BDNA

DOCUMENTATION

Discover for Oracle Licensing 7.6.1

Data Extraction Guide

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BDNA Discover for Oracle Licensing

Overview

This document details the steps required to complete a BDNA Discover for Oracle Licensing™ scan for the purpose of collecting Oracle License Management Services (LMS) discovery data. A BDNA Discover Oracle Licensing scan discovers all of the data necessary to satisfy an Oracle LMS data request, in a file format acceptable to the Oracle LMS team. The steps needed to complete a BDNA Discover for Oracle Licensing™ scan are as follows:

- Installing the Oracle LMS license key
- BDNA Discover Level 1, Level 2, and Oracle Level 3 scanning
- Oracle LMS data export

Prerequisites

This document assumes that you are already familiar with BDNA Discover scanning concepts. The process discussed in this document requires a working BDNA Discover, version 7.5.0 or later, and a Collection Store with the December 2011 Enterprise Sequence or later installed. For more information on installation and scan concepts, refer to the *BDNA Discover Installation Guide* and the *BDNA Discover User Guide*.

Installing the Oracle LMS License Key

Oracle LMS discovery is integrated with the Enterprise Sequence as a separate licensable feature. You must apply the Oracle LMS license in order to successfully discover Oracle LMS at Level 3.

Note: The LMS license key must be installed on both the Collection Store and the FactBase servers.

Caution: You **MUST** have all components started at the time of loading the LMS license key.

To apply the Oracle LMS license, execute the following shell script:

⇨ `$BDNA_HOME/conf/bcp_store/EnterpriseSequence/bin/install_oracle_lms_license.sh`

The script takes one argument: the license key. For example:

```
sh install_oracle_lms_license.sh -k <license_key>
```

Once you successfully load the key, you can perform an Oracle LMS scan using the same process utilized for an Oracle Level 3 scan. When a valid Oracle LMS license is present, Oracle LMS discovery automatically launches at the same time as your usual Oracle Level 3 discovery.

Note: You must re-apply the license every time you run the `initdb` script. There is no limitation as to how late the license can be applied after scanning. For example, the license can be applied after a Level 3 scan has been scheduled or completed, or reports have been built. Oracle LMS collection continues immediately after the license key is applied. When the new collection is complete, you must schedule the rebuilding of snapshots and reports to view the Oracle LMS reports.

Provisioning the User Account

Provision the Oracle user account by running the scripts located here: `$BDNA_HOME/scripts/Administrator/Oracle`. This directory contains a readme file and the Level 3 Oracle LMS scripts:

Note: The readme file provides a detailed description of each script and its usage.

- README-Instructions.txt
- Helper_YesOracleLMS_Oracle11g.sql_lib
- Helper_YesOracleLMS_Oracle9i.sql_lib
- Helper_YesOracleLMS_Oracle10g.sql_lib
- Create_Credential_NoOracleLMS.sql
- Create_Credential_YesOracleLMS.sql

Requirements for a Successful Oracle Level 3 LMS Scan

- The Oracle LMS user must have been created on the target instance. (This is not necessary if you use OS Authentication.)
- To complete an Oracle Level 3 LMS scan, all target hosts must first successfully complete a Level 1 and Level 2 scan. For detailed information about running a Level 1and Level 2 scan, refer to the *BDNA Discover User Guide*.
- For successful Level 2 Oracle discovery on Windows servers, the provided Operating System credential must be a local or domain administrator. Additionally:
  - TFTP must be installed and available to the specified Operating System user.
- For UNIX Level 2 and Level 3 discovery, the Oracle home directory must be accessible to the specified OS user and sqlplus must be executable by the scan user.
- The Oracle LMS user must have been created on the target instance.
- For UNIX hosts, Oracle cannot be installed on an AFS or NFS mounted share for successful Oracle discovery. If Oracle is installed under an AFS or NFS share the Oracle installation will not be discovered during Level 2 discovery.
- Traditional Oracle Level 3 discovery and Level 3 Oracle LMS discovery use the same Credential type and Scan Task type, as detailed in the *BDNA Discover User Guide* under the Level 3 scanning section.

Verifying Oracle Level 3 LMS Tasks

In order to verify whether the Oracle Level 3 LMS tasks have been executed on a given host, the following list of Collection Tasks may be viewed under the Scan Administration Task Summary reports. For instructions related to accessing the Task Summary report under Scan Administration, refer to the *Discover User Guide*. The list divides the Collection Tasks by Operating System type first, and then by either non-LMS or LMS task type.

Note: Non-LMS collection tasks are executed as part of a traditional Level 3 Oracle discovery. These collection tasks may report as failed when executing an Oracle Licensing scan. Failures in the Non-LMS collection tasks may be ignored.

UNIX Collection Tasks

Non-LMS Oracle Level 3 Collection Tasks

```
UNIXOracleInstanceStatic
UNIXOracleInstanceDynamic
UNIXOracleInstanceRealTime
```

LMS Oracle Level 3 Collection Tasks

```
UNIXOracleInstanceDBOptions
UNIXOracleInstanceLMSOptions
UNIXOracleInstanceLMSOptions2
UNIXOracleInstanceLMSOptions3
UNIXOracleInstanceLMSOptions4
UNIXOracleInstanceLMSOptions5
UNIXOracleInstanceLMSOptions6
UNIXOracleInstanceLMSOptions7
UNIXOracleInstanceLMSRawDataDetail
UNIXOracleInstanceLMSRawDataOptions
UNIXOracleInstanceLMSRawDataDBAUsers
UNIXOracleInstanceLMSRawDataVLicense
UNIXOracleInstanceLMSRawDataVSession
```

Windows Collection Tasks

Non-LMS Oracle Level 3 Collection Tasks

```
WindowsOracleInstanceStatic
WindowsOracleInstanceDynamic
WindowsOracleInstanceRealTime
```

LMS Oracle Level 3 Collection Tasks

```
WindowsOracleInstanceDBOptions
WindowsOracleInstanceLMSOptions
WindowsOracleInstanceLMSOptions2
WindowsOracleInstanceLMSOptions3
WindowsOracleInstanceLMSOptions4
WindowsOracleInstanceLMSOptions5
```

```
WindowsOracleInstanceLMSOptions6
WindowsOracleInstanceLMSOptions7
WindowsOracleInstanceLMSRawDataOpt1a
WindowsOracleInstanceLMSRawDataOpt1b
WindowsOracleInstanceLMSRawDataOpt2
WindowsOracleInstanceLMSRawDataOpt3
WindowsOracleInstanceLMSRawDataDetails
WindowsOracleInstanceLMSConcurrencyOptions
```

Generating Oracle LMS 3PTV Output

After completing all Oracle Level 3 Collection Tasks you can use the following steps to generate the Oracle LMS 3PTV output in the format specified by Oracle LMS.

Note: These steps must be completed against the Collection Store schema. Oracle LMS 3PTV output generation is not currently supported against a FactBase schema.

In addition to the steps used to export the results, after refreshanalytics has been completed in step 1, the LMS data may be viewed directly using the Analytics application. All Oracle LMS related reports may be found under the Analytics application in a folder named ‘Oracle Licensing’.

To generate Oracle LMS 3PTV Output from a Collection Store:

The following steps must be completed while logged on to the primary BDNA Discover Linux component as the user `bdna`. The export will target the schema currently connected to the Collection Store instance, as specified in the file `$BDNA_HOME/conf/connection.properties`. If export from an instance other than the currently connected instance is desired, update the connection.properties in order to specify a different target schema.

1. Connect to the Collection Store and run refreshanalytics using the bdna shell
2. Execute the following shell script to generate the Oracle LMS 3PTV output:

   ```
   $BDNA_HOME/conf/bcp_store/EnterpriseSequence/bin/ExtractLMS3PTVOutput.sh
   ```

   This script takes one optional argument that may be used to specify a target output directory. If no directory argument is passed to the script the current directory will be the target for the output files. Example:

   ```
   [bdna@server tmp]$ cd $BDNA_HOME/conf/bcp_store/EnterpriseSequence/bin/
   [bdna@server bin]$ sh ./ExtractLMS3PTVOutput.sh -f /tmp
   Usage: ExtractLMS3PTVOutput.sh [-f target_folder]
   ```

   ```
   where:
   [-f target_folder] is the directory path where the LMS 3PTV output files get
   saved. (optional)
   [Thu Oct  6 10:38:08 PDT 2011] Generating LMS 3PTV Output files
   LMSTABLES.DMP and LMS_OVERVIEW.CSV.
   [Thu Oct  6 10:38:09 PDT 2011] exporting tables onto lmsTables.dmp file
   ```

   ```
   Export: Release 10.2.0.4.0 - Production on Thu Oct 6 10:38:09 2011
   Copyright (c) 1982, 2007, Oracle.  All rights reserved.
   ```

```
Connected to: Oracle Database 10g Enterprise Edition Release 10.2.0.4.0 -
Production
With the Partitioning, OLAP, Data Mining and Real Application Testing
options
Export done in WE8ISO8859P1 character set and AL16UTF16 NCHAR character set
server uses AL32UTF8 character set (possible charset conversion)

About to export specified tables via Conventional Path ...

. . exporting table                      LMS_DETAIL          2 rows exported
. . exporting table                     LMS_OPTIONS       1491 rows exported
. . exporting table                   LMS_DBA_USERS         56 rows exported
. . exporting table                   LMS_V$LICENSE          2 rows exported
. . exporting table                   LMS_V$SESSION         58 rows exported
Export terminated successfully without warnings.

[bdna@server bin]$ cd /tmp
[bdna@server tmp]$ ls -lrt
-rw-rw-r--  1 bdna bdna    794 Oct  6 10:38 lmsTables20111006.log
-rw-rw-r--  1 bdna bdna 278528 Oct  6 10:38 lmsTables20111006.dmp
-rw-rw-r--  1 bdna bdna   3004 Oct  6 10:38 lms_overview_20111006.csv
```

To generate Oracle LMS 3PTV Output from a FactBase:

For FactBase, the 'ExtractLMS3PTVOutput.sh' generates the 3PTVoutput by inventory name.

The format of the script command:

```
ExtractLMS3PTVOutput.sh [-f target_folder] [-i inventory_name]
```

where:

`[-f target_folder]` is the folder to copy the output files. (optional)

`[-i inventory_name ]` is the Inventory to be exported. (optional)

Example command:

```
sh ExtractLMS3PTVOutput.sh -f /tmp -i Inventory_Recent
```

Oracle LMS 3PTV Output Requirements

The Oracle Level 3 LMS scan discovers all of the data necessary to satisfy an Oracle LMS data request, in a file format acceptable to the Oracle LMS team.

Oracle LMS 3PTV output requirements stipulate that the exported results contain the following information:

- **Overview Sheet (Part 1)—**Oracle LMS has defined explicit data fields that must be collected and reported. This data has to be presented as a file in **CSV-Format**. (Comma Separated Values).
- **Raw Data (Part 2)—**The tables for the respective data points in the raw data set are **LMS_DETAIL, LMS_OPTIONS,** and **LMS_DBA_USERS.**
- **Concurrent Session Information (Part 3)—**The data set for Concurrency is gathered in the tables **LMS_V$LICENSE** and **LMS_V$SESSION**

The output files generated by the `ExtractLMS3PTVOutput.sh` script are named as follows and match to the parts listed:

- lms_overview_YYYYMMDD.csv—**Part 1 Data**

- lmsTablesYYYYMMDD.dmp—**Part 2 and Part 3 Data**
- lmsTablesYYYYMMDD.log—Export log: This file is not required by Oracle LMS and may be discarded after export is complete.

Note: The string YYYYMMDD is replaced with the current numeric year, month, and day when the script is executed.

Viewing the Oracle LMS Reports

The Oracle LMS reports are formatted according to LMS 3PTV output requirements.

A new folder, Oracle Licensing, is added to the Analytics UI. The Oracle Licensing folder contains the reports related to LMS discovery.

Note: You can access the folder only when a valid LMS license key is installed.

Oracle LMS Reports

- Oracle DB Instance Options Summary — Summary of all DB Options discovered.
- [LMS Report #1] Overview—BDNA report view of all columns that Oracle LMS requires to be collected and can be presented as a CSV-File.
- [LMS Report #2] LMS_DETAIL—BDNA report view of table LMS_DETAIL.
- [LMS Report #3] LMS_OPTIONS—BDNA report view of table LMS_OPTIONS.
- [LMS Report #4] LMS_DBA_USERS—BDNA report view of table LMS_DBA_USERS.
- [LMS Report #5] LMS_V$LICENSE—BDNA report view of table LMS_V$LICENSE.
- [LMS Report #6] LMS_V$SESSION—BDNA report view of table LMS_V$SESSION.

Overview Sheet A

Data Fields

Oracle License Management Services (LMS) has defined specific data fields to be collected by a third-party tool when measuring Oracle software usage. The collected data must be displayed in an overview format that provides the customer with a consolidated view of the Oracle software deployed. It must also provide hardware information for servers where the software is installed and/or used. This file must be provided in CSV format (Comma-separated Values).

As described in Table1, ”Data Fields to be Collected for the Overview Sheet,” each numbered field represents the data point that must be collected by the tool. The table also provides a description of each field, detailing what is required for the Overview Sheet. The Data Source columns indicate whether the data is to be captured by the measurement tool or provided by the customer.

Table 1: Data Fields to be Collected for the Overview Sheet

		Data-Source	
		Tool	**Customer**
1	Group		
	Grouping as defined by the customer (e.g. regions, department, etc)		x
2	Aggregation Level		
	Different levels of aggregations that are used to calculate a value: e.g. database level, server level, network level, etc. Data is usually provided by the customer		x
3	Oracle CSI		
	Oracle Customer Support identifier (CSI) that is used to interact with Oracle Support- Services. Can be usually found on the Oracle Invoice or with the support-renewals.		x
4	Oracle Product Category		
	measured products e.g. Database, Application Server, etc.	x	
5	Physical Machine Id / Host Name		
	Name or the physical server - also known as host-name	x	
6	Virtual Machine Id / Host Name		
	Name or the virtual server - that is running within a physical server	x (optional)	
7	Database Edition		
	Edition of the Database e.g. Enterprise, Standard, Standard One, Express Edition	x	
8	Database Name		
	SID of the Oracle Database (can be crosschecked with TNSNAMES.ORA)	x	

Table 1: Data Fields to be Collected for the Overview Sheet (Continued)

9	Version		
	Version of the Database installed on the physical/virtual server	x	
10	Options Installed		
	Database Options or additional components to the database which require a license. Here the list of installed and activated Options should be listed using the shortcuts mentioned in Appendix 5. Please note that Management Packs might have slightly different names (from the measurement result) – depending on the version of the database.	x	
11	Options in use		
	Here only list the Database Options which are in use using the shortcuts mentioned in Appendix 5.	x	
12	Packs Granted		
	List of Management Packs where the Access has been granted (= activated) using the shortcuts mentioned in Appendix 5. Please note that Packs could have slightly different names (out of the measurement) – depending on the Version of the database.	x	
13	Packs Agreed		
	List of Management Packs using the shortcuts in Appendix 5 where the license hint has been “agreed” by the customer. The use of Packs requires additional Licenses for the respective Pack and is not included in the database license (= Pack in Use)	x	
14	Application Name		
	Name of the application running in conjunction with the Oracle product. Usually provided by the customer.		
15	Application Status (prod, test, dev, train...)		
	Status of the Application (e.g. productive, test environment, development, training, etc.)		
16	User Count (DBA Users)		
	Number of distinct database users defined (source: DBA_USERS.USERNAME). Default usernames should not be counted, as they are created during the installation of the products. - see Schemas to exclude in the appendix to this document when counting		
17	User Count (Application)		
	If the DBA_USERS table contains generic Usernames/Schemas to connect to the application / database, the customer should provide the User Count at Application – Level. Usually this is where the user-administration happens.		
18	Server Manufacturer		
	Manufacturer of the physical Server. If Soft- or Hard partitioning is used the manufacturer could be LPAR, vPar, VMware, etc.		

Table 1: Data Fields to be Collected for the Overview Sheet (Continued)

19	Server Model Model of the physical Server. If it is a virtual environment please mention the respective VM-solution here. #18 + 19 can then also be one single data-point		
20	Operating System Operating System the database is running on. If it is a virtual environment – please list the Operating System of the VM.		
21	Sockets populated Physical Number of (Processors) sockets being used / are populated on the physical server. Multi-chip-Modules (IBM) are treated as 1 Socket for each chip that can be added. This could also be interpreted as number of processors on the physical Server		
22	Total Physical Cores Total number of processor-cores of the physical server	x	
23	Processor Identifier Processor type identified by the physical server, e. g. Intel Pentium Core 2 duo, etc.		
24	Processor Speed Processor Speed in MHz / GHz	x	
25	Socket Capacity Physical Maximum number of (Processors) sockets (= socket-capacity) of the physical server. Multi-chip-Modules (IBM) are treated as 1 socket for each Chip that can be added. Usually this information is provided through a lookup-table and can’t be gathered from the hardware.	Lookup-	
26	Total Logical Cores Total number of cores assigned to the logical server	x	

Table 1: Data Fields to be Collected for the Overview Sheet (Continued)

27	Partitioning Methods • Dynamic System Domains (DSD) -- enabled by Dynamic Reconfiguration (DR) Solaris 9 Resource Containers, Solaris 10 Containers • LPAR (adds DLPAR with AIX 5.2) Micro-Partitions • vPar, nPar , HP Process Resource Manager • Integrity Virtual Machine • Secure Resource Partitions Static Hard Partitioning Oracle VM • IX Workload Manager • Affinity Management • Oracle VM , VMware etc. This is not a comprehensive list of all partitioning methods but can be used as a guide	x	
28	Database Role Primary, Standby, Failover (name, database_role - source: V$database)	x	
29	Server Name in the Cluster Usually this information is provided by the customer. Typical question would be: Are the servers clustered? If yes which servers make the cluster?		
30	Top Concurrency Timestamp Timestamp when maximum number of concurrent sessions was captured. This only makes sense, if several measurements have been taken place and more than one timestamp exists. (source: v$session)	x	
31	Sessions Maximum number of concurrent sessions (captured at top concurrency timestamp). Sessions of the tool and SYS database users are not counted. (source: v$session)	x	
32	Instance Sessions Highwater Highest number of concurrent user sessions since the instance was started (source V$LICENSE. SESSIONS_HIGHWATER)	x	
33	Install Date Install date of the Oracle product (source v$DATABASE)	x	
34	Measurement Comment Additional comments out of the measurement or comments from the customer.		

Shortcuts for Database Options and Management Packs

The activation and use of database options should be listed in the overview sheet using the shortcuts shown in Table 2, ”Shortcuts for Database Options and Management Packs.”

Bear in mind that the names of the respective database options in the price list may differ from the names in the measurement result. This occurs because the names sometimes vary in different database versions. If this is the case, it is indicated by an ‘*’ in the “comment” column.

Table 2: Shortcuts for Database Options and Management Packs

Database-Options Names (price list 01/2010)	Shortcut	Comment
Enterprise Edition Options		
Active Data Guard	ADG	
Advanced Compression	AC	
Advanced Security	AS	
Audit Vault **(listed under “other” in the price list – not as an option)**	AV	
Content Database Suite	CDS	
Data Mining	DM	
Data Profiling and Quality	DPQ	
Data Watch and Repair Connector	DWRC	
Database Vault	DV	
Exadata	ED	
In-Memory Database Cache	IMDC	
Label Security	LS	
OLAP	OL	
Partitioning (User)	P	
Real Application Clusters	RAC	
Real Application Testing	RAT	
Records Database	RDB	
Retail Data Model	RDM	
Spatial	SP	
Total Recall	TR	
Warehouse Builder Data Quality	WBDQ	
Warehouse Builder Enterprise ETL	WBEE	
Database Enterprise Management		
AS Provisioning and Patch Automation Pack	OPP	
Change Management Pack	DCM	

Table 2: Shortcuts for Database Options and Management Packs (Continued)

Configuration Management Pack	DCO	*
Data Masking Pack	DDM	
Database Provisioning and Patch Automation Pack	DPP	
Diagnostic pack	DD	
Standalone Provisioning and Patch Automation Pack	SPP	
Tuning Pack	DT	
Application Server Enterprise Management		
Diagnostics Pack for Oracle Middleware	ADP	*
Management Pack for Oracle Coherence	AMC	
Management Pack for Oracle GoldenGate	AMG	
Management Pack for WebLogic Server	AMW	
Management Pack Plus for SOA	AMP	
Business Intelligence Management		
Business Intelligence Management Pack	BIM	
Enterprise 2.0 Management		
Management Pack for WebCenter Suite	MWS	
Identity Management Enterprise Management		
Management Pack for Identity Management	MIM	
Other Infrastructure Management		
Configuration Management Pack for Applications	OCA	
Diagnostics Pack for Non-Oracle Middleware	ODM	
Management Connectors	OMC	
Oracle VM Management Pack	OVM	
Provisioning and Patch Automation Pack	OPP	
System Monitoring Plug-in for Hosts	OSH	
System Monitoring Plug-in for Network Devices	OSPN	
System Monitoring Plug-in for Non Oracle Databases	OSND	
System Monitoring Plug-in for Non Oracle Middleware	OSNM	
System Monitoring Plug-in for Storage	OSPS	
Service Management		
Service Level Management Pack	SLP	

Table 2: Shortcuts for Database Options and Management Packs (Continued)

Other – comes out of Measurement but is currently not listed in the Oracle Price list as of 01/2010. The reason for this is that the product is currently bundled into another product but was licensed separately in the past.		
Application Server Configuration Pack	ACP	
Configuration Management Pack for Non-Oracle Systems	OCN	
Configuration Management Pack for Oracle Middleware	OCM	
Linux Management Pack	OLM	
Provisioning Pack	PP	
Standalone Provisioning and Patch Automation Pack	OSP	