Content Pack Update that you are installing.

Note: You are recommended to ensure you have installed the latest Universal Discovery Content Pack Update.

3. Deploy the package

- a. Locate the file **OracleLMS.zip** on the supplied DVD, and save it to a directory on the local hard drive.

- b. Deploy the **OracleLMS.zip** package from the local hard drive, following the instructions in the section describing how to deploy a package in the *HP Universal CMDB Administration Guide*.

What's New

What's New in Version 1.20

The discovery logic has been enhanced to use Oracle LMS scripts version 15.1. These scripts include the following new functionality:

- Usage detection of pluggable database (PDB)
- Enhanced usage detection of Database Vault
- Usage detection for Database In-Memory Option
- Other bug fixes and enhancements

What's New in Version 1.10

New features for Oracle LMS version 1.10 are as follows:

The discovery logic has been enhanced to use Oracle LMS scripts version 14.1. These scripts include the following new functionality:

- Usage detection for the 12c Multitenant Option.
- Enhanced usage detection for OEM Packs. Most notably, the process has been enhanced to collect and reveal real usage of OEM Packs in OEM 12c Cloud Control. This OEM version records weekly statistics about the usage of Licensed Links available in OEM pages (GUI), through a mechanism that is similar to Database feature usage statistics collection.

Note: Oracle 12c is supported when used with UCMB 10.10 or later.

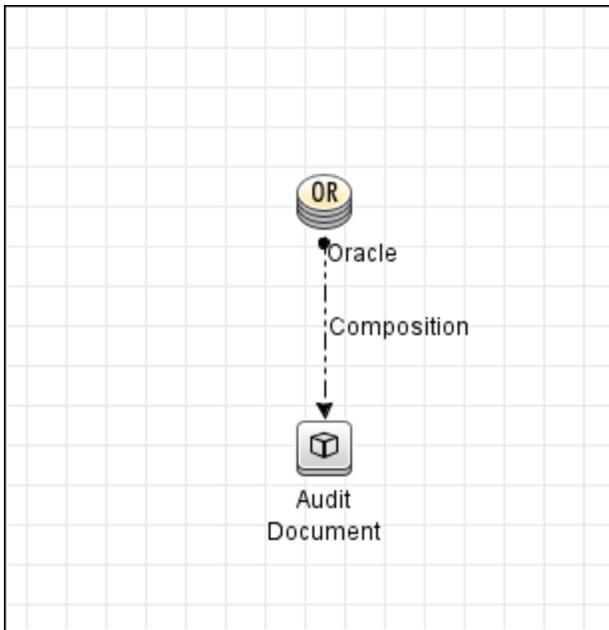
- Tuning Pack real usage measurement is also enhanced through the detection of SQL Tuning Advisor, SQL Access Advisor and SQL Tuning Sets features.

- More features of the Advanced Compression, Advanced Security, and Active Data Guard Options are now detected, including Flashback Data Archive (Total Recall), now an Advanced Compression feature.

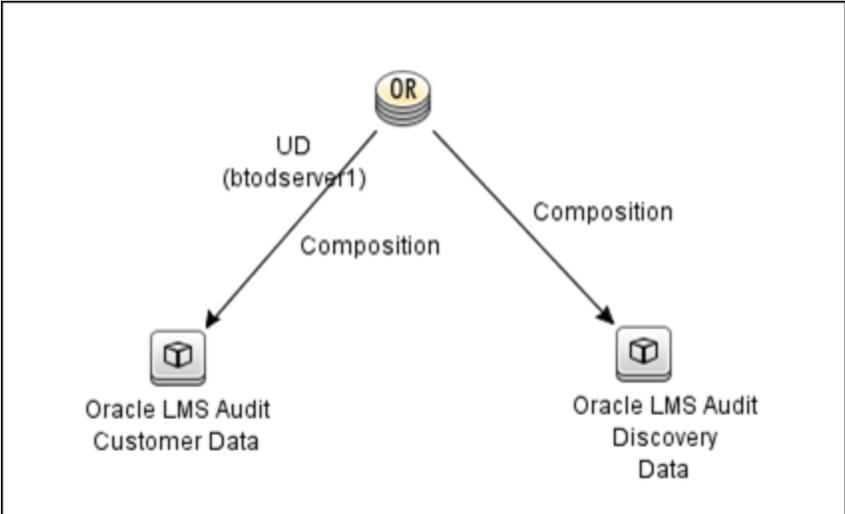
Topology

The following image shows the Oracle topology.

Note: For a list of discovered CITs, see "[Discovered CITs](#)" on page 27.



The following image shows the reported CI instances.



The reported CI instances are:

- **Oracle LMS Audit Customer Data** (customer input fields)

This CI is used to store the data provided by users and has the following parameters:

- Aggregation Level
- Application Name
- Application Status
- Group
- Measurement Comments
- Oracle CSI
- Server Name in the Cluster
- User Count

- **Oracle LMS Audit Discovery Data** (CSV data)

This CI is used to store the data captured by the discovery jobs. The CSV files are generated according to that data.

Discovery Mechanism

In outline, Universal Discovery for Oracle License Management Implementation Software:

1. Connects to the target Oracle database server using SQL.
2. Executes queries on the target Oracle database server.
3. Retrieves data discovered from other jobs (such as Inventory Discovery activity) to populate some LMS data, including partitioning_method and CPUs.
4. Collects user input data as LMS data.

How to Discover Oracle LMS Data

Note: Installing the Oracle LMS package adds Oracle LMS related resources to UCMDB including:

- An activity in **Data Flow Management > Universal Discovery > Zone Based Discovery > New Discovery Activity > Auditing**. For more information see the section describing how to run a zone-based discovery in the *HP Universal CMDB Data Flow Management Guide*.
- The **Oracle LMS Data Collection by SQL** job in **Data Flow Management > Universal Discovery > Discovery Modules/Jobs > Discovery Modules > Auditing**.
- The **Oracle LMS Report** in **Modeling > Reports > Custom Reports > Custom > Auditing**.

Outline

Following is the discovery process for collecting Oracle LMS data:

- Configuring and activating discovery, to discover (a) the servers hosting Oracle databases, and (b) virtualization information
- Discovering Oracle database instances
- Running the LMS job on the discovered Oracle database servers to collect the LMS data

Task

Note: This part of the document describes all the task steps. You may already have completed some of these steps. If so, you do not have to repeat such steps, though you should ensure the configurations are accurate. For example, you do not need to create a new Management Zone if you already have one.

You must have full read access rights to the target Oracle database server.

This task includes the following steps:

1. Prerequisite - Set up protocol credentials

You must configure the following protocols:

- NTCMD, SSH, Telnet or UDA; to discover the hosts where Oracle is installed.
- Generic DB Protocol (SQL); to discover Oracle instances.
- VMware VIM; to discover virtualization topology.

For details, see the section describing Data Flow Probe Setup in the *HP Universal CMDB Data Flow Management Guide*.

Note: If you prefer not to configure SID in the Oracle credential, you can discover the Oracle SID in either of the following ways:

- Run the Basic Software Configuration Discovery Activity to collect the SID information.
 - i. Go to **Data Flow Management > Universal Discovery > Zone-Based Discovery > Management Zones** > select a Management Zone > click  > select **New Discovery Activity > Software Configuration > Basic**.

- ii. Configure the activity.

Make sure you select the **Run Oracle Discovery** check box on the Discovery Preferences page.

- iii. Right-click the new activity you just configured and select **Activate** to discover the Oracle CI with SID information.

- Run the **Data Flow Management > Universal Discovery > Discovery Modules/Jobs > Discovery Modules > Hosts and Resources > Basic Applications > Host Applications by Shell** job to discover the Oracle SID.

2. Create a Management Zone

Go to **Data Flow Management > Universal Discovery > Zone Based Discovery**, and click the  button. **Select New Management Zone.**

For details, see the section describing how to run a zone-based discovery in the *HP Universal CMDB Data Flow Management Guide*.

3. Create an Infrastructure Discovery activity and activate it

- a. Go to **Data Flow Management > Universal Discovery > Zone-Based Discovery > Management Zones**.
- b. Select the appropriate Management Zone.
- c. Click the  button.
- d. Select **New Discovery Activity > Infrastructure**.

The **New Infrastructure Discovery Activity** dialog box appears.

For details, see "Infrastructure Discovery Activity" in the *HP UCMDB Discovery and Integrations Content Guide - Discovery Activities* document.

4. Create an Inventory Discovery activity and activate it

- a. Go to **Data Flow Management > Universal Discovery > Zone-Based Discovery > Management Zones**.
- b. Select the appropriate Management Zone.
- c. Click the  button.
- d. Select **New Discovery Activity > Inventory**.

The **New Inventory Discovery Activity** dialog box appears.

For details, see "Inventory Discovery Activity" in the *HP UCMDB Discovery and Integrations Content Guide - Discovery Activities* document.

Important:

- If Oracle is also hosted on Microsoft Hyper-V, Solaris Zones, or VMware ESX, you have the following options:
 - Enable **Include virtualization topology** on the **Virtualization** page of the Inventory Discovery Activity wizard.
 - Create a Virtualization Discovery activity, and activate it. (See below.)

- If Oracle is hosted on IBM LPAR (HMC), Linux Xen/KVM, Oracle VM for SPARC, or HP nPartitions, you must create a Virtualization Discovery activity and activate it.

To create a Virtualization Discovery activity and activate it:

- Go to **Data Flow Management > Universal Discovery > Zone Based Discovery > Management Zones**.
- Select the appropriate **Management Zone**.
- Click the  button.
- Select **New Discovery Activity > Software Configuration > Virtualization**.

The **New Virtualization Discovery Activity** dialog box appears.

- Create the activity and activate it by following the online prompts through the activity wizard. You must enable discovery of the virtualization technologies that are in your environment.

5. Create a Database Discovery activity and activate it

- Go to **Data Flow Management > Universal Discovery > Zone Based Discovery > Management Zones**.
- Select the appropriate **Management Zone**.
- Click the  button.
- Select **New Discovery Activity > Software Configuration > Database**.

The **New Database Software Configuration Discovery Activity** dialog box appears.

- Create the activity and activate it by following the online prompts through the activity wizard. You must enable **Run Oracle Discovery** in the **Discovery Preferences** page of the activity wizard.

6. Create an Oracle LMS Audit activity and run it

For details, see "[Oracle LMS Audit Activity](#)" on page 17.

How to Access the Oracle LMS Data

1. In **Modeling**, navigate to **Reports > Custom Reports > Auditing > Oracle LMS Report**.
2. Drag **Oracle LMS Report** to the right pane.

Note: You may also double-click the report to make it display in the pane.

3. Click **Export LMS Data**.

A Save dialog box is displayed. The data is saved to a zip file named, by default, **OracleLMS<date><time>** containing the following CSV files:

- **LMS_DBA_USERS.csv**
- **LMS_DETAIL.csv**
- **LMS_OPTIONS.csv**
- **LMS_OVERVIEW.csv**
- **LMS_V\$LICENSE.csv**
- **LMS_V\$SESSION.csv**

See also "[How to Edit the LMS Data Customer Fields](#)" on the next page.

Tip: You may also access the Oracle LMS Data by exporting it using the JMX Console.

1. Log in to the JMX Console on the UCMDB server.
2. Click **Discovery Manager**, and browse to **exportOracleLMSData**.
3. Enter a suitable value (an integer) for **customerid**.
4. Click **Invoke**.

Assuming UCMDB is installed in **C:\hp\UCMDB\UCMDBServer**, the file is saved to the path **C:\hp\UCMDB\UCMDBServer\runtime\discovery\customer_<customerid>**, where <customerid> is the number you entered in the previous step.

Note: The LMS data from UCMDB is created in a format required by Oracle. Besides this ZIP file, Oracle may require other information as part of the LMS data collection. If required, you will have to work on that with Oracle.

How to Edit the LMS Data Customer Fields

1. Go to **Modeling > IT Universe Manager**.
2. In Search CIs mode, search for the **Oracle LMS Audit Customer Data** CI in the topology map or the CI Selector, and select it.
3. In the **Advanced Pane**, select the **Properties** tab and click **Edit**.

The **Configuration Item Properties** dialog box is displayed.

4. Click **Document Content**.

A file containing the customer fields is displayed. You may edit and save the file as required.

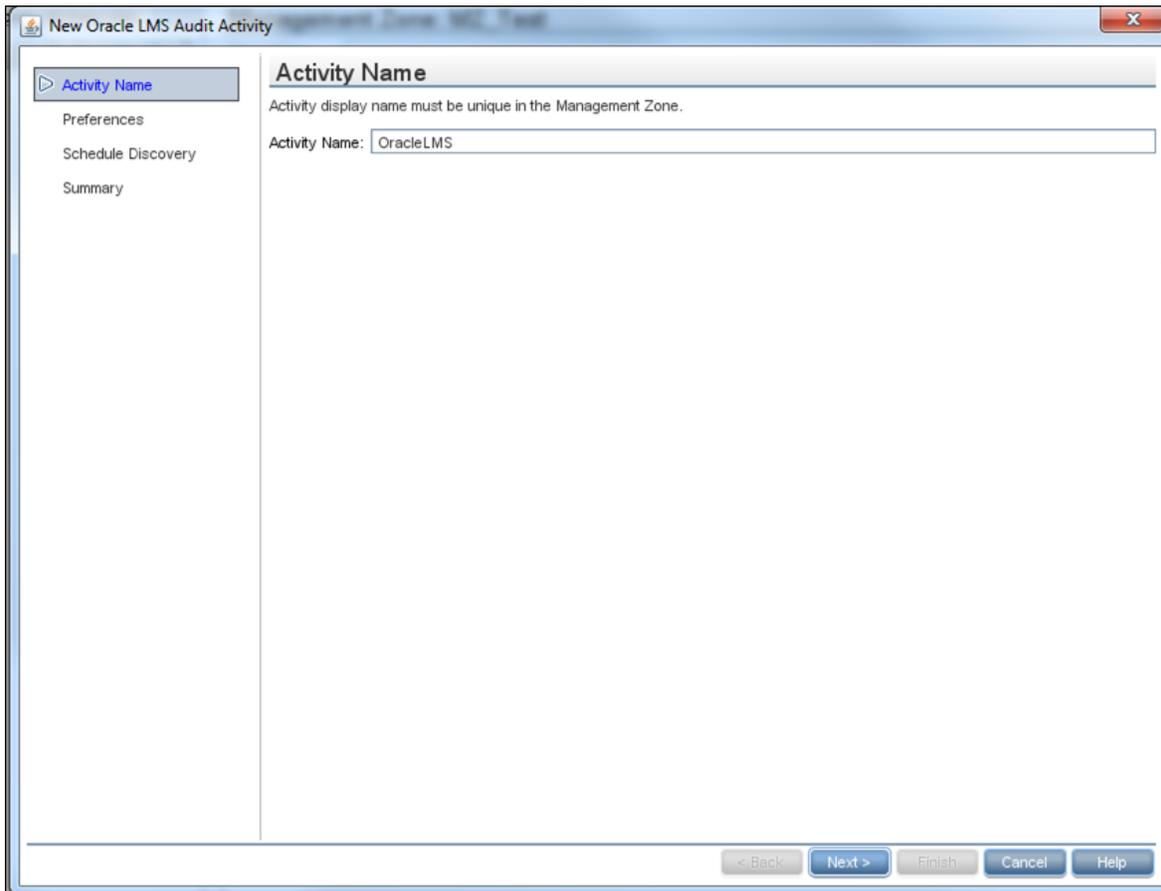
Oracle LMS Audit Activity

Enables you to collect Oracle data.

To access	In Data Flow Management > Universal Discovery > Zone-Based Discovery > Management Zones : 1. Select the appropriate Management Zone 2. Click the  button. 3. Select New Discovery Activity > Auditing > Oracle LMS The New Oracle LMS Audit Activity dialog box appears.
Important Information	For more information, hold the pointer over a question mark icon.
Wizard Map	The Oracle LMS Audit Activity contains: "Activity Name Page" > "Preferences Page" > "Schedule Discovery Page" > "Summary Page"

Activity Name Page

Enables you to configure a name for the Oracle LMS Audit activity.



Activity Name Page

Important Information	General information about the activity is available in "Oracle LMS Audit Activity" on the previous page. Note: This screen is not displayed when editing an Oracle LMS Audit activity.
Wizard Map	The "Oracle LMS Audit Activity" contains: Activity Name Page > "Preferences Page" > "Schedule Discovery Page" > "Summary Page"

User interface elements are described below:

UI Element (A-Z)	Description
Activity Name	<p>Enter a unique name for the Oracle LMS Audit activity.</p> <p>Note: Names should consist only of alphanumeric characters (a-z, A-Z, 0-9), hyphens (-), and periods (.). Names appear in some reports. Additionally, names may also appear in the Updated by attribute in the CI Properties page if a CI was updated by a job. Names can be changed at any time, however, the Job ID attribute that is associated with the job name does not change.</p>

Preferences Page

Enables you to select preferences for the Oracle LMS Audit activity.

Preferences Page

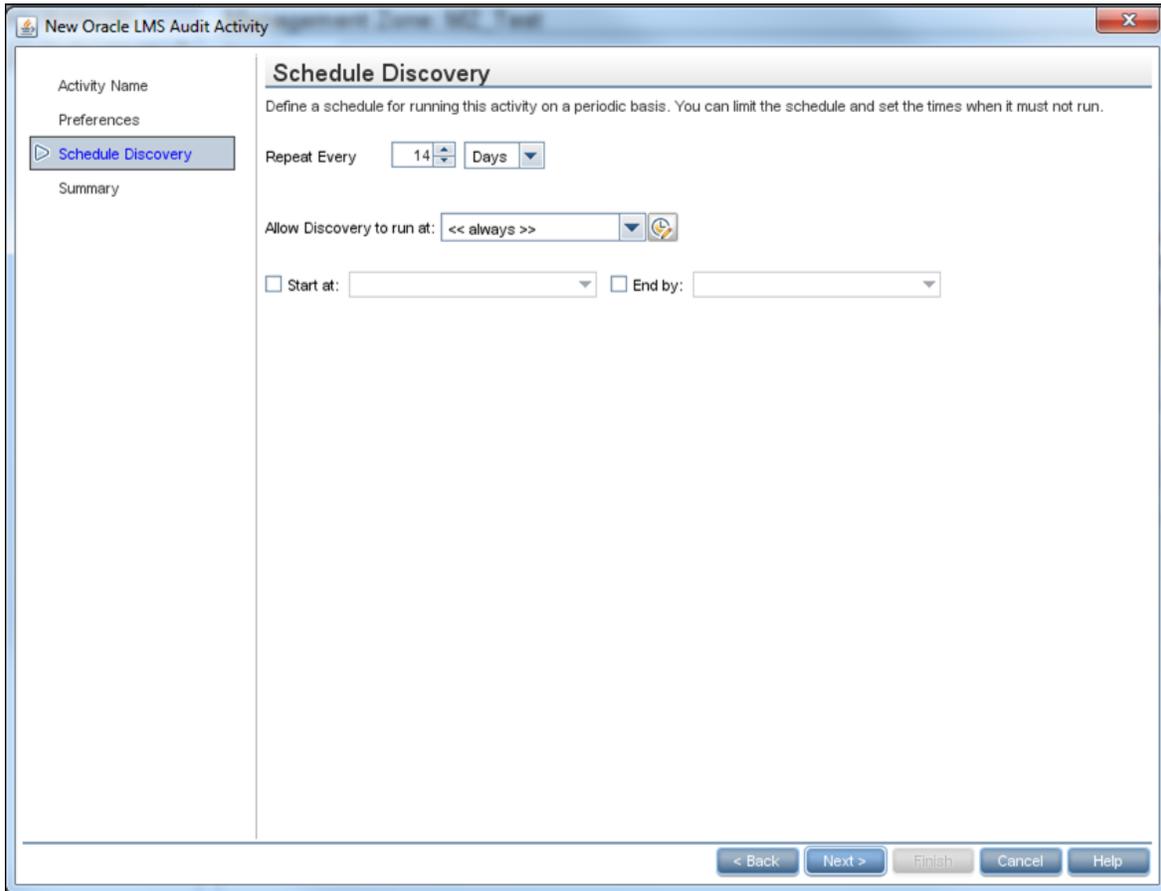
Important Information	General information about the activity is available in "Oracle LMS Audit Activity" on page 17 .
Wizard Map	The "Oracle LMS Audit Activity" contains: "Activity Name Page" > Preferences Page > "Schedule Discovery Page" > "Summary Page"

User interface elements are described below:

UI Element (A-Z)	Description
Fill Customer Fields	<p>Customer Fields are user definable fields in the Oracle LMS data.</p> <p>You may select this option and complete these fields here, if you want them to apply to all databases queried by this activity.</p> <p>Otherwise, you may set unique values for these fields in the DocumentContent attribute of the AuditDocument CI instance (named Oracle LMS Audit Customer Data) stored in the database.</p> <p>For details, see "Parameters" on page 27.</p>
Compressed Size	<p>A limit on the size of the collected LMS data per database CI, in bytes.</p> <p>Default: 2 MB (2,097,152 bytes).</p>

Schedule Discovery Page

Enables you to define a schedule for the Oracle LMS Audit activity.



Schedule Discovery Page

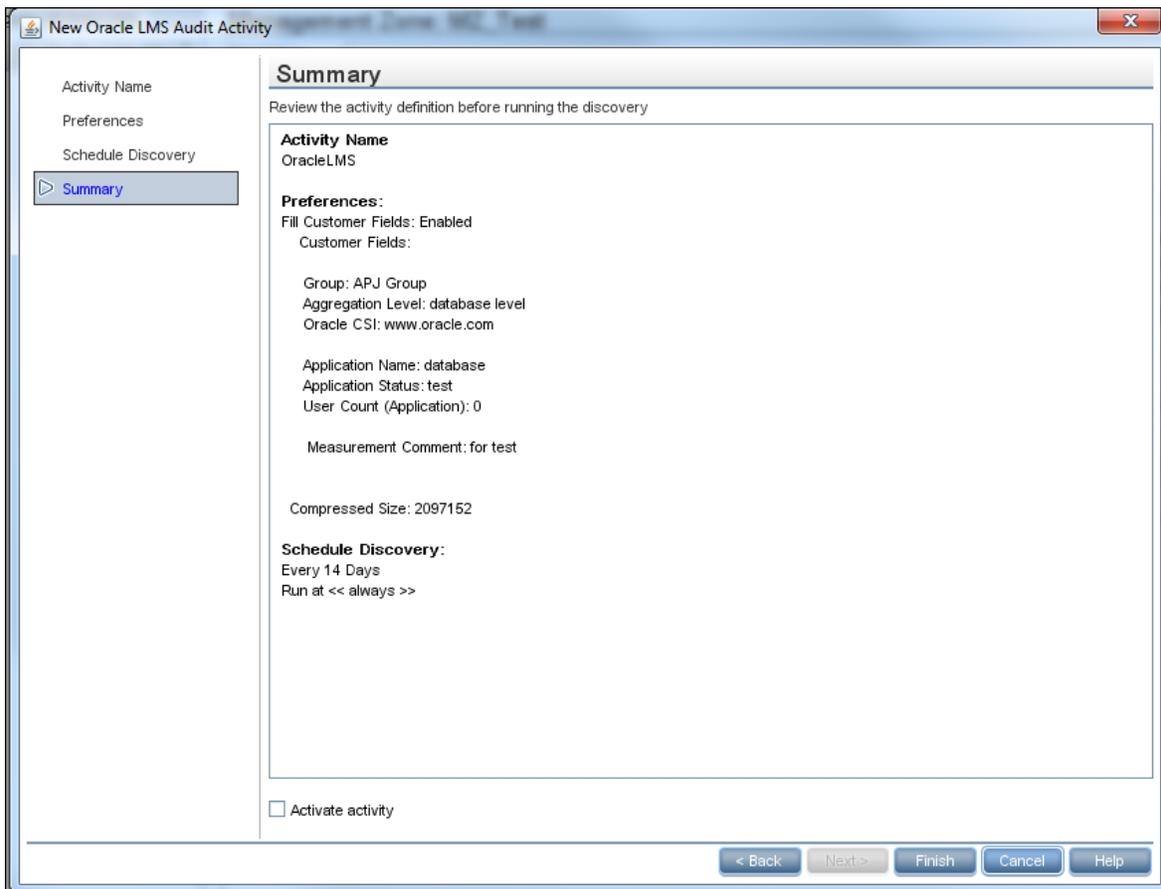
Important Information	General information about the activity is available in "Oracle LMS Audit Activity" on page 17.
Wizard Map	The "Oracle LMS Audit Activity" contains: "Activity Name Page" > "Preferences Page" > Schedule Discovery Page > "Summary Page"

User interface elements are described below:

UI Element (A-Z)	Description
Allow Discovery to run at	Select the time template that you want to use to schedule the Oracle LMS Audit activity.
End by:	Choose the date and time when the Oracle LMS Audit activity must finish running by selecting the End by check box, opening the calendar, and selecting the date and time.
Repeat Every	Select how often the Oracle LMS Audit activity runs. Type or select a value for the interval between successive runs and choose the required unit of time (hours, days, or weeks).
Start at:	Choose the date and time when the Oracle LMS Audit activity must begin running by selecting the Start at check box, opening the calendar, and selecting the date and time.

Summary Page

Enables you to review all configurations and parameter values before running the Oracle LMS Audit activity.



Summary Page

<p>Important Information</p>	<p>Review configurations and decide whether to run the activity or go back and make changes.</p> <p>General information about the activity is available in "Oracle LMS Audit Activity" on page 17.</p>
<p>Wizard Map</p>	<p>The "Oracle LMS Audit Activity" contains:</p> <p>"Activity Name Page" > "Preferences Page" > "Schedule Discovery Page" > Summary Page</p>

User interface elements are described below:

UI Element (A-Z)	Description
<p>Activate Activity</p>	<p>Activates the activity upon creating it.</p> <p>Note: If you do not want to activate the activity at this stage, you can activate it later from the Zone-Based Discovery view.</p>
<p>Finish</p>	<ul style="list-style-type: none"> • Creation mode: Closes the wizard and adds the activity to the Management Zone tree. <p>Note: If you selected Activate Activity, the activity is activated upon creation.</p> <ul style="list-style-type: none"> • Edit mode Saves the changes to the activity. <p>Note: You cannot activate the activity from the wizard in Edit mode.</p>

Oracle LMS Data Collection by SQL Job

Adapter

This job uses the **Oracle LMS data collection by SQL** adapter.

Discovery Flow

1. Connect to the target Oracle database with Oracle SID or session ID using the Generic DB protocol (SQL).
2. Run the SQL query in the target Oracle database and save the result to the probe database.
3. Send the collected data from the probe database to the UCMDB server.

Oracle LMS Data Collection by SQL Adapter

Input CIT

Oracle

Input TQL Query

Host with Oracle with LMS

Triggered CI Data

Name	Value
core_number	\${Cpu.core_number:NA}
cpu_clock_speed	\${Cpu.cpu_clock_speed:NA}

Name	Value
cpu_name	\${Cpu.name:}
cpu_specifier	\${Cpu.cpu_specifier:NA}
credentialsId	\${SOURCE.credentials_id}
discovered_host_name	\${HOST.name:NA}
discovered_model	\${HOST.discovered_model:NA}
discovered_os_name	\${HOST.discovered_os_name:NA}
discovered_vendor	\${HOST.discovered_vendor:NA}
document_content	\${AuditDocument.document_content:NA}
host_isvirtual	\${HOST.host_isvirtual:NA}
ip_address	\${SOURCE.application_ip}
logical_cpu_count	\${Cpu.logical_cpu_count:NA}
partitioning_amazon_ec2_config	\${Amazon EC2 Config.name:NA}
partitioning_hp_npar_config	\${HP nPar Config.name:NA}
partitioning_hp_vpar_config	\${HP vPar Config.name:NA}
partitioning_hyper-v_partition_config	\${HyperV Partition Config.name:NA}
partitioning_ibm_lpar_profile	\${IBM LPar Profile.name:NA}
partitioning_solaris_zone_config	\${Solaris Zone Config.name:NA}
partitioning_vmware_host_resource	\${VMware Host Resource.name:NA}
partitioning_xen_domain_config	\${Xen domain config.name:NA}
port	\${SOURCE.application_port:NA}
sid	\${SOURCE.name:NA}

Used Scripts

- **Oracle_LMS.py**
- **OracleLMSDBaUsers.py**
- **OracleLMSDetail.py**
- **OracleLMSOptions.py**
- **OracleLMSOverview.py**
- **OracleLMSUtils.py**
- **OracleLMSVLicense.py**
- **OracleLMSVSession.py**

Discovered CITs

- **AuditDocument**
- **Composition**
- **Oracle**

Parameters

Name	Description
aggregationLevel	The relevant aggregation level. For example: database level, server level, or network level.
applicationName	The name of the application running in conjunction with the Oracle product.
applicationStatus	The status of the application. For example: development, production, test environment, or training.

Name	Description
group	The relevant grouping as you define it. For example: region, or department.
measurementComment	Additional comments you want to add to the data.
oracleCSI	The Oracle Customer Support Identifier that you use when dealing with Oracle Support Services.
serverNameInTheCluster	If the servers are clustered, the names of the servers in the cluster.
size	Default size of the compressed LMS data in bytes.
userCountForApplication	If the DBA_USERS table has generic usernames or schemas to connect to the application or database, this is the User Count at Application Level.

Troubleshooting and Limitations

- **Problem:** The warning message "Configuration file X size (Y) is too big" appears when running the Oracle LMS Data Collection job.

Solution: Increase the size parameter in the Oracle LMS Data Collection by SQL adapter to be greater than **Y**. You should leave some margin (for example, by making the size 10% larger than Y) to prevent reoccurrence of this problem in subsequent runs.

- **Problem:** The following warning message appears when running the Oracle LMS Data Collection job:

"TotalPhysicalCores is not discovered. You should run an Inventory Activity to discover this data. For details, see Inventory Activity in the HP Universal CMDB Discovery and Integration Content Guide."

Note: Instead of **TotalPhysicalCores**, the message may show SocketsPopulatedPhys, ProcessorIdentifier, PartitioningMethod, etc.

Solution: Run an Inventory Discovery or Virtualization Discovery, then re-run Oracle LMS Data Collection by SQL.