

Oracle Utilities Analytics

Installation Guide

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Oracle Utilities Analytics Installation Guide, Release 2.7.0

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Preface

Welcome to Oracle Utilities Analytics Installation Guide.

This guide provides information for those installing and configuring Oracle Utilities Analytics on Windows, Linux, and Solaris systems.

The preface includes the following:

- [Audience](#)
- [Pre-requisite Knowledge](#)
- [Related Documents](#)
- [Conventions](#)
- [Abbreviations](#)
- [Documentation Accessibility](#)
- [Documentation Roadmap](#)

Audience

This guide is intended for use by anyone who is responsible for installing or upgrading Oracle Utilities Analytics.

Pre-requisite Knowledge

Oracle Utilities Extractors and Schema and Oracle Utilities Analytics Dashboards make use of several technologies. It is assumed that you have a working knowledge of the following to configure and administer Oracle Utilities Analytics:

- Oracle Data Warehouse
<https://docs.oracle.com/database/121/DWHSG/toc.htm>
- Oracle Data Integrator
<https://docs.oracle.com/middleware/1221/cross/getstartedtasks.htm>
- Oracle GoldenGate
<http://docs.oracle.com/goldengate/c1221/gg-winux/index.html>
- Oracle GoldenGate Monitor
<https://docs.oracle.com/goldengate/m12212/gg-monitor/index.html>
- Oracle WebLogic Server
<http://docs.oracle.com/middleware/1221/wls/index.html>
- Oracle Business Intelligence Enterprise Edition
<http://docs.oracle.com/middleware/12211/bisuite/docs.htm>

Related Documents

The following documentation is included with this release.

Installation, Administration, and Release Notes

- *Oracle Utilities Analytics Release Notes*
- *Oracle Utilities Analytics Getting Started Guide*
- *Oracle Utilities Analytics License Information User Manual*
- *Oracle Utilities Analytics Installation Guide*
- *Oracle Utilities Analytics Quick Install Guide*
- *Oracle Utilities Analytics Administration Guide*
- *Oracle Utilities Analytics Developer's Guide*

Metric Reference Guides

- *Oracle Utilities Analytics Dashboards for Oracle Utilities Meter Data Analytics Metric Reference Guide*
- *Oracle Utilities Analytics Dashboards for Oracle Utilities Customer Analytics, Revenue Analytics and Credit & Collections Analytics Metric Reference Guide*
- *Oracle Utilities Analytics Dashboards for Oracle Utilities Exception Analytics Metric Reference Guide*
- *Oracle Utilities Analytics Dashboards for Oracle Utilities Mobile Workforce Analytics Metric Reference Guide*

- *Oracle Utilities Analytics Dashboards for Oracle Utilities Distribution Analytics and Outage Analytics Metric Reference Guide*
- *Oracle Utilities Analytics Dashboards for Oracle Utilities Work and Asset Analytics Metric Reference Guide*
- *Oracle Utilities Analytics Dashboards for Oracle Utilities Operational Device Analytics Metric Reference Guide*

Data Mapping Guides

- *Oracle Utilities Extractors and Schema for Oracle Utilities Customer Care and Billing Data Mapping Guide*
- *Oracle Utilities Extractors and Schema for Oracle Utilities Meter Data Management Data Mapping Guide*
- *Oracle Utilities Extractors and Schema for Oracle Utilities Mobile Workforce Management Data Mapping Guide*
- *Oracle Utilities Extractors and Schema for Oracle Utilities Network Management System Data Mapping Guide*
- *Oracle Utilities Extractors and Schema for Oracle Utilities Operational Device Management Data Mapping Guide*
- *Oracle Utilities Extractors and Schema for Oracle Utilities Work & Asset Management Data Mapping Guide*

You can view the latest documentation at http://docs.oracle.com/cd/E72219_01/documentation.html.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Abbreviations

The following table lists the commonly used acronyms and terms in this guide:

Convention	Meaning
APEX	Oracle Application Express
CDC	Changed Data Capture
ELT	Extraction, Loading and Transformation
ETL	Extraction, Transformation, and Loading
OBIEE	Oracle Business Intelligence Enterprise Edition
BI	Business Intelligence

Convention	Meaning
ODI	Oracle Data Integrator
OGG	Oracle GoldenGate
OUA	Oracle Utilities Analytics
WAM	Oracle Utilities Work and Asset Management
CC&B	Oracle Utilities Customer Care and Billing
MDM	Oracle Utilities Meter Data Management
MWM	Oracle Utilities Mobile Workforce Management
NMS	Oracle Utilities Network Management System
ODM	Oracle Utilities Operational Device Management
OSDC	Oracle Software Delivery Cloud

Documentation Accessibility

For information about configuring and using accessibility features for Oracle Utilities Analytics, see the documentation at http://docs.oracle.com/cd/E23943_01/bi.1111/e10544/appaccess.htm#BIEUG2756.

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/us/corporate/accessibility/index.html>.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For more information, visit: <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Documentation Roadmap

This guide is organized based on the typical flow you need to follow to install and configure Oracle Utilities Analytics. Use the following documentation roadmap to find the information that you need to install Oracle Utilities Analytics.

1. [Introduction](#)

This chapter includes a general description about Oracle Utilities Analytics and provides information about the installation types and components required to install or upgrade Oracle Utilities Analytics.

2. [Supported Platforms and Hardware Requirements](#)

This chapter shows each of the operating system/server combinations that Oracle Utilities Analytics is certified for.

3. [Planning the Installation](#)

This chapter describes the setup steps or pre-installation tasks that you must complete before you begin an Oracle Utilities Analytics installation or upgrade.

4. [Installing Oracle Utilities Analytics - Initial Installation](#)

This chapter provides the steps for a new Oracle Utilities Analytics installation. It includes procedures to install various components for Oracle Utilities Analytics to be functional.

5. [Installing Oracle Utilities Analytics v2.7.0.0.x Patchset Directly](#)

This chapter includes instructions that are applicable only while directly installing Oracle Utilities Analytics v2.7.0.0 Patchset 11 or higher.

6. [Upgrading Oracle Utilities Analytics from v2.6.0.0.2](#)

This chapter includes the steps to upgrade Oracle Utilities Analytics from v2.6.0.0.2 to v2.7.0.

7. [Upgrading Oracle Utilities Analytics from v2.5.0.0.5](#)

This chapter provides the instructions to upgrade Oracle Utilities Analytics from v2.5.0.0.5 to v2.7.0.

8. [Installing Demo Database](#)

This chapter provides instructions for installing the demonstration database.

9. [Configuring Spatial Data](#)

This chapter provides information about spatial data setup for the Oracle Business Intelligence Enterprise Edition dashboards in Oracle Utilities Analytics and how to set up the spatial data. It explains the steps to acquire, install import, and load the spatial data.

10. [Installing NMS BI Publisher Reports](#)

This chapter describes the steps to install the NMS IEEE outage reports in Oracle Utilities Analytics.

Chapter 1

Introduction

This chapter provides an overview of the Oracle Utilities Analytics v2.7.0.0 installation. It is a complete installation and does not need to install any of the previous versions.

Note: For information about configuring and administering Oracle Utilities Analytics (Oracle Utilities Analytics Dashboards and Oracle Utilities Extractors and Schema), refer to the *Oracle Utilities Analytics Administration Guide*.

A typical Oracle Utilities Analytics installation involves installing various components across different installation types. This chapter focuses on these details:

- [Installation Components](#)
- [Installation Types](#)
- [Media Pack Components](#)

Installation Components

The Oracle Utilities Analytics installation includes installing the following components. For a successful installation, it is required to install ALL of these components:

- Oracle Utilities Analytics Database - Contains star schemas and product metadata.
- Oracle Utilities Analytics ELT - Based on Oracle Data Integrator (ODI), it includes pre-built ODI objects necessary for ELT processes.

Note: Oracle GoldenGate (OGG) is used to capture the data and is required for ODI-based ELT.

- Oracle Utilities Analytics Administration - An Oracle Application Express (APEX) application used to maintain several Oracle Utilities Analytics configuration parameters.
- Oracle Utilities Analytics Dashboard - Includes the pre-built OBIEE Web Catalog, RPD file, and answers, based on OBIEE.

Note: Install this component on the server where OBIEE is installed. It also includes a demo database with pre-populated data used for training or demonstration purposes. Refer to the [Installing Demo Database](#) chapter for more information.

Refer to **Prerequisite Software** in the [Planning the Installation](#) chapter for information about the prerequisite software required to install each of the components.

Installation Types

The first step in the installation procedure is to determine the installation type that meets your business requirements. The possible installation types are as follows:

- [Initial Installation](#) - A base installation, typically used for a production environment.
- [Upgrade](#) - An upgrade installation from version 2.5.0.0.5 or 2.6.0.0.2 to version 2.7.0.
- [Demo Installation](#) - A base installation with pre-populated demo data, typically used for demonstration or training purposes.

The following sections describe these installation types in detail.

Initial Installation

This type is applicable for a new Oracle Utilities Analytics installation. For an initial installation, you must install all of the following components:

- Oracle Utilities Analytics Database
- Oracle Utilities Analytics ELT
- Oracle Utilities Analytics Administration
- Oracle Utilities Analytics Dashboard

Following is a high-level workflow of the installation process:

- **Step 1:** Install the database components in the order below:
 - Oracle Database 12.1.0.2.0
 - WebLogic 12.2.1.0.0
 - Oracle Data Integrator 12.2.1.0.0 with JavaEE
 - Oracle Utilities Analytics Database
 - Oracle Utilities Analytics Administration

- Oracle Utilities Analytics ODI-Based ELT
- **Step 2:** Install the dashboard components as below:
 - Oracle Client 12.1.0.2.0
 - OBIEE 12.2.1.0.0
 - Oracle Utilities Analytics Dashboard

Refer to the [Planning the Installation](#) chapter for information about the prerequisite software required to install each of the components. Refer to the [Installing Oracle Utilities Analytics - Initial Installation](#) chapter for the respective component installation steps.

Upgrade

This installation type is applicable while upgrading Oracle Utilities Analytics from the following versions:

- 2.5.0.0.5 to 2.7.0
- 2.6.0.0.2 to 2.7.0

For an upgrade, you must upgrade all of the following components:

- Oracle Utilities Analytics Database
- Oracle Utilities Analytics ELT
- Oracle Utilities Analytics Administration
- Oracle Utilities Analytics Dashboard

Following is a high-level workflow of the upgrade process:

- **Step 1:** Upgrade the database components in the order below:
 - Oracle Database 12.1.0.2.0
 - Oracle Utilities Analytics Database
 - Oracle Utilities Analytics Administration
 - Oracle Utilities Analytics ODI-Based ELT
- **Step 2:** Install/upgrade the dashboard components as below:
 - Oracle Client 12.1.0.2.0
 - OBIEE 12.2.1.0.0
 - Oracle Utilities Analytics Dashboard

Refer to the [Planning the Installation](#) chapter for information about the prerequisite software required to install each of the components.

If you are upgrading the product from version 2.6.0.0.2, refer to chapter [Upgrading Oracle Utilities Analytics from v2.6.0.0.2](#) for the steps involved in upgrading each of the required components.

If you are upgrading the product from version 2.5.0.0.5, refer to chapter [Upgrading Oracle Utilities Analytics from v2.5.0.0.5](#) for the steps involved in upgrading each of the required components.

Demo Installation

This installation type is applicable when installing a database component for Oracle Utilities Analytics Dashboards for demonstration or training purposes. For a demo installation, install the following components:

- Oracle Utilities Analytics Demo Database
- Oracle Utilities Analytics Dashboard

Following is a high-level workflow of the demo installation process:

- **Step 1:** Install the database components in the order below:
 - Oracle Database 12.1.0.2.0
 - Import demo data
- **Step 2:** Install the dashboard components as below:
 - Oracle Client 12.1.0.2.0
 - OBIEE 12.2.1.0.0
 - Oracle Utilities Analytics Dashboard

Refer to the [Planning the Installation](#) chapter for information about the prerequisite software required to install each of the components. Refer to the [Installing Demo Database](#) chapter for the respective component installation steps.

Media Pack Components

The Oracle Utilities Analytics Media Pack consists of the following packages:

Documentation Package

- Oracle Utilities Analytics Release Notes
- Oracle Utilities Analytics Quick Install Guide
- Oracle Utilities Analytics Installation Guide
- Oracle Utilities Analytics Administration Guide
- Oracle Utilities Analytics Developer's Guide
- Oracle Utilities Analytics License Information User Manual
- Oracle Utilities Analytics Dashboards for Customer Analytics, Revenue Analytics, and Credit & Collections Analytics Metric Reference Guide
- Oracle Utilities Analytics Dashboards for Exception Analytics Metric Reference Guide
- Oracle Utilities Analytics Dashboards for Mobile Workforce Analytics Metric Reference Guide
- Oracle Utilities Analytics Dashboards for Distribution Analytics and Outage Analytics
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- Oracle Utilities Extractors and Schema for Oracle Utilities Customer Care and Billing Data Mapping Guide
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- Oracle Utilities Extractors and Schema for Oracle Utilities Operational Device Management Data Mapping Guide
- Oracle Utilities Extractors and Schema for Oracle Utilities Work & Asset Management Data Mapping Guide

Installation Package

- Oracle Utilities Analytics v2.7.0 Dashboard Component Multiplatform
- Oracle Utilities Analytics v2.7.0 ELT Component Based on ODI Multiplatform
- Oracle Utilities Analytics v2.7.0 Oracle Database Multiplatform
- Oracle Utilities Analytics v2.7.0 Demo Data

Chapter 2

Supported Platforms and Hardware Requirements

This chapter provides an overview of the operating system/server combinations that Oracle Utilities Analytics is certified for. It includes:

- [Operating Systems and Application Servers](#)
- [Additional Notes on Supported Platforms](#)
- [Support for Software Patches and Upgrades](#)

Operating Systems and Application Servers

An Oracle Utilities Analytics installation is tested and supported on a wide variety of operating system, application server, and database server combinations. The following table provides the details of the minimum versions supported.

Browser	Operating System (Client)	Operating System (Server)	Chipset	Application Server	Oracle Business Intelligence Enterprise Edition (OBIEE)	Oracle Data Integrator (ODI)	JDK	Oracle Golden Gate	Oracle REST Data Service	Database
IE 11.x		Oracle Linux 6.5 (64-bit)	x86_64	WebLogic 12.2.1	12.2.1.0.0	12.2.1.0.0	1.8.0(77)+	12.2.0.1	3.0.6	Oracle 12.1.0.2.0
		Oracle Linux 7.x (64-bit)								
Firefox 45.0ESR + (OBIEE only)	Windows 10 (64-bit)	AIX 7.2 (64-bit)	POWER (64-bit)	WebLogic 12.2.1	12.2.1.0.0	12.2.1.0.0	1.8.0(77)+	12.2.0.1	3.0.6	Oracle 12.1.0.2.0
		Oracle Solaris 11 (64-bit)	SPARC	WebLogic 12.2.1	12.2.1.0.0	12.2.1.0.0	1.8.0(77)+	12.2.0.1	3.0.6	Oracle 12.1.0.2.0
		Windows Server 2012 R2 (64-bit)	x86_64	WebLogic 12.2.1	12.2.1.0.0	12.2.1.0.0	1.8.0(77)+	12.2.0.1	3.0.6	Oracle 12.1.0.2.0

Important: For the latest system requirements and supported platforms details, refer to the knowledge article “System Requirements and Supported Platforms for Oracle Utilities Analytics” available on My Oracle Support (<https://support.oracle.com/>).

Apply **patch 23629220** after installing ODI 12.2.1.0.0. This patch installation is a prerequisite to ODI based ELT component installation.

Note that it is possible to install multiple Fusion Middleware products (ODI, OBIEE, etc.) in the same Home. In this scenario, Fusion Middleware Infrastructure is installed only once, and the Home is reused while installing other Fusion Middleware products.

Additional Notes on Supported Platforms

Oracle Unbreakable Enterprise Kernel - This version of Oracle Utilities Analytics is supported on Oracle Unbreakable Enterprise Kernel.

Oracle VM Support - This version of Oracle Utilities Analytics is supported on Oracle VM Server for x86 3.3 for the supported releases of Oracle Linux and Microsoft Windows operating systems.

Oracle Support Policy on VMWare - Refer to My Oracle Support knowledge base article 249212.1 for Oracle’s support policy on VMWare (<https://support.oracle.com/>).

Support for Software Patches and Upgrades

Due to the ongoing nature of software improvement, vendors periodically issue patches and service packs for the operating systems, application servers, and database servers on top of specific versions that Oracle products have already been tested against.

If it is necessary to apply an upgrade, it is recommended to do so in a test environment that is running on the same platform as your production environment prior to updating the production environment itself.

Always contact Oracle Support prior to applying vendor updates that do not guarantee backward compatibility.

Chapter 3

Planning the Installation

This chapter provides information to plan an Oracle Utilities Analytics installation, including:

- [Pre-requisite Software](#)
- [Supported Source Application Versions](#)
- [Deployment](#)
- [Installation Checklist](#)

Pre-requisite Software

Before you install Oracle Utilities Analytics, you are required to install the prerequisite software.

Refer to the respective installation documentation of the software for download and installation instructions.

Note: Ensure that the same operating system user is used to install all software prerequisites and Oracle Utilities Analytics components.

The list of prerequisite software required to install Oracle Utilities Analytics is as below:

- [Pre-requisite Software for Oracle Utilities Analytics Database](#)
- [Pre-requisite Software for Oracle Utilities Analytics Installer](#)
- [Pre-requisite Software for Oracle Data Integrator Based ELT Component](#)
- [Pre-requisite Software for Oracle Utilities Analytics Administration](#)
- [Pre-requisite Software for Oracle Utilities Analytics Dashboards](#)

Pre-requisite Software for Oracle Utilities Analytics Database

The prerequisite software for the Oracle Utilities Analytics database component is as follows:

Oracle Database Server Enterprise Edition 12.1.0.2.0 - This Oracle Utilities Analytics release is supported on Oracle Database Server Standard Edition 12.1.0.1.0 when using ODI-based ELT component.

Pre-requisite Software for Oracle Utilities Analytics Installer

The prerequisite software for Oracle Utilities Analytics Installer is JDK 1.8.0(77)+.

Pre-requisite Software for Oracle Data Integrator Based ELT Component

The prerequisite software for ODI-based ELT component of Oracle Utilities Analytics is as follows:

- JDK 1.8.0 (77)+
- Oracle Database Server Enterprise Edition 12.1.0.2.0 or Oracle Database Server Standard Edition 12.1.0.1.0
- Oracle Fusion Middleware Infrastructure and Oracle Data Integrator 12.2.1.0.0.

Note: These components can be downloaded separately.

- Apply patch **23629220** after installing ODI 12.2.1.0.0.
- Oracle GoldenGate 12.2.0.1

Install Oracle GoldenGate on both source application as well target database servers. Download the latest version from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).

Oracle GoldenGate Monitor 12.2.1.0.0 on both source application as well as target database servers. Download the latest version from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).

- Oracle Utilities Analytics Administration

Pre-requisite Software for Oracle Utilities Analytics Administration

The prerequisite software for Oracle Utilities Analytics Administration component is as follows:

- Oracle Database Server Enterprise Edition 12.1.0.2.0 or Oracle Database Server Standard Edition 12.1.0.1.0
- Oracle Apex 5.0.4
- Oracle WebLogic 12.2.1.0.0

Pre-requisite Software for Oracle Utilities Analytics Dashboards

The prerequisite software for Oracle Utilities Analytics dashboard component is as follows:

- Oracle Fusion Middleware Infrastructure and Oracle Business Intelligence Enterprise Edition 12.2.1.0.0.

Note: Download Oracle Fusion Middleware Infrastructure and Oracle Business Intelligence Enterprise Edition 12.2.1.0.0 separately.

Install the Oracle 12.1.0.2.0 client if OBIEE is not installed on the database server. If it is installed, then there is no need to install Oracle client. For installation instructions see the [Installing Oracle Utilities Analytics Dashboards Component](#) section in chapter 4.

After installing OBIEE, save a snapshot of the last page of OBIEE installation that shows the details of BI Oracle Home, Instance Home, etc. These values are used during the Oracle Utilities Analytics installation.

Supported Source Application Versions

The following source application versions are supported in this Oracle Utilities Analytics release:

Source Application	Version
Oracle Utilities Customer Care and Billing	2.4.0.1+ 2.5.0.+ 2.6.0.0 2.7.0.0
Oracle Utilities Customer To Meter	2.7.0.0
Oracle Utilities Network Management System	2.3.0.0
Oracle Utilities Work and Asset Management	2.1.1.0+ 2.2.0.0 2.2.0.2
Oracle Utilities Meter Data Management	2.1.0.3+ 2.2.0.0+ 2.2.0.1 2.2.0.2 2.2.0.3
Oracle Utilities Mobile Workforce Management	2.2.0.3+ 2.3.0+
Oracle Real-Time Scheduler	2.2.0.3+ 2.3.0+

Source Application	Version
Oracle Utilities Operational Device Management	2.1.1.0+
	2.2.0.0
	2.2.0.2

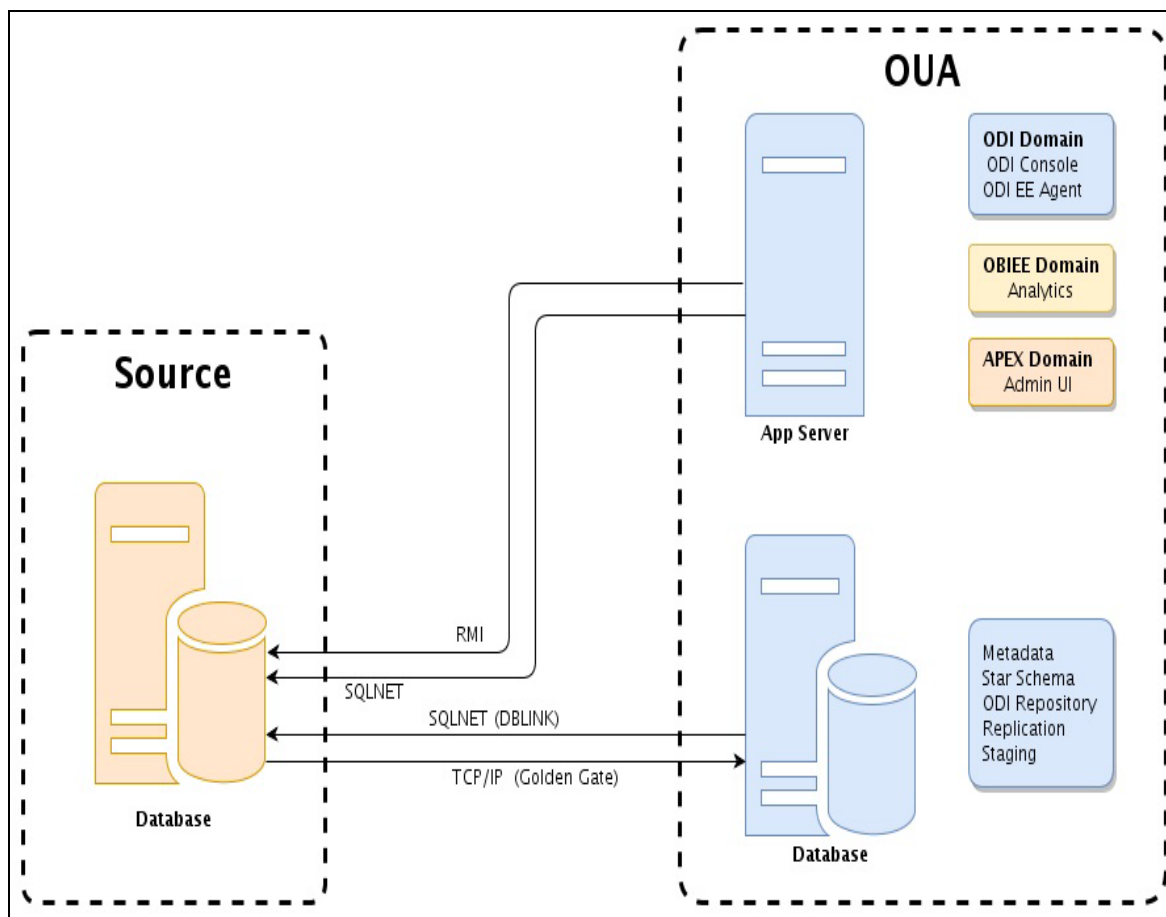
Note: For latest edge application version details, refer to the knowledge article “System Requirements and Supported Platforms for Oracle Utilities Analytics v2.7.0” available on My Oracle Support (<https://support.oracle.com/>).

Apply the database patch **17030189** on source application's database if the database version is not 12.1.0.2.0.

Deployment

A standard Oracle Utilities Analytics deployment consists of a database and an application server. ODI, OBIEE, and WebLogic installation for Oracle Utilities Analytics Administration are performed on the application server. Oracle GoldenGate is installed on both source, as well as target database servers.

The following figure shows a standard Oracle Utilities Analytics deployment.



Installation Checklist

The following checklist guides you through the Oracle Utilities Analytics installation process. The details for each step are provided in respective subsequent chapters.

-
1. Confirm that the recommended hardware is ready. Refer to [Supported Platforms and Hardware Requirements](#) for details.
 2. Install prerequisite software. Refer to the [Pre-requisite Software](#) for more details.
 3. Determine the installation type. Refer to [Installation Types](#) to determine the installation type for your scenario.
 4. Ensure that you have downloaded the Oracle Utilities Analytics v2.7.0 components.
 5. Perform the installation steps as applicable to the installation type.
 - Initial Installation - For initial installation, follow the instructions mentioned in the [Installing Oracle Utilities Analytics - Initial Installation](#) chapter.
 - Upgrade - To upgrade to v2.7.0, follow the instructions in [Upgrading Oracle Utilities Analytics from v2.6.0.0.2](#) and [Upgrading Oracle Utilities Analytics from v2.5.0.0.5](#) chapters for the respective version you are upgrading from.
 - Demo Installation - For instructions to proceed with demo installation, refer to the [Installing Demo Database](#) chapter.
 6. Configure Oracle Utilities Analytics.

Chapter 4

Installing Oracle Utilities Analytics - Initial Installation

This chapter provides instructions for a new Oracle Utilities Analytics installation. It includes:

- [Before You Install](#)
- [Installing Oracle Utilities Analytics Database](#)
- [Installing Oracle Data Integrator Based ELT Component](#)
- [Installing Oracle Utilities Analytics Administration Component](#)
- [Installing Oracle Utilities Analytics Dashboards Component](#)

Before You Install

Refer to My Oracle Support for up-to-date additional information about this Oracle Utilities Analytics release.

Installing Oracle Utilities Analytics Database

This section describes the steps to install Oracle Utilities Analytics Database on the database server, including:

- [Installing Prerequisite Software](#)
- [Copying and Decompressing Install Media](#)
- [Creating the Database](#)
- [Creating Users and Tablespaces](#)
- [Installing RELADM Schema](#)
- [Installing MDADM Schema](#)
- [Installing DWADM Schema](#)
- [Configuring Spatial Data](#)

Installing Prerequisite Software

The prerequisite software has to be installed before you begin the component installation. Refer to [Pre-requisite Software for Oracle Utilities Analytics Database](#) for details.

Copying and Decompressing Install Media

To copy and decompress install media, follow these steps:

1. Download Oracle Utilities Analytics v2.7.0 Oracle Database from the **Oracle Utilities Analytics v2.7.0 Oracle Database Multiplatform.zip** file.

Download the zip from Oracle Software Delivery Cloud ([https:// edelivery.oracle.com](https://edelivery.oracle.com)).

2. Create a temporary directory.

For example: c:\OUA\temp for a Windows machine or /OUA/temp for a Linux machine.

This directory (referred as <TEMPDIR> below) must be located outside any current working Oracle Utilities application environment. After successful installation, all files in this directory that are part of the installation can be deleted.

3. Unzip **Oracle Utilities Analytics V2.7.0 Oracle Database Multiplatform.zip** to <TEMPDIR> using any zip utility.
4. Unzip <TEMPDIR>/OUA-V2.7.0-Database-Multiplatform.zip using any zip utility.

The installation media is decompressed successfully. Proceed with creating the database.

Creating the Database

In an initial installation, it is recommended to use the Database Configuration Assistant (DBCA) utility to create the database.

Note: Refer to Oracle database documentation to know more about Database Configuration Assistant (DBCA).

Create the database with the following:

- Same character set as the source database character set
- Open cursor limit to 3000
- Processes to 1000

Creating Users and Tablespaces

To create the required users and tablespaces:

1. Create users in the database with the below names (without giving specific roles):
 - DWADM - Contains star schema objects (such as facts and dimensions) containing the data of the data warehouse.
 - DWUSER - User with read/write access to objects in DWADM schema.
 - DWREAD - User with read only access to objects in DWADM schema.
 - MDADM - A metadata schema consisting of database objects used for storing the Oracle Utilities Analytics metadata.
 - RELADM - A metadata schema consisting of database objects used to store the product version and component installation information.
 - OUA_MASTER - ODI Master repository schema
 - OUA_WORK - ODI Work repository schema
 - DWSTAGE - The staging schema of data warehouse.
2. Create roles with the following names:
 - DW_USER - Assigned to DWUSER. It contains all grants for read/write access to objects in the DWADM schema.
 - DW_READ - Assigned to DWREAD. It contains all grants for read only access to objects in the DWADM schema.
 - DW_PRIVS_ROLE - Assigned to MDADM. It contains the privileges necessary for the proper functioning of Oracle Utilities Analytics.
 - DW_REPLICATE - Assigned to various replication users that get created automatically during the source configuration. The privileges necessary for this role are automatically assigned by Oracle Utilities Analytics.
3. Connect to the database as **sys user**.

Execute **Usersgrants.sql** in `<TEMPDIR>/BI270/Scripts/Usersgrants.sql`. This SQL provides required grants to the users created in step 1.

The required users and tablespaces are created.

Installing RELADM Schema

The RELADM schema is a metadata schema consisting of database objects used to store the product version and component installation information.

This section describes initial installation of the RELADM schema, including:

- [Reviewing Storage.xml File](#)
- [Installation Procedure](#)
- [Generating Database Statistics](#)

Reviewing Storage.xml File

The storage.xml file (included in the package and is in <TEMPDIR>/BI270/RELADM/Install-Upgrade) allocates all the base tables and indexes to the default tablespace CISTS_01.

If few tables or indexes outside of the default tablespace need to be allocated, it should be reflected in the storage.xml file by changing the tablespace name from the default value to a custom value.

Note: If the database does not have CISTS_01 tablespace or RELADM user does not have quota on CISTS_01 tablespace, edit the Storage.xml file to indicate the correct tablespace name on which RELADM has quota.

Installation Procedure

To install the RELADM schema:

Note: This procedure prompts you for the password of RELADM user. Ensure that OraDBI.jar (in the step below) is run using JDK Version 8.0.

Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

In Windows:

1. Add Java 8 to the path variable. For example:

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
set CLASSPATH=<TEMPDIR>\BI270\RELADM\Jarfiles\*
```

3. Navigate to <TEMPDIR>\BI270\RELADM\Install-Upgrade folder.

4. Execute OraDBI.jar.

```
java com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/
<ORACLE SERVICE NAME>,RELADM,<Password of RELADM user>,,,,RELADM -
j
<JDK Home> -f <TEMPDIR>\BI270\RELADM\Jarfiles -v 1 -e true
```

In Unix:

1. Add Java 8 to the path variable. For example:

```
export PATH=/scratch/softwarewares/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/BI270/RELADM/Jarfiles/*
```

3. Navigate to <TEMPDIR>/BI270/RELADM/Install-Upgrade folder.

4. Execute OraDBI.jar.

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/<ORACLE
SERVICE NAME>,\
RELADM,<Password of RELADM user>,,,,RELADM \
-j <JDK Home> -f <TEMPDIR>/BI270/RELADM/Jarfiles -v 1 -e true
```

The utility creates the RELADM schema and system data definitions. If an error occurs while executing a SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects.

Connect to the database as **sys user** and execute the following command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('RELADM');
```

Installing MDADM Schema

The MDADM schema is a metadata schema that consists of the database objects used for storing the Oracle Utilities Analytics metadata.

For example: ETL job execution status, target tables for ETL, Oracle GoldenGate configuration details, etc.

This section describes initial installation of the MDADM schema, including:

- [Reviewing Storage.xml](#)
- [Installation Procedure](#)
- [Generating Database Statistics](#)

Reviewing Storage.xml

The storage.xml file (included in the package located at `<TEMPDIR>/BI270/MDADM/Install-Upgrade`) allocates all the base tables and indexes to the default tablespace CISTS_01.

If few tables or indexes outside of the default tablespace need to be allocated, it should be reflected in the storage.xml file by changing the tablespace name from the default value to a custom value.

Note: If the database does not have CISTS_01 tablespace or MDADM user does not have quota on CISTS_01 tablespace, edit Storage.xml to indicate the correct tablespace name on which MDADM has quota.

Installation Procedure

To install the MDADM schema, follow these steps for Unix and Windows respectively:

Note: This procedure prompts you for the password of MDADM user. Ensure that OraDBI.jar (in the step below) is run using JDK Version 8.0.

Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

In Windows:

1. Add Java 8 to the path variable. For example:


```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```
2. Set classpath pointing to OraDBI.jar and all dependency jars.


```
set CLASSPATH=<TEMPDIR>\BI270\MDADM\Jarfiles\*
```
3. Navigate to the `<TEMPDIR>\BI270\MDADM\Install-Upgrade` folder.
4. Execute OraDBI.jar.

```
java com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/
<ORACLE SERVICE NAME>,MDADM,<Password of MDADM user>,,,,,MDADM -j
<JDK Home> -f <TEMPDIR>\BI270\MDADM\Jarfiles -v 1 -e true
```

In Unix:

1. Add Java 8 to the path variable. For example:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/BI270/MDADM/Jarfiles/*
```

3. Navigate to the <TEMPDIR>/BI270/MDADM/Install-Upgrade folder.

4. Execute OraDBI.jar.

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE_SERVER>:<DATABASE_PORT>/<ORACLE
SERVICE_NAME>, \
MDADM,<Password of MDADM user>,,,,,MDADM \
-j <JDK Home> -f <TEMPDIR>/BI270/MDADM/Jarfiles -v 1 -e true
```

The utility creates the MDADM schema and system data definitions. If an error occurs while executing a SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects:

Connect to the database as **sys user** and execute the following command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('MDADM');
```

Installing DWADM Schema

The DWADM schema contains star schema objects (such as facts and dimensions) that contain the data of the data warehouse.

This section describes initial installation of the DWADM schema, including:

- [Reviewing Storage.xml](#)
- [Installation Procedure](#)
- [Generating Database Statistics](#)

Reviewing Storage.xml

The storage.xml file (included in the package located at <TEMPDIR>/BI270/DWADM/Install-Upgrade) allocates all the base tables and indexes to the default tablespace CISTS_01.

If few tables or indexes outside of the default tablespace need to be allocated, it should be reflected in the storage.xml file by changing the tablespace name from the default value to a custom value.

Note: If the database does not have CISTS_01 tablespace or DWADM user does not have quota on CISTS_01 tablespace, edit Storage.xml to indicate the correct tablespace name on which DWADM has quota.

Installation Procedure

To install the DWADM schema, follow these steps in Unix and Windows respectively:

Note: This procedure prompts you for the password of DWADM user. Ensure that OraDBI.jar (in the step below) is run using JDK Version 8.0.

Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

In Windows:

1. Add Java 8 to the path variable. For example:

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```
2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
set CLASSPATH=<TEMPDIR>\BI270\DWADM\Jarfiles\*
```
3. Navigate to the <TEMPDIR>\BI270\DWADM\Install-Upgrade folder.
4. Execute OraDBI.jar.

```
java com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/
<ORACLE SERVICE NAME>,DWADM,<Password of DWADM
user>,DWUSER,DWREAD,DW_USER,DW_READ,DWADM -j
<JDK Home> -f <TEMPDIR>\BI270\DWADM\Jarfiles -v 1 -e true
```

In Unix:

1. Add Java 8 to the path variable. For example:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```
2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/BI270/DWADM/Jarfiles/*
```
3. Navigate to the <TEMPDIR>/BI270/DWADM/Install-Upgrade folder.
4. Run OraDBI.jar.

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/<ORACLE
SERVICE NAME>,\
DWADM,<Password of DWADM user>,DWUSER,DWREAD,DW_USER,DW_READ,DWADM
\
-j <JDK Home> -f <TEMPDIR>/BI270/DWADM/Jarfiles -v 1 -e true
```

The utility creates the DWADM schema and system data definitions. If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects:

Connect to the data as **sys user** and execute the following command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('DWADM');
```

Configuring Spatial Data

Refer to [Chapter 9: Configuring Spatial Data](#) for details about spatial configuration.

Installing Oracle Data Integrator Based ELT Component

This section describes the installation procedure of Oracle Data Integrator based ELT component. It includes:

- [Installing Prerequisite Software](#)
- [Setting up Oracle GoldenGate](#)
- [Copying and Decompressing Install Media](#)
- [Starting the Installer](#)
- [Installation Steps](#)
- [Creating a Database Directory](#)
- [Creating WebLogic Domain for Oracle Data Integrator Agent](#)
- [Starting the WebLogic Admin Server](#)
- [Starting the Managed Server \(ODI_server1\)](#)

Installing Prerequisite Software

The Oracle Data Integrator based ELT component is installed on the Oracle Utilities Analytics application server. Refer to [Deployment](#) for information about deploying Oracle Utilities Analytics.

To proceed with installing the ELT component, ensure the following are taken care:

- The operating system user that is used to install all the related software is used to install the ELT component also.
- Set up the source applications with required configurations before proceeding with the ELT component installation. This enables to successfully extract data from them into Oracle Utilities Analytics.
- Verify that the prerequisite software mentioned in [Pre-requisite Software for Oracle Data Integrator Based ELT Component](#) are installed.
- While installing Oracle Data Integrator 12.2.1, select **Enterprise Installation** as the installation type.
- While running RCU for Oracle Data Integrator 12.2.1, on the **Select Components** page, uncheck the **Oracle Data Integrator** check box.

Setting up Oracle GoldenGate

This section describes setting up Oracle GoldenGate to work with Oracle Utilities Analytics.

- [Setting up Oracle GoldenGate on Source Database Server](#)
- [Setting up Oracle GoldenGate on Target Database Server](#)
- [Setting up Oracle GoldenGate Monitor JAgent on Target and Source Database Servers](#)
- [Recommended Oracle GoldenGate Parameter Settings](#)

Setting up Oracle GoldenGate on Source Database Server

To set up each source instance, follow these steps:

1. Create a directory on the source database server and install Oracle GoldenGate there. It will be Oracle GoldenGate home (OGG_Home) on the source database server.

For example: `<path>/GoldenGate Home`

Note: Make a note of this directory path; it is used in the Oracle Utilities Analytics installation.

2. Install Oracle GoldenGate.

Download Oracle GoldenGate 12.2.0.1.0 from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).

For installation instructions, refer to the respective installation documentation at <http://docs.oracle.com/goldengate/c1221/gg-winux/index.html>.

3. Provide the Oracle GoldenGate Home location as the directory location created in step 1.
4. Open a command terminal/window and set the source ORACLE_SID and ORACLE_HOME variables.
5. Set LD_LIBRARY_PATH as follows:

In Unix:

```
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
```

In Windows:

```
set LD_LIBRARY_PATH=%ORACLE_HOME%\lib;%LD_LIBRARY_PATH%
```

6. In the Command window, change the directory to Oracle GoldenGate Home directory, and then execute the command below:

In Unix:

```
./ggsci
```

In Windows:

```
ggsci
```

The Oracle GoldenGate prompt is shown.

7. At the Oracle GoldenGate prompt, execute the following commands in the order they are listed:
 - create SUBDIRS
 - start mgr

This command starts the Oracle GoldenGate manager process.

- info all

This command verifies if the manager process is running.

- exit

This command exits Oracle GoldenGate.

8. Ensure that the source database is in the **archivelog** mode.
9. Connect to the source database as the **sys user** and execute the statements shown below:


```
alter database add supplemental log data (primary key) columns;
alter system set enable_goldengate_replication=TRUE scope=both;
```
10. In the Command window, navigate to the Oracle GoldenGate Home (OGG_Home) directory.

- Open the **GLOBALS** file in the directory and add the following command:

```
EnableMonitoring
```

- Navigate to the Oracle GoldenGate home (OGG_Home) directory.
- Connect to the database as **sys user** using SQL*Plus.

Ensure OGG_Home to be the current directory while invoking SQL*Plus.

- Create a new user.

For example: ODM01SRC

This user is the Oracle GoldenGate owner. Ensure to assign a tablespace to this user that is not assigned to any other user.

Note: Ensure to note down the GoldenGate Owner Username; it will be used in the Oracle Utilities Analytics installation.

- Connect to the source database with **sys user**.
- Execute the following commands:

Note: Ensure to modify the GoldenGate owner placeholder with actual name of the database user created in step 14.

```
grant CREATE SESSION,CONNECT,RESOURCE,ALTER SYSTEM to <GoldenGate
Owner>;
grant unlimited tablespace to <GoldenGate owner> with admin
option;
EXECUTE dbms_goldengate_auth.grant_admin_privilege('<GoldenGate
Owner>', 'capture');
grant unlimited tablespace to <GoldenGate Owner> with admin
option;
Revoke dba from <GoldenGate Owner>;
grant create any view to <GoldenGate Owner>;
grant select any dictionary to <GoldenGate Owner>;
GRANT CREATE ANY DIRECTORY TO <GoldenGate Owner>;
GRANT DROP ANY DIRECTORY TO <GoldenGate Owner>;
GRANT EXP_FULL_DATABASE TO <GoldenGate Owner>;
GRANT IMP_FULL_DATABASE TO <GoldenGate Owner>;
```

- Connect to the <source application>ADM schema (such as CISADM). Execute the following commands:

For **Oracle Utilities Customer Care and Billing** source database, execute the following grants:

```
Grant select on F1_MST_CONFIG to <GoldenGate owner user created in
step 16>
Grant select on F1_EXT_LOOKUP_VAL to <GoldenGate owner user created
in step 16>
Grant select on F1_BKT_CONFIG to <GoldenGate owner user created in
step 16>
Grant select on F1_BKT_CONFIG_VAL to <GoldenGate owner user created
in step 16>
```

For **Oracle Utilities Operational Device Management** source database, execute the following grants:

```
Grant select on F1_MST_CONFIG to <GoldenGate owner user created in
step 16>
Grant select on F1_EXT_LOOKUP_VAL to <GoldenGate owner user created
in step 16>
```

For **Oracle Utilities Meter Data Management** source database, execute the following grants:

```
Grant select on <application ADM Schema>.F1_MST_CONFIG to
<GoldenGate Owner>;
Grant select on <application ADM Schema>.F1_EXT_LOOKUP_VAL to
<GoldenGate Owner>;
```

For **Oracle Utilities Work and Asset Management** source database, execute the following grants:

```
Grant select on <application ADM Schema>. F1_EXT_LOOKUP_VAL to
<GoldenGate Owner>;
Grant select on <application ADM Schema>.F1_MST_CONFIG to
<GoldenGate Owner>;
Grant select on <application ADM Schema>. F1_BKT_CONFIG to
<GoldenGate Owner>;
Grant select on <application ADM Schema>. F1_BKT_CONFIG_VAL to
<GoldenGate Owner>;
```

Note: While executing SQL commands in steps 15, 16, and 17, provide the GoldenGate owner user (if prompted for).

All the scripts mentioned below are located in GoldenGate Home directory and must be executed after connecting to the database as **sys user**.

18. Execute the following commands in the order listed below:

```
@marker_setup.sql
@ddl_setup.sql
@role_setup.sql
```

19. Exit SQL*Plus.
20. In the Command window, create a directory “diroby” in the OGG_Home directory.
21. Change directory to the Oracle GoldenGate Home directory, and execute the following:
 - a. Steps in [Configuring Encrypting Data Using ENCKEYS Method](#).
 - b. Steps in [Generating Shared Secret Password](#).

Note: Execute these steps before running the Oracle Utilities Analytics installer. See <http://docs.oracle.com/goldengate/c1221/gg-winux/index.html> for more details.

Configuring Encrypting Data Using ENCKEYS Method

To configure for encrypting data with the ENCKEYS method, do the following:

1. Execute the following command:

```
cd <OGG_HOME>
keygen <encryption key length (in bits)> [number of keys to
generate]
```

The key value has to be copied to ENCKEYS file against a logical name.

2. For each key value generated above, provide a logical name (Logical name should not be the same for two different key values). Enter the logical name space and then key value in the ENCKEYS file.
3. Repeat the step above for each key values generated.

4. Save the file with name 'ENCKEYS' (upper case only) without any extension.

Example:

```
cd $OGG_HOME
./keygen 128 1
0x8CE55035DD6893205A7BD6773FA8E670
```

5. Open a new ASCII ENCKEYS file if it does not exist for adding a new entry or open an existing ENCKEYS text file to append.
6. Input the Logical name, space and key value generated.

Sample content of the ENCKEYS file:

```
CCB1KEY 0x8CE55035DD6893205A7BD6773FA8E670
```

7. The source ENCKEYS file entry has to be appended to the intermediate server or target server which would be configured with the source system where target OGG is being configured.

Note: It is recommended to provide a logical key name after <context_code>KEY.

For example: If context code is CCB1, it is recommended to name it as CCB1KEY.

Generating Shared Secret Password

To generate the shared secret password, follow these steps:

1. Execute the following command:

```
cd <OGG_HOME>
ggsci
ENCRYPT PASSWORD <GG Owner password> <algorithm> ENCRYPTKEY
<key_name>
```

Example:

```
cd $OGG_HOME
./ggsci
GGSCI (hostname) 1> ENCRYPT PASSWORD CCB01SRC AES128 ENCRYPTKEY
CCB1KEY
Encrypted password:
AADAIAVGNHBF LGFCHBTCVBFJFHUEJGNCFAOAFEOFBALELISFOEIFWGRB
ZHCCMCYGYBDAZH
Algorithm used: AES128
```

2. Note the above generated ENCKEYS file logical name/key value, algorithm name used, and the generated encrypted password.

Setting up Oracle GoldenGate on Target Database Server

To set up Oracle GoldenGate on the target database server, follow these steps:

1. Create a directory on the target database server.

For example: ../GoldenGateHome

Oracle GoldenGate should be installed in this directory. It is **Oracle GoldenGate home (OGG_Home)** on the target Oracle Utilities Analytics database server.

Note: Ensure to note down the directory location; it will be used in the Oracle Utilities Analytics installation.

2. Install Oracle GoldenGate and provide the GoldenGate Home location as the directory location created in the step 1.
3. In the Command window, set the target ORACLE_SID and ORACLE_HOME variables. Set LD_LIBRARY_PATH using the following commands:

In Unix:

```
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
```

For Windows:

```
set LD_LIBRARY_PATH=%ORACLE_HOME%/lib;%LD_LIBRARY_PATH%
```

4. In the Command window, change the directory to **GoldenGate Home** and execute the following command:

For Unix:

```
./ggsci
```

For Windows:

```
ggsci
```

The Oracle GoldenGate prompt is shown.

5. At the prompt, execute the following commands:

```
create SUBDIRS
start mgr
info all
exit
```

6. Create a directory “diroby” in the OGG_Home directory.
7. Connect to the target database as **sys user** and execute the command below:

```
alter system set enable_goldengate_replication=TRUE scope=both;
```
8. In the Command window, navigate to the Oracle GoldenGate Home (OGG_Home) directory.
9. Edit the GLOBALS file in the <GG home> directory and add the following command.:

```
EnableMonitoring
```
10. Navigate to the Oracle GoldenGate home (OGG_Home) directory.
11. If the ENCKEYS file does not exist, follow these steps:
 - a. Create and open a new ASCII ENCKEYS file.
 - b. Add the key value/values that are generated on the sources to the ENCKEYS file in target OGG home. This is done for the context codes for which source is configured.

A sample ENCKEYS file in target OGG home is as below:

```
CCB1KEY 0x8CE55035DD6893205A7BD6773FA8E670
```

Setting up Oracle GoldenGate Monitor JAgent on Target and Source Database Servers

Set up Oracle GoldenGate Monitor (OGG) JAgent on Oracle Utilities Analytics GoldenGate server and on all the source application GoldenGate servers. The OGG Monitor JAgent is used to automatically copy the generated OGG scripts to both source and target GoldenGate Home directories, and to start the extract and replicate processes on source and target.

To setup OGG Monitor JAgent on both target and source database servers, follow these steps:

1. Ensure Oracle GoldenGate is installed and Manager is running.
2. Start the rmiregistry services using the following command:

```
rmiregistry 5559 &
```

Ensure to note down the port on which RMI server is started. The port number specified here is 5559. If it is not specified, the default port 1099 will be used.

3. Install Fusion Middleware Infrastructure.
4. Run the OGG Monitor 12.2.1 installer.
 - a. Set Oracle Home to the location where Fusion Middleware Infrastructure was installed in step 2.
 - b. Choose installation type as OGG Monitor Agent.
5. Edit the Config.properties file in the <OGG Monitor home>/oggmon/ogg_agent/cfg_templates and add/modify the below parameters.

```
<ACTUAL>      : jagent.host=localhost
```

```
<CHANGE TO>  : jagent.host=<<actual hostname on which OGG is
installed>>
```

```
<ACTUAL>      : monitor.jmx.username=cmroot
```

```
<CHANGE TO>  : monitor.jmx.username=jmx_src
```

```
<ACTUAL>      : jagent.username=root
```

```
<CHANGE TO>  : jagent.username=<<OGG software installed OS user>>
```

```
<ACTUAL>      : jagent.rmi.port=5559
```

```
<CHANGE TO>  : jagent.rmi.port=5557 or any free port other than the
one on which the rmiregistry is started
```

```
<ACTUAL>      : agent.type.enabled=OGGMON
```

```
<CHANGE TO>  : agent.type.enabled=OEM
```

```
<ACTUAL>      : jagent.backward.compatibility=true
```

```
<CHANGE TO>  : jagent.backward.compatibility=false
```

6. Add the following parameter:

```
jagent.ssl=false
```

7. Navigate to <OGG Monitor home>/oggmon/ogg_agent directory and run the below command:

In Unix:

```
export JAVA_HOME=<JDK home>
```

```
./createMonitorAgentInstance.sh
```

In Windows:

```
set JAVA_HOME=<JDK home>
```

```
./createMonitorAgentInstance.bat
```

- a. You will be prompted to enter:

- Oracle GoldenGate home directory
- Path to be used for Oracle GoldenGate Monitor Agent instance.

It is recommended to provide a path (such as <OGG Monitor home>/Agents/OGGMonitorInstance).

- A unique name to replace the timestamp in the name of the file used to start GG Monitor agent instance.

Provide a unique name to be used for this Oracle GoldenGate Monitor instance.

- Execute the command below from <path used for Oracle GoldenGate Monitor instance provided in the step above>/bin.

Example location: <OGG Monitor home>/Agents/OGGMonitorInstance/bin

In Unix:

```
export JAVA_HOME=<JDK home>
./pw_agent_util.sh -jagentonly
```

In Windows:

```
set JAVA_HOME=<JDK home>
pw_agent_util.bat -jagentonly
```

- Enter the Oracle wallet password.

This password has to be entered as the password for the JAGENT while running the installer (for target gg), and while running the source configuration (for source gg).

Ensure to note the password and jagent.rmi.port value (JAgent Port). This information is required in subsequent installation.

- Create a folder with the Context_code name in <GG Home>/dirdat.

For example: If WAM2 is created for the WAM source, then create a folder with name “WAM2” within the <GG Home>/dirdat/ folder.

- Create a folder with name <GG Home>/diroby.
- Navigate to <GG Home>/dirprm and edit jagent.prm file.

Replace COMMAND java with COMMAND <JDK Home>/bin/java.

This ensures that the correct version of java (1.8) is used while starting JAgent.

- Navigate to OGG_Home directory and go to the GoldenGate prompt:

```
ggsci
```

- Start the jAgent process using the following command:

```
start jagent
```

The logs for JAgent are created at the following (example) location.

```
<OGG Monitor home>/Agents/OGGMonitorInstance/logs
```

Recommended Oracle GoldenGate Parameter Settings

The recommended Oracle GoldenGate parameter settings are as follows:

- Update the source <Source GG Home>/dirprm/mgr.prm file as follows:

```
AUTORESTART EXTRACT <Context Code>*, RETRIES 5, WAITMINUTES 2,
RESETMINUTES
60
```

```
PURGEOLDEXTRACTS dirdat/<Context Code>/*, USECHECKPOINTS,
MINKEEPHOURS 4
DOWNCRITICAL
```

- Update the Target <Target GG Home>/dirprm/mgr.prm file with the following:

```
AUTORESTART REPLICAT <Context Code>*, RETRIES 5, WAITMINUTES 2,
RESETMINUTES
60
PURGEOLDEXTRACTS dirdat/<Context Code>/*, USECHECKPOINTS,
MINKEEPHOURS 4
DOWNCRITICAL
```

- Restart the mgr process after the changes mentioned above are complete.

The following parameters are optional and depend on the level of alerts required for the environment.

For Oracle Utilities Network Management System sources:

- DOWNREPORTMINUTES 2 - Report any downtime more that 2 minutes
- LAGCRITICALMINUTES 2 - Report any lag > 2 minutes as critical
- LAGINFOSECONDS 30 - Report any lag > 30 seconds as warning
- LAGREPORTMINUTES 1 - Log lag information every minute

For other sources:

- DOWNREPORTMINUTES 10 - Report any downtime more that 10 minutes
- LAGCRITICALMINUTES 10 - Report any lag > 10 minutes as critical
- LAGINFOMINUTES 5 - Report any lag > 5 seconds as warning
- LAGREPORTMINUTES 5 - Log lag information every 5 minutes

Copying and Decompressing Install Media

To download and decompress the install media, perform these steps:

- Download the Oracle Utilities Analytics version 2.7.0 Multiplatform part (**Oracle Utilities Analytics V2.7.0 Multiplatform.zip**) from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).
- Create a temporary directory, such as c:\OUA\temp or /OUA/temp (referred to <TEMPDIR> below). This directory must be located outside any current working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.
- Unzip **Oracle Utilities Analytics V2.7.0 Multiplatform.zip** to <TEMPDIR>.

Starting the Installer

For an AIX Operating System, set the following environment variable before starting the Oracle Utilities Analytics installation:

```
export IBM_JAVA_OPTIONS="-Xmx2g -XX:PermSize=64m -
XX:MaxPermSize=3200m
```

To start the Oracle Data Integrator Based ELT component, follow these steps:

- Go to the temporary folder containing the installer.

2. Run the following command from this folder:

```
java -jar <TEMPDIR>/OUA_2.7.0.0.0_generic.jar -logLevel finest
```

Note: The minimum JDK required for running the Oracle Utilities Analytics installer is JDK 1.8.

The **Welcome** page appears.

3. Review this information before you begin the installation. Click **Next** to continue with the installation.
4. Complete the tasks on the navigation pane.

Each item in the navigation pane represents a specific installer screen that prompts you for information required to install the software.

- If you select **Oracle Data Integrator Based ETL** as an **Installation Type**, define the following:
 - Database and Java Home Details
 - Target Database Connection Details
 - Oracle Data Integrator Home and Schema Details
 - Oracle Data Integrator Agent and Repository Details
 - Target GoldenGate Details
 - Target JAgent Details
- If you select **Dashboard** as an **Installation Type**, define the following:
 - Database and Java Home Details
 - Target Database Connection Details
 - OBIEE Home Details
- If you select both **Oracle Data Integrator Based ETL** and **Dashboard** as an **Installation Type**, define the following:
 - Database and Java Home Details
 - Target Database Connection Details
 - Oracle Data Integrator Home and Schema Details
 - Oracle Data Integrator Agent and Repository Details
 - Target GoldenGate Details
 - Target JAgent Details
 - OBIEE Home Details

Installation Steps

To install Oracle Data Integrator Based ETL, perform the following steps:

1. Run the Oracle Utilities Analytics Installer. The **Welcome** page appears.
2. Review the information before you begin the installation. Click **Next** to continue with the installation.

The **Installation Location** page appears.

- Define the **Installation Location** and click **Next**.

Note: The specified Oracle home directory must be an empty directory.

The **Select Installation Type** page appears.

- In the **Select Installation Type** page, select **ODI Based ETL** and click **Next**.

Note: Based on the selected installation type, the options on the left navigation panel change.

- Select **Oracle Data Integrator Based ETL** as an **Installation Type**. Define the following:

- Database and Java Home Details
- Target Database Connection Details
- Oracle Data Integrator Home and Schema Details
- Oracle Data Integrator Agent and Repository Details
- Target GoldenGate Details

- On the **Database and Java Home Details** page, enter the following details in the respective fields and click **Next**.

Field Name	Description	Value
Database Client Home	Database client home location	Example: /u01/app/product/12.1.0/ dbhome_1
Java Home	JDK home location	Provide location of JDK 1.8 Example: /u01/jdk_1.8.0_77

- On the **Target Database Connection Details** page, enter the following details in the respective fields and click **Next**.

Field Name	Description	Value
Host	Host name of the server where the database resides	Oracle Utilities Analytics Database Server
Port	Database port number on the database server used for connecting to the database	Oracle Utilities Analytics Database Port. The default value is 1521.
Service Name	Service name for the database	
Target Schema Password	Password for the target schema (DWADM)	
Confirm Target Schema Password	Confirm password for the target schema (DWADM)	
Metadata Schema Password	Password for the metadata schema (MDADM)	
Confirm Metadata Schema Password	Confirm password for the metadata (MDADM) schema	

8. On **ODI Home and Schema Details** page, enter the following details in the respective fields. Click **Next**.

Field Name	Description	Value
ODI Home	Directory where Oracle Data Integrator (ODI) is installed	Example: /u01/Middleware/Oracle_ODI1
Supervisor User	Name of the Oracle Data Integrator Supervisor	SUPERVISOR
Supervisor Password	Password of the Oracle Data Integrator Supervisor	SUPERVISOR user password
Confirm Supervisor Password	Confirm password of the Supervisor	
Master Repository Schema Name	Oracle Data Integrator master repository schema name	OUA_MASTER
Master Repository Schema Password	Password of the master repository schema	OUA_MASTER user's password
Confirm Master Repository Schema Password	Confirm password of the Oracle Data Integrator master repository schema	
Work Repository Schema Name	Oracle Data Integrator work repository schema name	OUA_WORK
Work Repository Schema Password	Work repository schema password	OUA_WORK user's password
Confirm Work Repository Schema Password	Confirm password of Oracle Data Integrator work repository schema	

9. On the **ODI Agent and Details** page, enter the following details in the respective fields. Click **Next**.

Field Name	Description	Value
ODI Agent Host	Host where Oracle Data Integrator WebLogic Domain is created	Oracle Data Integrator Server host name.
ODI Agent Port	Port on which Oracle Data Integrator WebLogic agent is configured to run. This is the Oracle Data Integrator WebLogic Managed Server port.	Provide available port and ensure to use the same port while creating Oracle Data Integrator managed server.

10. On the **Target GoldenGate Details** page, enter the following details in the respective fields. Click **Next**.

Field Name	Description	Value
GoldenGate Host	Oracle GoldenGate Manager host	
GoldenGate Home	Location where Oracle GoldenGate is installed	Example: /opt/local/ggs_12.2.0.1.1
Target Database Home	Location where database home is installed on the target database server. If GoldenGate for target is not installed on the Oracle Utilities Analytics database server, provide oracle client home location on the server on which GoldenGate is installed.	Example: /u00/oracle/app/oracle/product/12.1.0/dbhome_1
GoldenGate Manager Port	The port number on which Oracle GoldenGate Manager is running on the GoldenGate host.	The default value is 7830.
GoldenGate Algorithm	The algorithm configured in Oracle GoldenGate on the target database server.	The default value is BLOWFISH.
GoldenGate Encryptkey	The Encrypt Key configured in Oracle GoldenGate on the target database server.	The default value is "DEFAULT".
GoldenGate Shared Secret	Shared secret key configured in Oracle GoldenGate on the target database server.	Go to the Oracle GoldenGate prompt and run the command: <i>encrypt password <password of MDADM user>, encryptkey DEFAULT</i> Provide the result of above command as the value.

11. On the **Target JAgent Details** page, enter the target server JAgent details in the respective fields. Click **Next**.

Field Name	Description	Value
JAgent Host	Oracle GoldenGate Monitor JAgent host	
JAgent GoldenGate	Oracle GoldenGate installed location where GoldenGate Monitor JAgent is running	Example: /opt/local/ggs_12.2.0.1.1

Field Name	Description	Value
JAgent Port	Use the JAgent RMI port (5557) defined in the config properties file	
JAgent User	OS user used to configure JAgent	
JAgent Wallet Password	JAgent Wallet password	
Confirm JAgent Wallet Password	Re enter JAgent Wallet password to confirm	

12. On the **Installation Summary** page, verify the installation options selected.

13. Click **Install** to begin the installation.

To change any configurations before starting the installation, use the navigation pane and select the topic to edit.

The **Installation Progress** page appears displaying the progress of the installation. Operations being performed as a part of the installation are logged to the terminal from which the installer was run. The detailed logs of the installation are also available in the logs/system directory under the installation location.

To quit before the installation is complete, click **Cancel**. Doing so will result in a partial installation; the portion of the software that was installed on your system before you click **Cancel** will remain on your system, and you will have to remove it manually.

14. On the **Installation Completed** page, click **Finish** to close the installer.

The Oracle Data Integrator based ETL is now installed.

Note: To configure source, refer to the **Chapter 5: Configuring Oracle Utilities Analytics** in *Oracle Utilities Analytics Administration Guide*.

Creating a Database Directory

Create a database directory 'B1_DATA_DUMP_DIR' on the target database, as well as on each source database. This directory is used for logging the export import task used during the initial ELT load.

The following is a sample SQL that creates the database directory pointing to the file system path /scratch/file_data:

```
CREATE DIRECTORY B1_DATA_DUMP_DIR AS '/scratch/file_data';
```

Configuring Oracle Data Integrator Repository Creation Utility (RCU)

To configure the Oracle Data Integrator Repository Creation Utility, follow these steps:

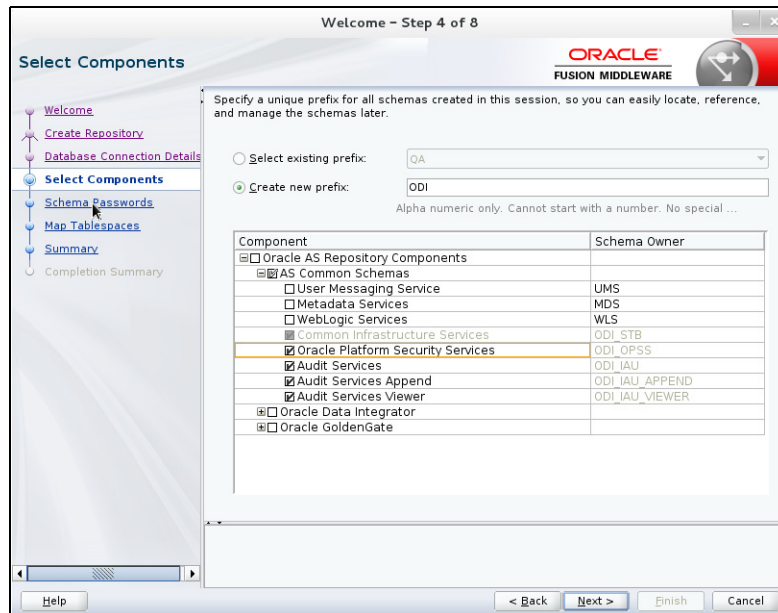
1. Ensure RCU for ODI is run and the required schemas are created in the target database.
ODI_ORACLE_HOME is an Oracle Home path used as Oracle Home while installing FMW Infrastructure and Oracle Data Integrator (ODI).
2. Set or export JAVA_HOME variable to the 1.8.0_77+ installed directory.
3. Go to \$ODI_ORACLE_HOME/oracle_common/bin.

- Execute the RCU utility.

For example:

```
export JAVA_HOME=/scratch/bi_oradata_01/jdk1.8.0_77
cd /scratch/bi_oradata_01/Middleware_ODI_12.2.1_EE/Oracle_Home/
oracle_common/bin
./rcu
```

- In the Repository Creation Utility, select **Create Repository > System Load and Product Load** option.
- On the page, provide the database connection details.
- On the **Select Components** page, the options are shown as below. De-select the Oracle Data Integrator component.



- In the next page, make a note of or remember the password given. It will be required while creating the Oracle Data Integrator domain.

Note that a new script to create the ODI domain is described in the [Creating WebLogic Domain for Oracle Data Integrator Agent](#) section. This utility assumes that the same password is used for all RCU schemas. The assumption was made to keep the inputs to the domain creation script simple.

It is not required to create the Oracle Data Integrator domain at this stage. It should be done after running the Oracle Utilities Analytics installer and before running source configuration tool.

Creating WebLogic Domain for Oracle Data Integrator Agent

Create the WebLogic Domain to bring up the WebLogic Agent (ODI Agent) to complete the steps. In this product release, ODI Domain creation is automated, and creation of both clustered and non-clustered domain is supported.

- [Creating a Non-Clustered Domain](#)
- [Creating a Clustered Domain](#)

Note: The following procedures assume that the pre-requisite Java 8/bin is in the PATH variable.

Creating a Non-Clustered Domain

To create a non-clustered domain, follow these steps:

Note: The password fields' values (RCUSCHEMAPWD,WEBLOGIC_PASSWORD) will be cleared from ODI_CONFIG.properties after executing createDomain.sh or createMachine.sh. Ensure these fields are updated for each invocation of createDomain.sh or createMachine.sh.

1. Navigate to the <OUA Environment>/etc directory and provide the following properties in the ODI_CONFIG.properties file.

Property	Description
Mandatory fields	
DOMAIN_PATH	In Windows environment, replace “\” with “/” in the domain path. For example: C:/odi12.2.1/odi12.2.1_home/user_projects/domains/odi_domain5
RCUPREFIX	Repository prefix created in the Configuring Oracle Data Integrator Repository Creation Utility (RCU) section.
RCUSCHEMAPWD	Repository schema password provided in the Configuring Oracle Data Integrator Repository Creation Utility (RCU) section.
WEBLOGIC_USERNAME	WebLogic user name for ODI domain
WEBLOGIC_PASSWORD	WebLogic password for ODI domain
ODI_DBSERVER	ODI database server name (target database server)
ODI_DBPORT	ODI database port (target database port)
ODI_DBNAME	ODI database name (target database name)
ADMIN_PORT	ODI domain admin port
ODI_DOMAIN_HOSTNAME	Host name on which the ODI domain is created
Optional fields	
NONSSL_PORT	If not specified, default port 7001 will be assigned.
MANAGED_SERVER_PORT	If not specified, default port 15101 will be assigned.

2. Navigate to the <OUA Environment>/bin directory and invoke the **createDomain.sh/cmd** script.

Refer to the sections [Starting the WebLogic Admin Server](#) and [Starting the Managed Server \(ODI_server1\)](#) to start the Admin server and Managed server.

Creating a Clustered Domain

To create a clustered domain, follow the steps below:

Note: The password fields' values (RCUSCHEMAPWD,WEBLOGIC_PASSWORD) will be cleared from ODI_CONFIG.properties after executing createDomain.sh or createMachine.sh. Ensure these fields are updated for each invocation of createDomain.sh or createMachine.sh.

1. Navigate to the <OUA Environment>/etc directory and provide the following properties in the ODI_CONFIG.properties file.

Property	Description
Mandatory fields	
DOMAIN_PATH	In Windows environment, replace “\” with “/” in the domain path. For example: C:/odi12.2.1/odi12.2.1_home/user_projects/domains/odi_domain5
RCUPREFIX	Repository prefix created in the Configuring Oracle Data Integrator Repository Creation Utility (RCU) section.
RCUSCHEMAPWD	Repository schema password provided in the Configuring Oracle Data Integrator Repository Creation Utility (RCU) section.
WEBLOGIC_USERNAME	WebLogic user name for ODI domain
WEBLOGIC_PASSWORD	WebLogic password for ODI domain
ODI_DBSERVER	ODI database server name (target database server)
ODI_DBPORT	ODI database port (target database port)
ODI_DBNAME	ODI database name (target database name)
ADMIN_PORT	ODI domain admin port
ODI_DOMAIN_HOSTNAME	Host name on which the ODI domain is created
CLUSTER_NAME	Additional mandatory field for clustered domain

2. Navigate to the <OUA Environment>/bin directory and invoke the **createDomain.sh/cmd** script.

This creates an ODI domain with an Admin server and a Managed server (as 'ODI_server1') and assigned to the cluster.

Refer to the [Starting the WebLogic Admin Server](#) and [Starting the Managed Server \(ODI_server1\)](#) sections to start the Admin server and Managed server.

To create another managed server and add it to the cluster, follow these steps:

1. Bring up the Admin server.
2. Navigate to the <OUA Environment>/etc directory and provide the following mandatory properties in the ODI_CONFIG.properties file:
 - MANAGED_SERVER_NAME
 - MANAGED_SERVER_PORT

3. Provide the following optional properties in the ODI_CONFIG.properties file:
 - MACHINE_NAME
 - MACHINE_PORT
4. Navigate to <OUA_Environment>/bin and invoke createMachine.sh/cmd.

A new managed server is created with the specified name and assigned to the cluster.

Refer to the sections [Starting the WebLogic Admin Server](#) and [Starting the Managed Server \(ODI_server1\)](#) to start the Admin server and Managed server.

Starting the WebLogic Admin Server

To start the WebLogic Admin server, perform the following steps:

1. In the command shell, change the directory to the directory of the WLS Home.

```
<MW_HOME>/user_projects/domains/<ODI_DOMAIN_NAME>/bin
```

2. Execute the startweblogic command:

In Unix:

```
nohup ./startWebLogic.sh > startWebLogic.log &
```

In Windows:

```
startWebLogic.cmd
```

Starting the Managed Server (ODI_server1)

To start the odi_server1 managed server, follow these steps:

1. Change to <MW_HOME>/user_projects/domains/<ODI_DOMAIN_NAME>/servers/ODI_server1/security/.
2. Create boot.properties file. Enter the username and password in the respective fields in the file. Save the file.

Below is an example of the boot.properties file:

```
username=<weblogic username>
password=<weblogic password>
```

3. Change the directory to WLS Home to start odi_server1:

In Unix:

```
<MW_HOME>/user_projects/domains/<ODI_DOMAIN_NAME>/bin
```

```
nohup ./startManagedWebLogic.sh odi_server1 >
StartManagedWeblogic.log &
```

In Windows:

```
StartManagedWeblogic.cmd odi_server1
```

4. In the Oracle Data Integrator Studio, navigate to **Topology > Agents > OracleDI Agent**.
5. Right-click **OracleDI Agent** and click **Test** to test the connectivity of the configured Oracle Data Integrator Java EE agent.

Installing Oracle Utilities Analytics Administration Component

Oracle Utilities Analytics Administration Tool is an Oracle Application Express (APEX) based configuration tool used to configure Oracle Utilities Analytics.

This section describes how to install the tool to configure Oracle Utilities Analytics and change the default password of the Admin user.

- [Installation Steps](#)
- [Changing Default Password of the Admin User](#)

Note: Install Oracle Utilities Analytics Administration component on the Oracle Utilities Analytics database server.

Installation Steps

To install the Oracle Utilities Analytics Administration Tool, follow these steps:

1. Download Apex 5.0.4 to the database server under the /temp directory. Then unzip the file.

```
cd /temp/apex
```

2. Connect to the Oracle Utilities Analytics database as the **sys user** and execute the following commands:

```
@apxremov.sql
@apxrtins <Tablespace name> <Tablespace name> <Temp Tablespace
name> /i/
```

For example, @apxrtins CISTS_01 CISTS_01 TEMP /i/

```
@apxchpwd.sql
ALTER USER APEX_PUBLIC_USER ACCOUNT UNLOCK;
ALTER USER APEX_PUBLIC_USER IDENTIFIED BY APEX_PUBLIC_USER;
@apex_rest_config.sql
```

Note: Ensure to note down the passwords for APEX_Listener user and APEX_REST_PUBLIC_USER.

3. Import the tool to configure Oracle Data Integrator:
 - a. Unzip the **Oracle Utilities Analytics V2.7.0 Multiplatform.zip** file. The file includes the AdminTool folder.
 - b. Create the ../AdminTool directory on the database server and copy the contents of the AdminTool directory (from the zip file) to this directory.
 - c. Navigate to the ../AdminTool directory. (cd ../AdminTool).
 - d. Connect as the **sys user** and execute the following scripts:
 - To create workspace and configure the users:
@CreateAppWorkspace.sql
 - To import application:
@DeployAdminApp.sql
 - To deploy supporting objects:
@DeploySupportingObjects.sql
4. Download Apex 5.0.4 to the server where you want to set up the tool (under /scratch/bi_oradata_01/Softwares/apex_5.0.4 directory).

Note: Create /scratch/bi_oradata_01/Softwares/apex_5.0.4 directory if it does not exist.

- Download Oracle Rest Data service 3.0.6 to the server where you want to set up the Administration Tool (under /scratch/bi_oradata_01/Softwares/apex_listner directory).

Note: Create /scratch/bi_oradata_01/Softwares/apex_listner directory if it does not exist.

- Navigate to the scratch/bi_oradata_01/Softwares/apex_listner directory and unzip the ords zip file.

```
cd /scratch/bi_oradata_01/Softwares/apex_listner
```

- Navigate to the cd /scratch/bi_oradata_01/Softwares/apex_5.0.4 directory and unzip the apex_5.0.4_en.zip file.

```
cd /scratch/bi_oradata_01/Softwares/apex_5.0.4
```

- Create a directory on the server to configure Apex.

For example: mkdir/scratch/bi_oradata_01/apex_configuration

- Navigate to the /scratch/bi_oradata_01/Softwares/apex_listner directory:

```
cd /scratch/bi_oradata_01/Softwares/apex_listner
```

- Execute the following command:

```
java -jar ords.war install advanced
```

Note: Use JDK1.8 to execute the command.

Provide the necessary inputs as shown below:

```
Bash-4.1$ java -jar ords.war install advanced
This Oracle REST Data Services instance has not yet been configured.
Please complete the following prompts

Enter the location to store configuration data:/scratch/bi oradata 01/apex_configuration
Enter the name of the database server [localhost]:
Enter the database listen port [1521]:
Enter 1 to specify the database service name, or 2 to specify the database SID [1]:
Enter the database service name:
Enter 1 if you want to verify/install Oracle REST Data Services schema or 2 to skip this step [1]:
Enter the database password for ORDS_PUBLIC_USER:
Confirm password:

Please login with SYSDBA privileges to verify Oracle REST Data Services schema. Installation may be required.

Enter the username with SYSDBA privileges to verify the installation [SYS]:sys
Enter the database password for sys:
Confirm password:
Jun 22, 2015 2:08:51 AM oracle.dbtools.rt.config.setup.SchemaSetup addSchemaParams
INFO:
Oracle REST Data Services schema does not exist and will be created.

Enter the default tablespace for ORDS_METADATA [SYSAUX]:
Enter the temporary tablespace for ORDS_METADATA [TEMP]:
Enter the default tablespace for ORDS_PUBLIC_USER [USERS]:
Enter the temporary tablespace for ORDS_PUBLIC_USER [TEMP]:
Enter 1 if you want to use PL/SQL Gateway or 2 to skip this step [1]:
Enter the PL/SQL Gateway database user name [APEX_PUBLIC_USER]:
Enter the database password for APEX_PUBLIC_USER:
Confirm password:
```

```
Enter 1 to specify passwords for Application Express RESTful Services database users (APEX_LISTENER, APEX_REST_PUBLIC_USER) or 2 to skip
this step [1]:
Enter the database password for APEX_LISTENER:
Confirm password:
Enter the database password for APEX_REST_PUBLIC_USER:
Confirm password:
Jun 22, 2015 2:09:36 AM oracle.dbtools.common.config.file.ConfigurationFilesBase update
INFO: Updated configurations: defaults, apex_pb, apex, apex_al, apex_rt
Jun 22, 2015 2:09:36 AM oracle.dbtools.installer.Installer installORDS
INFO:
Installing Oracle REST Data Services version 3.0.0.121.10.23
... Log file written to /scratch/bi_oradata_01/Softwares/apex_listner/logs/ordsinstall_2015-06-22_020936_00353.log
... Verified database prerequisites
... Created Oracle REST Data Services schema
... Granted privileges to Oracle REST Data Services
... Created Oracle REST Data Services database objects
... Created Oracle REST Data Services proxy user
Jun 22, 2015 2:09:48 AM oracle.dbtools.installer.Installer installORDS
INFO: Completed installation for Oracle REST Data Services version 3.0.0.121.10.23. Elapsed time: 00:00:12.203
Enter 1 if you wish to start in standalone mode or 2 to exit [1]:2
```

- Navigate to the /scratch/bi_oradata_01/Softwares/apex_listner directory:

```
cd /scratch/bi_oradata_01/Softwares/apex_listner
```

12. Execute the following command:

```
java -jar ords.war static /scratch/bi_oradata_01/Softwares/  
apex_5.0.4/apex/images
```

Note: The command creates i.war file.

13. Create the WebLogic domain.

- a. Navigate to <Middleware Home>/Weblogic_12.2.1_Home/oracle_common/
common/bin.

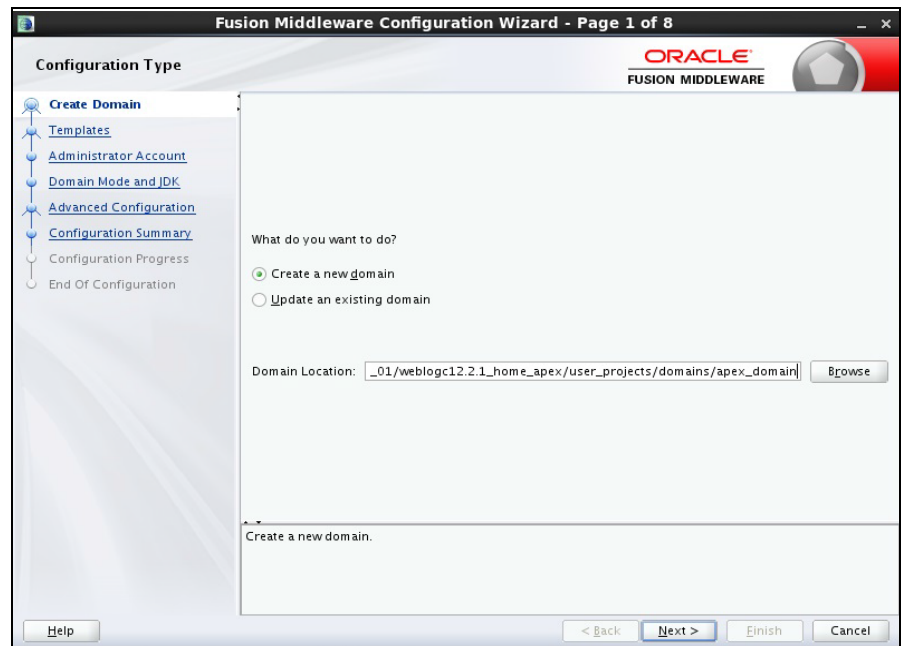
```
cd <Middleware Home>/Weblogic_12.2.1_Home/oracle_common/common/  
bin
```

- b. Execute the following command:

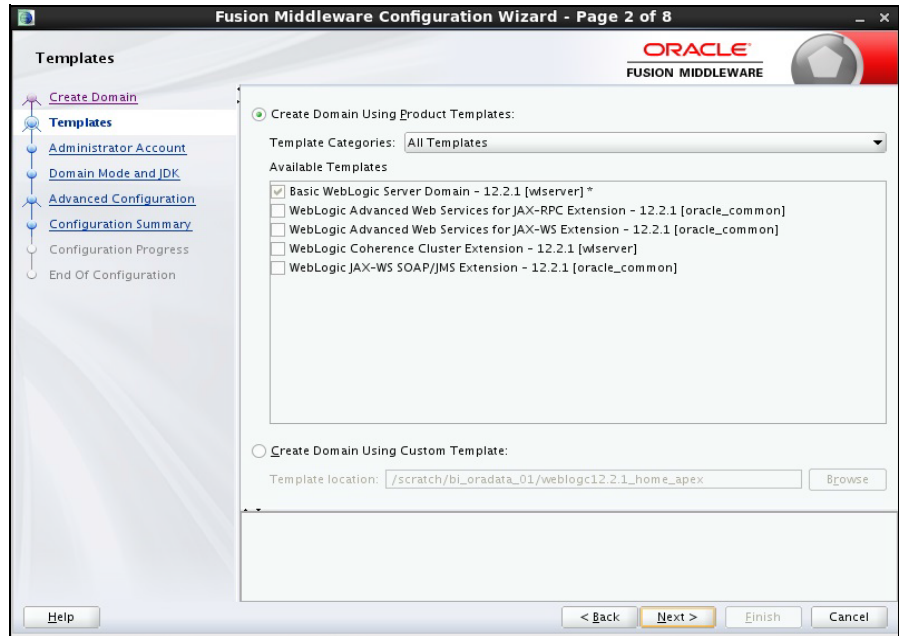
```
./config.sh
```

The **Fusion Middleware Configuration Wizard** window appears.

- a. Select **Create a new WebLogic domain** and click **Next**.



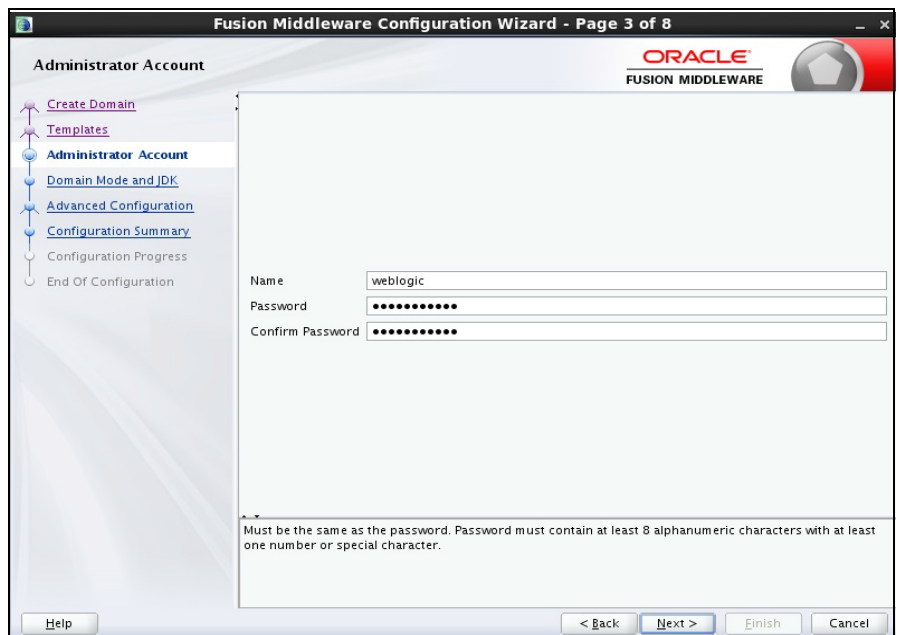
b. Provide the domain name.



Ensure you do not change the domain location.

Click **Next**.

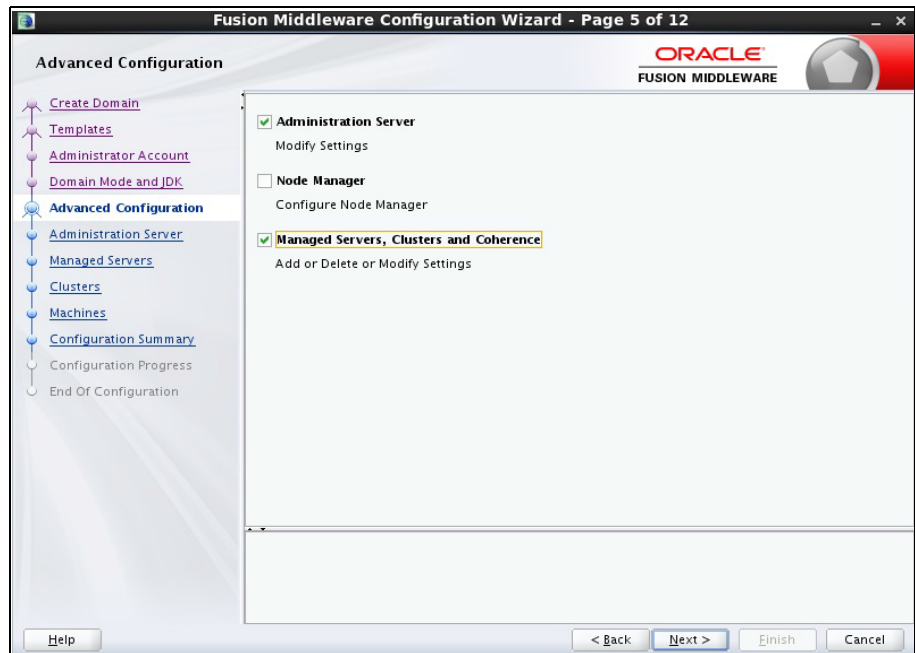
c. Provide the WebLogic User Password. Ensure you make a note of the password.



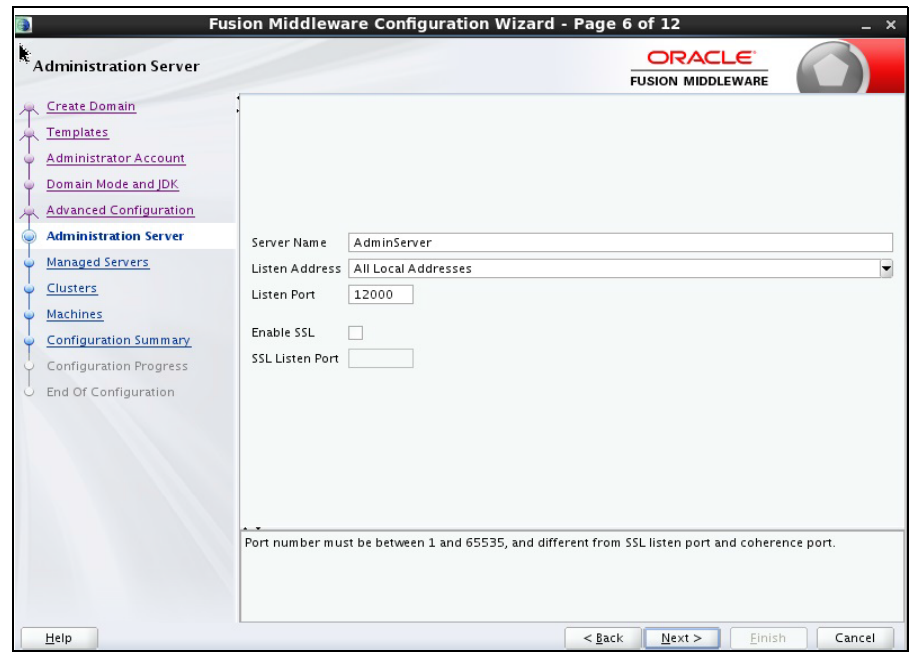
Click **Next**.

d. Select jdk1.8 and click **Next**.

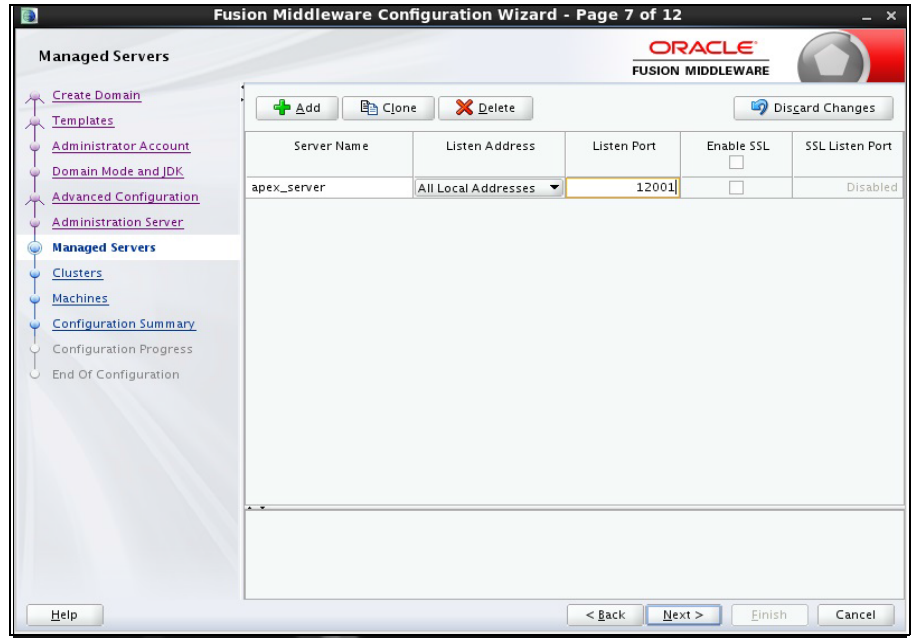
- e. Select the **Administration Server**, **Managed Servers**, **Clusters** and **Machines** options. Then, click **Next**.



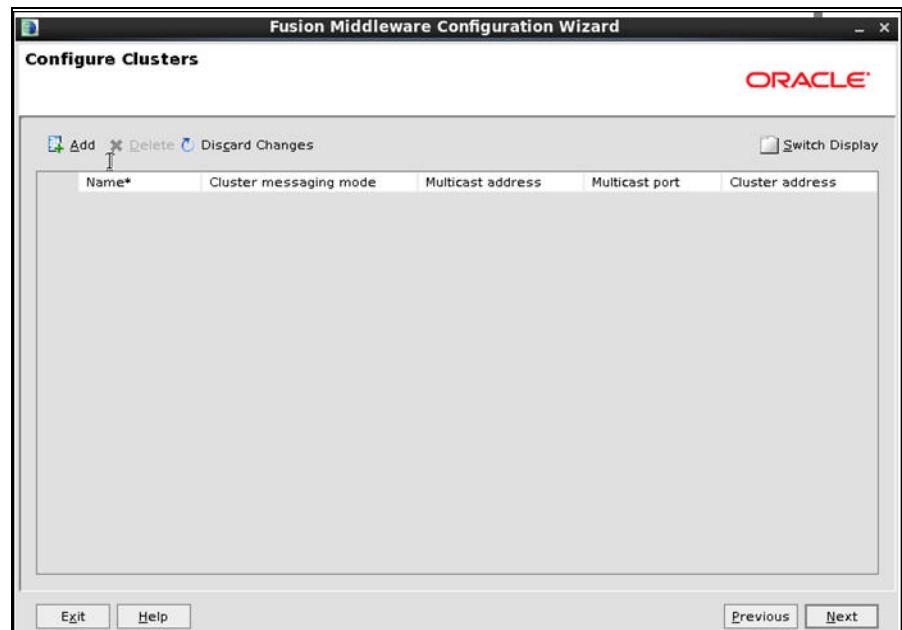
- f. Provide the **Listen Port** as available port. Click **Next**.



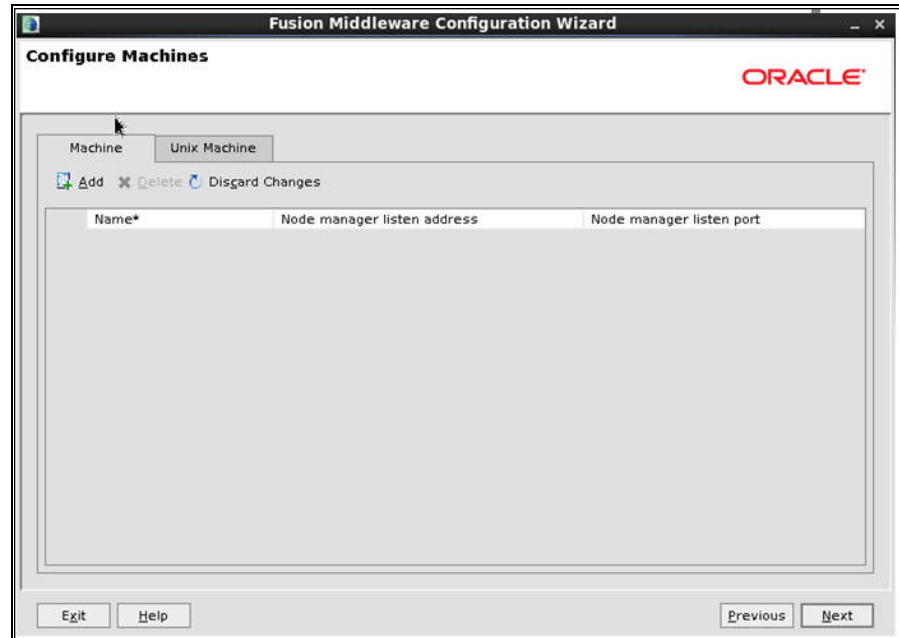
- g. Click **Add** and provide values as shown below:



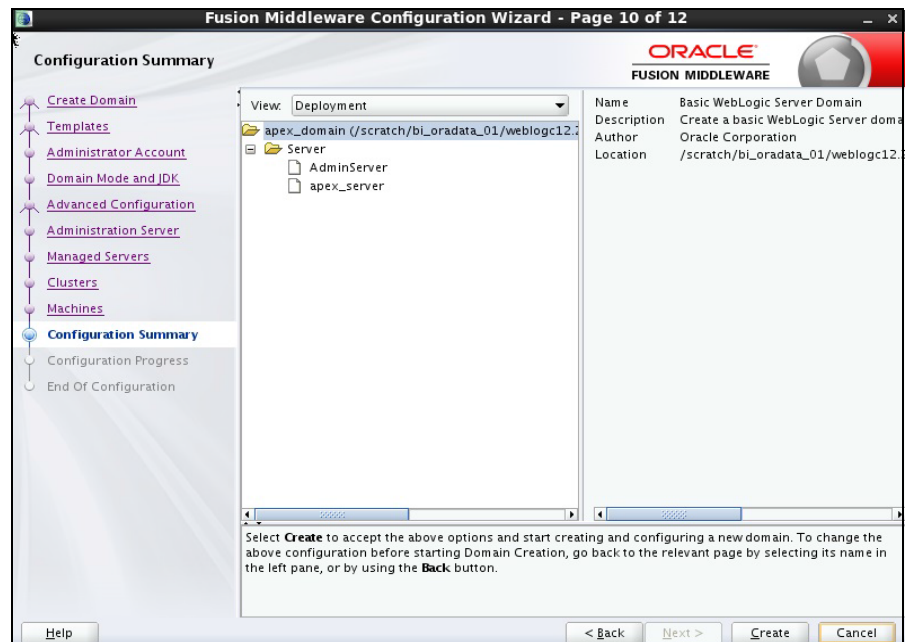
Click **Next**.



- i. On the Configure Machines page, click **Next**.

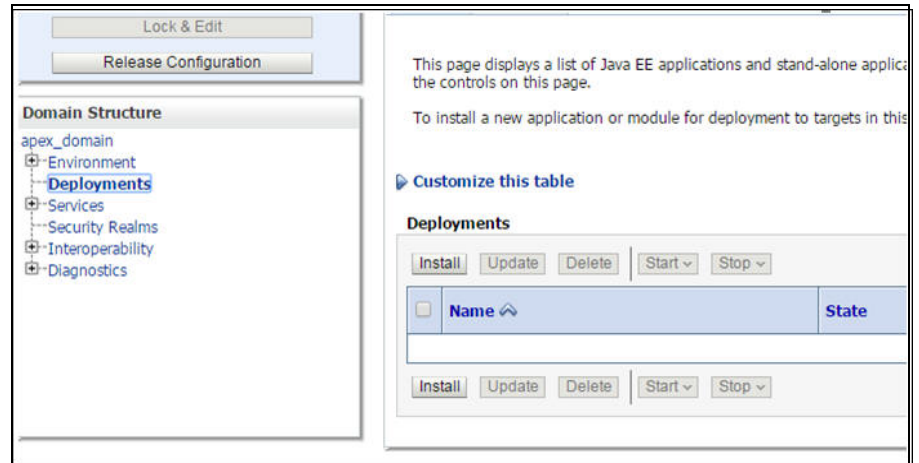


- j. On the Configuration Summary page, click **Next**.



14. Create the **boot.properties** file.
15. Start the Admin and Managed server.

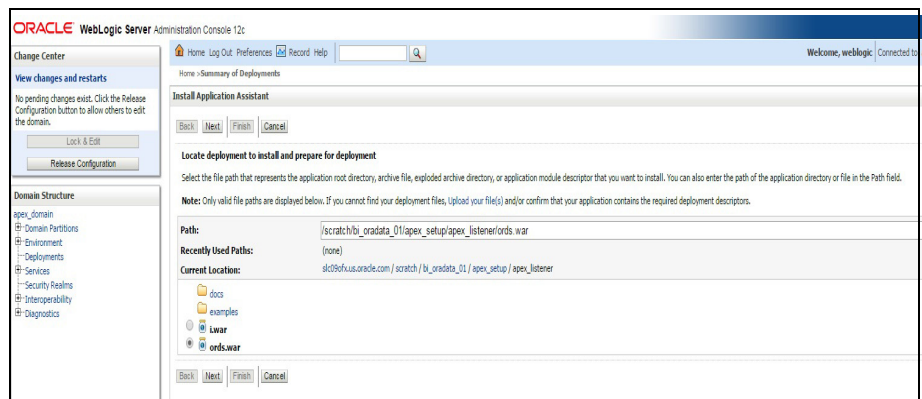
16. Login to WebLogic console and click **Lock & Edit**.



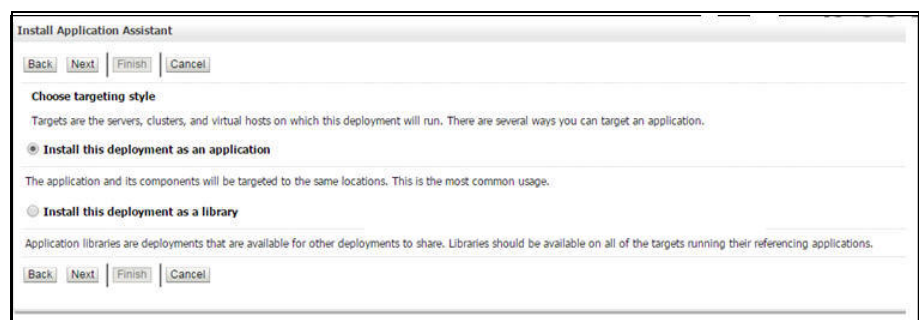
17. Click **Install**.

18. Enter the following path and then select the **ords.war** file.

/scratch/bi_oradata_01/Softwares/apex_listner



Click **Next**.



19. Select the **apex server** check box and click **Next**.

The screenshot shows the 'Install Application Assistant' wizard at the 'Select deployment targets' step. The breadcrumb trail is 'Home > Summary of Deployments'. The page title is 'Install Application Assistant'. There are navigation buttons: 'Back', 'Next', 'Finish', and 'Cancel'. The main heading is 'Select deployment targets' with a sub-heading 'Available targets for ords :'. Below this is a table with two rows: 'AdminServer' (unchecked) and 'apex_server' (checked). At the bottom, there are navigation buttons: 'Back', 'Next', 'Finish', and 'Cancel'.

20. Select the options as shown below:

The screenshot shows the 'Install Application Assistant' wizard at the 'Optional Settings' step. The breadcrumb trail is 'Home > Summary of Deployments'. The page title is 'Install Application Assistant'. There are navigation buttons: 'Back', 'Next', 'Finish', and 'Cancel'. The main heading is 'Optional Settings' with a sub-heading 'You can modify these settings or accept the defaults'. The 'General' section is expanded, showing 'What do you want to name this deployment?' with a text input field containing 'ords'. The 'Security' section is expanded, showing 'What security model do you want to use with this application?' with four radio button options: 'DD Only', 'Custom Roles', 'Custom Roles and Policies', and 'Advanced'. The 'Source accessibility' section is expanded, showing 'How should the source files be made accessible?' with two radio button options: 'Use the defaults' (selected) and 'Copy this application onto every target for me'. Below this is a 'Location' text input field containing '/scratch/bi_oradata_01/Softwares/apex_listner/ords war'. At the bottom, there are navigation buttons: 'Back', 'Next', 'Finish', and 'Cancel'.

21. Select the options as shown below:

Install Application Assistant

Back Next Finish Cancel

Review your choices and click Finish
Click Finish to complete the deployment. This may take a few moments to complete.

Additional configuration
In order to work successfully, this application may require additional configuration. Do you want to review this application's configuration after completing this assistant?

Yes, take me to the deployment's configuration screen.

No, I will review the configuration later.

Summary

Deployment: /scratch/bl_oradata_01/Softwares/apex_listner/ords.war

Name: ords

Staging mode: Use the defaults defined by the chosen targets

Security Model: CustomRoles: Use policies that are defined in the deployment descriptor. Create custom role mappings later.

Target Summary

Components	Targets
ords	apex_server

Back Next Finish Cancel

22. Click **Activate Changes**.

View changes and restarts

Pending changes exist. They must be activated to take effect.

Activate Changes

Undo All Changes

23. Repeat the steps 13 to 20 to deploy the **i.war** file.

24. Login to the WebLogic console and navigate to **Deployment > Monitoring**.

25. Select **i** and **ords**. Then, click **Start > Servicing All Requests**.

Home Log Out Preferences Record Help Welcome, weblogic

Home > Summary of Deployments

Summary of Deployments

Configuration Control Monitoring

This page displays the list of Java EE applications and standalone application modules installed to this domain.

You can start and stop applications and modules from the domain by selecting the checkbox next to the application name and then using the controls on this page.

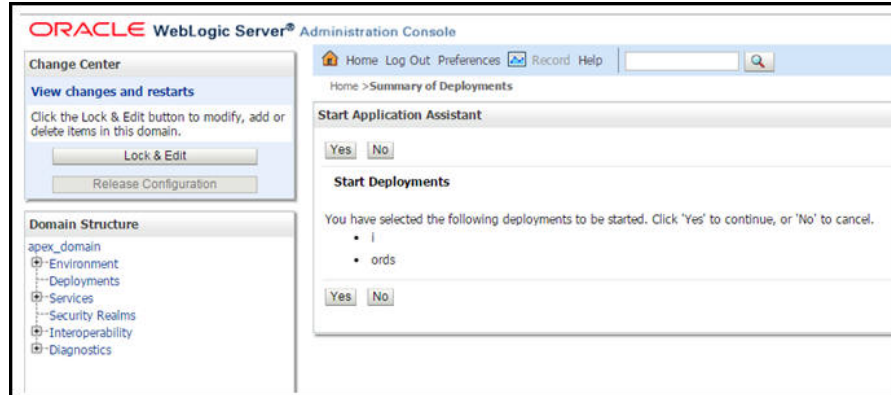
Customize this table

Deployments

Start	Stop	State	Health	Type	Targets	Scope	Details
<input type="checkbox"/>	<input type="checkbox"/>	Prepared	OK	Web Application	apex_server	Global	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Prepared	OK	Web Application	apex_server	Global	

Start Stop

26. Click **Yes**.



27. Restart the Admin and Managed servers.

28. Go to the following URL to access the Administration Tool:

<http://<hostname>:<managed server port no>/ords/f?p=104>

The credentials to access the tool are:

User ID: Admin

Password: Admin_123

Changing Default Password of the Admin User

This section describes the APEX API used to change the password of the admin user. The script should be run after connecting to the database as user SYSTEM.

Replace the string 'New password' with the new password for the admin account before running the script.

```
begin
/

wwv_flow_api.set_security_group_id(p_security_group_id=>nvl(wwv_flow_application_install.get_workspace_id,2090606133849294));
end;
/

begin
apex_util.edit_user(
p_user_id      => '2090514487849294',
p_user_name    => 'ADMIN',
p_web_password => 'New password',
p_new_password => 'New password'
);
end;
/

commit;
/
```

Note: It is strongly recommended to change the default password after logging in.

Installing Oracle Utilities Analytics Dashboards Component

Note: Ensure that the same Operating System (OS) user to install the prerequisite software is used to install the Oracle Utilities Analytics Dashboards component as well.

The Oracle Utilities Analytics Dashboards component is installed on the Oracle Utilities Analytics application server. This section describes how to install the dashboards component of Oracle Utilities Analytics.

- [Creating and Configuring an OBIEE Domain](#)
- [Copying and Decompressing Install Media](#)
- [Starting the Installer](#)
- [Installation Steps](#)
- [Deploying the Repository \(RPD\) File](#)
- [Deploying Web Catalog](#)
- [Configuring and Deploying the MapViewer](#)
- [Updating MapViewer Configuration](#)
- [Enabling WriteBack](#)
- [Enabling Auto Complete Feature in OBIEE](#)

Creating and Configuring an OBIEE Domain

To create and configure an OBIEE domain, follow the steps below. This is a prerequisite to install the Oracle Utilities Analytics Dashboards component.

1. Run RCU to create the necessary schemas.
 - a. Navigate to <FMW infrastructure home>/oracle_common/bin. Example location:

```
cd /u01/12.2.1.9_Infrastructure/oracle_common/bin
```
 - b. Run below command and follow the instructions in the wizard:

```
./rcu
```

Note: Select AS Common Schemas and Oracle Business Intelligence components in the **Select Components** panel.
2. Run the OBIEE configuration assistant to create an OBIEE domain.
 - a. Navigate to <FMW infrastructure home>/bi/bin
Example location:

```
cd /u01/12.2.1_Infrastructure/bi/bin
```
 - b. Run below command and follow the instructions in the wizard:
In Unix:

```
./config.sh
```


In Windows:

```
./config.cmd
```
 - c. On the **Database Details** panel, choose “Use existing schemas” and provide connection details (prefix of the RCU run in step 1).

- d. On the **Initial Application** panel, select “Oracle sample application (SampleAppLite).
Note: Ensure the BI domain path, WebLogic user name and password are noted down. They should be provided as inputs when the Oracle Utilities Analytics Dashboards component installer is run.
3. After the successful creation of OBIEE domain, start the OBIEE Admin server.
4. Login into the Admin console.
 - a. On the **Environment** tab, navigate to the coherence clusters.
 - b. Click **defaultCoherenceCluster** and then select the **Configuration** tab.

Ensure the port mentioned in the **Cluster Listen Port** field is not in use. If needed, change it to another port that is not in use.
 - c. Click **Save** to save the port changes (if any).
 - d. Start the OBIEE Managed server.
5. After starting the OBIEE domain services successfully, navigate to the <OBIEE domain>/config/fmwconfig directory.
 - a. Open jps-config.xml.
 - b. Under the <serviceInstance name=”idstore.ldap” provider=”idstore.ldap.provider”> element, add the property element as below:


```
<property
name="oracle.security.jps.ldap.policystore.refresh.interval"
value="6000000"/>
```

The OBIEE domain is successfully created and configured.

Copying and Decompressing Install Media

To download and decompress the install media, follow these steps:

1. Download the Oracle Utilities Analytics Dashboards component v2.7.0 (**Oracle Utilities Analytics V2.7.0 Multiplatform.zip**) from the Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).
2. Create a temporary directory, such as c:\OUA\temp or /OUA/temp (referred to <TEMPDIR> below).

This directory must be located outside any current working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.

3. Unzip **Oracle Utilities Analytics V2.7.0 Multiplatform.zip** to <TEMPDIR>.

Starting the Installer

For an AIX Operating System, set the following environment variable before starting the Oracle Utilities Analytics installation:

```
export IBM_JAVA_OPTIONS="-Xmx2g -XX:PermSize=64m -XX:MaxPermSize=3200m
```

To start the installer, do the following:

1. Navigate to the temporary folder where you downloaded the install. Run the following command from the folder:

```
java -jar <TEMPDIR>/OUA_2.7.0.0.0_generic.jar -logLevel finest
```

Note: The minimum JDK required for running the Oracle Utilities Analytics installer is JDK 1.8.

2. On the **Welcome** page, review the information before you begin the installation.
3. Click **Next** to continue with the installation.
4. Complete the installation by following the tasks on the navigation pane.

Each item in the navigation pane represents a specific installer screen that prompts you for the information required to install the software.

Installation Steps

To install the Dashboards component, follow these steps:

1. Run the Oracle Utilities Analytics Installer.
2. On the **Welcome** page, review the available information before you begin the installation.
3. Click **Next** to continue with the installation. The **Installation Location** page appears.
4. Define the **Installation Location** here and click **Next**. The **Select Installation Type** page appears.

Note: The specified Oracle home directory must be an empty directory or a directory where the OUA ODI ETL 2.7.0.0.0 component was installed successfully.

5. In the **Select Installation Type** page, select **Dashboards** and click **Next**.

Note: Based on the selected installation type, the options on the left navigation panel change. When you select **Dashboard** as an **Installation Type**, you need to define **Database and Java Home Details**, **Target Database Connection Details** and **OBIEE Home Details**.

The **Database and Java Home Details** page appears.

6. Enter the following details in the respective fields and click **Next**.

Field Name	Description	Value
Database Client Home	Database client home location	Example: /u01/app/product/12.1.0/dbhome_1
Java Home	JDK home location	JDK 1.8 location Example: /u01/jdk_1.8.0_77

The **Target Database Connection Details** page appears.

7. Enter the following details in the respective fields and click **Next**.

Field Name	Description	Value
Host	The host name of the server where the database resides.	Oracle Utilities Analytics Database Server

Field Name	Description	Value
Port	The database port number on the database server used for connecting to the database.	Oracle Utilities Analytics Database Port. The default value is 1521.
Service Name	The service name for the database	
Target Schema Password	The password for the target schema (DWADM).	
Confirm Target Schema Password	Confirm the password for the target schema (DWADM) here.	
Metadata Schema Password	The password for the metadata schema (MDADM).	
Confirm Metadata Schema Password	Confirm the password for the metadata (MDADM) schema here.	

The **OBIEE Home Details** page appears.

8. Enter the following details in the respective fields and click **Next**.

Field Name	Description	Value
BI Home	The location on the disk where OBIEE is installed.	Example: /u01/ Middleware/Oracle_BI1
BI Domain Home	The domain Home location under the directory where OBIEE is installed.	Example: /u01/ Middleware/ user_projects/domains/ bifoundation_domain
Weblogic Host	The hostname on which WebLogic server for OBIEE is running.	
Weblogic Port Number	A unique port number within the system that is assigned to the HTTP port. This port number is used as a part of the client URL request to connect to the host. It is the OBIEE WebLogic console admin port number.	Example: 7001
Weblogic User	WebLogic domain login user name.	

Note: You will be prompted for the Weblogic user's password after installation.

The **Installation Summary** page appears.

9. Verify the installation options and click **Install** to begin the installation.

For any changes to the configuration before starting the installation, use the navigation pane and select the topic to edit.

10. The **Installation Progress** page appears allowing you to see the progress of the installation. Operations being performed as part of the installation are logged to the terminal from which the installer was run. Detailed logs of the installation are also available in the logs/system directory under the installation location.

To quit before the installation is complete, click **Cancel**. Doing so will result in a partial installation; the portion of the software that was installed on your system before you click **Cancel** will remain on your system, and it needs to be deleted manually.

11. On the **Installation Completed** page, click **Finish** to close the installer.

The Dashboards component is now installed successfully.

Deploying Web Catalog

Take the backup of existing BI Publisher reports from the catalog location. After the deployBAR step is completed successfully, copy the BI Publisher reports (for which backup was taken) to the location of the catalog.

To deploy the web catalog, follow these steps:

1. Go to the <DOMAIN_HOME>/bidata/service_instances/ssi/metadata/content/catalog/root/shared directory.
2. Delete the existing catalogs (if any) that were delivered out-of-the-box with Oracle Utilities Analytics in the previous release.

Ensure any custom catalog related files in this directory are backed up in a separate location before running deployBar.sh/cmd.

If Oracle Utilities Network Management System BI Publisher reports were deployed they should be retained.

3. Follow the steps as below for UNIX and Windows respectively:

- **In Unix:**

- a. Navigate to <Install_Dir>/bin directory.

```
cd <Install_Dir>/bin
```

- b. Add Java 8 to the path variable as shown in example below:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

- c. Run ksh ./deployBAR.sh.

- **In Windows:**

- a. Navigate to <Install_Dir>/bin directory.

```
cd <Install_Dir>\bin
```

- b. Add Java 8 to the path variable as shown in example below:

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```

- c. Run deployBAR.cmd.

The web catalog is successfully deployed.

For an AIX operating system, after the `deployBAR.sh/deployBAR.cmd` is completed successfully, execute the following command:

```
cp -r ../writeback/wbtemplates/* $DOMAIN_HOME/bidata/
service_instances/ssi/metadata/content/msgdb/l_en/customMessages
```

Deploying the Repository (RPD) File

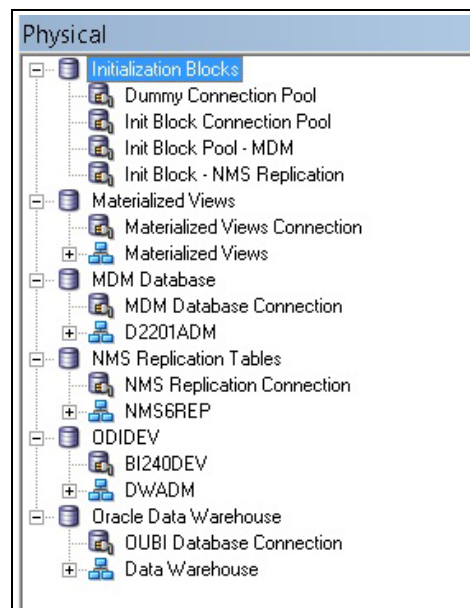
If no changes are made to the deployed RPD, then take the RPD file from the following location, where `<install_dir>` is the Oracle Utilities Analytics Dashboard Component installation directory:

`<install_dir>/Reports/rpd/ UtilitiesBusinessAnalytics.rpd`

If it was merged, then take the merged RPD and make the required database changes. Copy this RPD file to the Windows machine on which OBIEE 12.2.1 is installed.

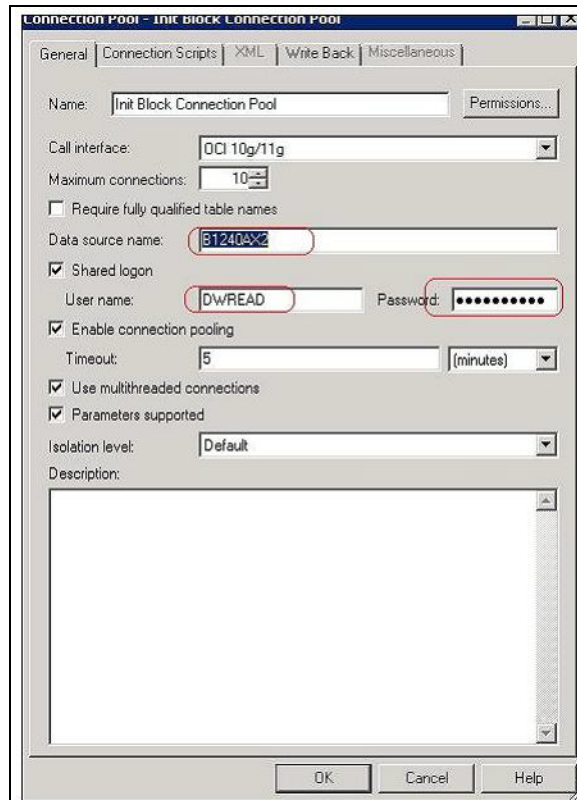
To deploy the RPD file, follow these steps:

1. Ensure OBIEE 12.2.1 is installed on the Windows machine before proceeding.
2. Click **Start > Programs > Oracle Business Intelligence > Administration**.
3. Click **File > Open > Offline...** to open the RPD in offline mode.
4. Provide the RPD password. The default password is “oracle123”.
5. Double-click the **Connection Pools** to edit them.



- In the **Init Block Connection Pool** group, enter the following:
 Datasource name = BI Database name
 User name = DWREAD
 Password = DWREAD User password
- In the **Init Block Pool - MDM** group, provide the following (only for Oracle Utilities Meter Data Management):
 Datasource name = MDM database name
 User name = CISUSER
 Password = CISUSER User password

- In the **Init Block Pool - NMS Replication** group, provide the following (only for Oracle Utilities Network Management System):
Datasource name = BI database name
User name = DWREAD
Password = DWREAD User password
Note: The schema name is NMS1REP by default. Rename it if the replication schema name is different.
- In the **Materialized Views Connection** group, enter the following:
Datasource name = BI Database name
User name =DWREAD
Password = DWREAD User password
- In the **MDM Database Connection** group, provide the following (only for Oracle Utilities Meter Data Management):
Datasource name = MDM database name
User name = CISUSER
Password = CISUSER User password
- In the **NMS Replication Tables** group, provide the following (only for Oracle Utilities Network Management System):
Datasource name = BI database name
User name = DWREAD
Password = DWREAD User password
Note: The default schema name is NMS1REP. If the replication schema name is different, then rename.
- In the **ODIDEV Connection Pool** group, provide the following:
Datasource name = BI database name
User name = DWUSER
Password = DWUSER User password
- In the **OUBI Database Connection** group, provide the following:
Datasource name = BI database name
User name = DWREAD
Password = DWREAD User password



6. Click **Save**.

Note: Click **Yes** when you see the prompt '*Do you wish to check global consistency?*' and ignore any warnings that appear after consistency check is complete.

7. Copy the modified RPD back to the <install dir>/Reports/rpd/UtilitiesBusinessAnalytics.rpd where <install_dir> is the Oracle Utilities Analytics Dashboard Component installation directory.
8. Login to the server where OBIEE Enterprise Manager is installed.
9. Navigate to **<OBIEE DOMAIN>/bitools/bin**.
10. Run the following command to deploy the RPD:

In Windows:

```
data-model-cmd.cmd uploadrpd -I <OUA
home>\Reports\rpd\UtilitiesBusinessAnalytics.rpd -W <rpd
password, default password is oracle123> -U <Weblogic user name
of OBIEE domain> -P <Weblogic password of OBIEE domain> -SI ssi
```

In Unix:

```
data-model-cmd.sh uploadrpd -I <OUA home>/Reports/rpd/
UtilitiesBusinessAnalytics.rpd -W <rpd password, default
password is oracle123> -U <Weblogic user name of OBIEE domain> -
P <Weblogic password of OBIEE domain> -SI ssi
```

11. Run the following commands from <OBIEE DOMAIN>/bitools/bin directory to stop and start the OBIEE domain services respectively.

```
stop.sh/cmd
```

```
start.sh/cmd
```

Configuring and Deploying the MapViewer

Configuring and deploying the MapViewer involves the following tasks:

- [Configuring the MapViewer](#)
- [Modifying instanceconfig.xml](#)
- [Updating MapViewer Configuration](#)

Configuring the MapViewer

To configure the Mapviewer, follow these steps:

1. Login to the WebLogic console.
2. Create the 'MAP_DS' datasource.
3. Lock and edit it.
4. Navigate to **Services > Data Sources**.
5. Select **New > Generic Data Source** and provide the following:
 - Name = MAP_DS
 - JNDI Name = MAP_DS
 - Database Type = oracle
6. Click **Next**.
7. Enter the following:
 - Database Driver = *Oracle's Driver (Thin) for Service connections; Versions:Any
8. Click **Next**.
9. On the next page, do not change any values. Click **Next**.
10. Enter the following connection properties:
 - Database Name: BI Database Name
 - Host Name: Database host
 - Port: Database port
 - Database User Name: dwadm
 - Password: dwadm password
11. Click **Next**.
12. On the next page, click **Test Configuration**. After the successful test, click **Next** again.
13. On the **Select Target** page, select AdminServer under **Servers** and bi_cluster under **Clusters**. Click **Finish**.
14. Click **Activate Changes**.
15. Update the mapViewerConfig file with the tags mentioned below:
 - File location: <Install Dir>
/user_projects/domains/<obiee_domain>/config/fmwconfig/mapviewer/conf
 - File: mapViewerConfig.xml
16. If there is a proxy used, insert the list of host names for all the third-party service providers in the security_config node.


```
<proxy_enabled_hosts>
eolocation.oracle.com
</proxy_enabled_hosts>
```

17. Add the following ns_data_provider node:

```
<ns_data_provider id="obieeNsdp"
class="com.oracle.utilities.birdseye.BirdseyeNSDP" />
```

18. Add the current map_tile_server with the following map_tile_server node:

```
<map_tile_server>
<tile_storage default_root_path="/mytilecache/" />
</map_tile_server>
```

Modifying instanceconfig.xml

Ensure you take a backup before updating the instanceconfig.xml file. Run the following commands in UNIX and Windows respectively to go to the directory containing the instanceconfig.xml file.

In Unix:

```
<OBIEE_INSTALL_DIR>/user_projects/domains/<obiee_domain>/config/
fmwconfig/biconfig/OBIPS
```

In Windows:

```
<OBIEE_INSTALL_DIR>user_projects\domains\<obiee_domain>\config\fmw
config\biconfig\OBIPS
```

Perform the following changes to the instanceconfig.xml file:

1. Update the security node with the following values. If the security node is not present, add the following code before </Serverinstance>:

```
<Security>
<ClientSessionExpireMinutes>210</ClientSessionExpireMinutes>
<HttpOnlyCookies>>false</HttpOnlyCookies>
<CookieDomain />
<CookiePath></CookiePath>
</Security>
```

2. Update the following <ServerInstance> element:

```
<LightWriteback>>true</LightWriteback>
```

3. Add the following code between the <ServerInstance> </ServerInstance> tags.

```
<Prompts>
<MaxDropDownValues>256</MaxDropDownValues>
<AutoApplyDashboardPromptValues>>true</AutoApplyDashboardPromptValues>
<AutoSearchPromptDialogBox>>true</AutoSearchPromptDialogBox>
<AutoCompletePromptDropDowns>
<SupportAutoComplete>>true</SupportAutoComplete>
<CaseInsensitive>>true</CaseInsensitive>
<MatchingLevel>MatchAll</MatchingLevel>
<ResultsLimit>50</ResultsLimit>
</AutoCompletePromptDropDowns>
</Prompts>
<SpatialMaps>
<MapViewerAPIV2Enabled>>false</MapViewerAPIV2Enabled>
</SpatialMaps>
```

Updating MapViewer Configuration

To update the MapViewer configuration, follow these steps:

1. Login to MapViewer.

<http://<Server>:<port>/mapviewer>

2. To update the MapViewer configuration, navigate to MapViewer > Administration > Configuration. Login to the Mapviewer at this location:

<http://<HOST>:<MANAGERPORT>/mapviewer>

3. Add the below code in the mapViewerConfig.xml with the appropriate values:

```
<map_data_source name="mapconn"
jdbc_host="<DB server name>"
jdbc_sid="//<DB Service name>"
jdbc_port="1521"
jdbc_user="DWADM"
jdbc_password="!<DWADM user password>"
jdbc_mode="thin"
number_of_mappers="32"
allow_jdbc_theme_based_foi="true"
/>
```

4. Click **Save**, and then restart.

Enabling WriteBack

To enable the Write Back, perform the following steps:

1. Login to Analytics and navigate to **Administration > Manage Privileges > WriteBack > Write Back to Database**.
2. Click **Denied:Authenticated User** and select the **Granted** permission.

Enabling Auto Complete Feature in OBIEE

To enable the auto complete feature on OBIEE, perform the following steps:

1. Restart the OBIEE Admin server, Managed server, and opmn services.

Note: Refer to OBIEE documentation for detailed instructions on how to start and stop admin server, managed server, and opmn services.

2. Login to Analytics.

<http://<Server>:<port>/analytics>

3. Click **WebLogic User** (top-most-right section of the page).
4. From the drop-down menu, select **My Account**.
5. On the **Preferences** tab, set **Prompt Auto Complete** to **ON**.
6. Click **OK**.

Chapter 5

Installing Oracle Utilities Analytics v2.7.0.0.x Patchset Directly

This chapter provides instructions to install Oracle Utilities Analytics v2.7.0.0.x patchset directly on a Linux machine. It includes:

- [Pre-requisite Software](#)
- [Before You Install](#)
- [Installing Oracle Utilities Analytics Database](#)
- [Installing Oracle Data Integrator Based ELT Component](#)
- [Installing Oracle Utilities Analytics Administration Component](#)
- [Installing Oracle Utilities Analytics Dashboards Component](#)

Download the Oracle Utilities Analytics v2.7.0.0.x patchset package from My Oracle Support.

Note: The instructions in this chapter are applicable only while directly installing Oracle Utilities Analytics v2.7.0.0 Patchset 11 or higher. The assumption is that you have NOT installed v2.7.0 or any other patchset (earlier versions) in your environment. In case you have installed v2.7.0 or any 2.7.0.0.x patch set already, please refer to the **ReadMe** bundled along with the media pack for instructions on how to install the patchset.

Pre-requisite Software

Before you install Oracle Utilities Analytics, you are required to install the prerequisite software.

Refer to the respective installation documentation of the software for download and installation instructions.

Note: Ensure that the same operating system user is used to install all software prerequisites and Oracle Utilities Analytics components.

Following is the list of prerequisite software required to install Oracle Utilities Analytics:

- [Prerequisite Software for Oracle Utilities Analytics Database](#)
- [Prerequisite Software for Oracle Utilities Analytics Installer](#)
- [Prerequisite Software for Oracle Data Integrator Based ELT Component](#)
- [Prerequisite Software for Oracle Utilities Analytics Administration](#)
- [Prerequisite Software for Oracle Utilities Analytics Dashboards](#)

Prerequisite Software for Oracle Utilities Analytics Database

The prerequisite software for the Oracle Utilities Analytics database component is as follows:

Oracle Database Server Enterprise Edition 12.1.0.2.0 - This Oracle Utilities Analytics release is supported on Oracle Database Server Standard Edition 12.1.0.1.0 when using ODI-based ELT component.

Prerequisite Software for Oracle Utilities Analytics Installer

The prerequisite software for Oracle Utilities Analytics Installer is JDK 1.8.0(77)+.

Prerequisite Software for Oracle Data Integrator Based ELT Component

Below is the prerequisite software for ODI-based ELT component of Oracle Utilities Analytics:

- JDK 1.8.0 (77)+
- Oracle Database Server Enterprise Edition 12.1.0.2.0 or Oracle Database Server Standard Edition 12.1.0.1.0
- Oracle Fusion Middleware Infrastructure and Oracle Data Integrator 12.2.1.3.0.

Note: These components can be downloaded separately.

- Oracle GoldenGate 12.2.0.1

Install Oracle GoldenGate on both source application as well target database servers. Download the latest version from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).

Oracle GoldenGate Monitor 12.2.1.0.0 on both source application as well as target database servers. Download the latest version from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).

- Oracle Utilities Analytics Administration

Prerequisite Software for Oracle Utilities Analytics Administration

The prerequisite software for Oracle Utilities Analytics Administration component is:

- Oracle Database Server Enterprise Edition 12.1.0.2.0 or Oracle Database Server Standard Edition 12.1.0.1.0

- Oracle Apex 5.0.4
- Oracle WebLogic 12.2.1.0.0

Prerequisite Software for Oracle Utilities Analytics Dashboards

The prerequisite software for Oracle Utilities Analytics dashboard component is:

- Oracle Fusion Middleware Infrastructure and Oracle Business Intelligence Enterprise Edition 12.2.1.4.0

Note: Download Oracle Fusion Middleware Infrastructure and Oracle Business Intelligence Enterprise Edition 12.2.1.4.0 separately.

Install the Oracle 12.1.0.2.0 client if OBIEE is not installed on the database server. If it is installed, then there is no need to install Oracle client. For installation instructions, refer to the [Installing Oracle Utilities Analytics Dashboards Component](#) section in [Chapter 5: Installing Oracle Utilities Analytics - Initial Installation](#).

After installing OBIEE, save a snapshot of the last page of OBIEE installation that shows the details of BI Oracle Home, Instance Home, etc. These values are used during the Oracle Utilities Analytics installation.

Before You Install

Refer to My Oracle Support for up-to-date additional information about this Oracle Utilities Analytics release.

Installing Oracle Utilities Analytics Database

This section describes the steps to install Oracle Utilities Analytics Database on the database server, including:

- [Installing Prerequisite Software](#)
- [Copying and Decompressing Install Media](#)
- [Creating the Database](#)
- [Creating Users and Tablespaces](#)
- [Installing RELADM Schema](#)
- [Installing MDADM Schema](#)
- [Installing DWADM Schema](#)
- [Configuring Spatial Data](#)

Installing Prerequisite Software

The prerequisite software has to be installed before you begin the component installation. Refer to [Pre-requisite Software for Oracle Utilities Analytics Database](#) for details.

Copying and Decompressing Install Media

To copy and decompress install media:

1. Download Oracle Utilities Analytics v2.7.0.0 Patchset 12 from My Oracle Support.
2. Create a temporary directory.

For example: /OUA/temp for a Linux machine

This directory (referred as <TEMPDIR> below) must be located outside any current working Oracle Utilities application environment. After successful installation, all files in this directory that are part of the installation can be deleted.

3. Unzip the Oracle Utilities Analytics patchset package to <TEMPDIR> using any zip utility.

Creating the Database

In an initial installation, it is recommended to use the Database Configuration Assistant (DBCA) utility to create the database.

Note: Refer to Oracle database documentation to know more about Database Configuration Assistant (DBCA).

Create the database with the following:

- Same character set as the source database character set
- Open cursor limit to 3000
- Processes to 1000

Creating Users and Tablespaces

To create the required users and tablespaces:

1. Create users in the database with the below names (without giving specific roles):
 - DWADM - Contains star schema objects (such as facts and dimensions) containing the data of the data warehouse.
 - DWUSER - User with read/write access to objects in DWADM schema.
 - DWREAD - User with read only access to objects in DWADM schema.
 - MDADM - A metadata schema consisting of database objects used for storing the Oracle Utilities Analytics metadata.
 - RELADM - A metadata schema consisting of database objects used to store the product version and component installation information.
 - OUA_MASTER - ODI Master repository schema
 - OUA_WORK - ODI Work repository schema
 - DWSTAGE - The staging schema of data warehouse.
2. Create roles with the following names:
 - DW_USER - Assigned to DWUSER. It contains all grants for read/write access to objects in the DWADM schema.
 - DW_READ - Assigned to DWREAD. It contains all grants for read only access to objects in the DWADM schema.
 - DW_PRIVS_ROLE - Assigned to MDADM. It contains the privileges necessary for the proper functioning of Oracle Utilities Analytics.
 - DW_REPLICATE - Assigned to various replication users that get created automatically during the source configuration. The privileges necessary for this role are automatically assigned by Oracle Utilities Analytics.
3. Connect to the database as **sys user**.

Execute **Usersgrants.sql** in `<TEMPDIR>/OUA_2.7.0_Patchset/Application/Usersgrants.sql`. This SQL provides required grants to the users created in step 1.

The required users and tablespaces are created.

Installing RELADM Schema

The RELADM schema is a metadata schema consisting of database objects used to store the product version and component installation information.

This section describes initial installation of the RELADM schema, including:

- [Reviewing Storage.xml File](#)
- [Installation Procedure](#)
- [Generating Database Statistics](#)

Reviewing Storage.xml File

The storage.xml file (included in the package and is in `<TEMPDIR>/OUA_2.7.0_Patchset/Database/RELADM/Install-Upgrade`) allocates all the base tables and indexes to the default tablespace CISTS_01.

If few tables or indexes outside of the default tablespace need to be allocated, it should be reflected in the storage.xml file by changing the tablespace name from the default value to a custom value.

Note: If the database does not have CISTS_01 tablespace or RELADM user does not have quota on CISTS_01 tablespace, edit the Storage.xml file to indicate the correct tablespace name on which RELADM has quota.

Installation Procedure

To install the RELADM schema:

Note: This procedure prompts you for the password of RELADM user. Ensure that OraDBI.jar (in the step below) is run using JDK Version 8.0.

Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

In UNIX:

1. Add Java 8 to the path variable.

For example:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/OUA_2.7.0_Patchset/Database /jarfiles/*
```

3. Navigate to `<TEMPDIR>/OUA_2.7.0_Patchset/Database /RELADM/Install-Upgrade` folder.

4. Execute OraDBI.jar.

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/<ORACLE
SERVICE NAME>, \
RELADM,<Password of RELADM user>,,,,RELADM \
-j <JDK Home> -f <TEMPDIR>/OUA_2.7.0_Patchset/Database/jarfiles-v 1
-e true
```

The utility creates the RELADM schema and system data definitions. If an error occurs while executing a SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects.

Connect to the database as **sys user** and execute the following command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('RELADM');
```

Installing MDADM Schema

The MDADM schema is a metadata schema that consists of the database objects used for storing the Oracle Utilities Analytics metadata.

For example: ETL job execution status, target tables for ETL, Oracle GoldenGate configuration details, etc.

This section describes initial installation of the MDADM schema, including:

- [Reviewing Storage.xml](#)
- [Installation Procedure](#)
- [Generating Database Statistics](#)

Reviewing Storage.xml

The storage.xml file (included in the package located at `<TEMPDIR>/OUA_2.7.0_Patchset/Database/MDADM/Install-Upgrade`) allocates all the base tables and indexes to the default tablespace CISTS_01.

If few tables or indexes outside of the default tablespace need to be allocated, it should be reflected in the storage.xml file by changing the tablespace name from the default value to a custom value.

Note: If the database does not have CISTS_01 tablespace or MDADM user does not have quota on CISTS_01 tablespace, edit Storage.xml to indicate the correct tablespace name on which MDADM has quota.

Installation Procedure

To install the MDADM schema:

Note: This procedure prompts you for the password of MDADM user. Ensure that OraDBI.jar (in the step below) is run using JDK Version 8.0.

Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

In UNIX:

1. Add Java 8 to the path variable. For example:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/OUA_2.7.0_Patchset/Database/jarfiles/*
```

3. Navigate to the `<TEMPDIR>/OUA_2.7.0_Patchset/Database /MDADM/Install-Upgrade` folder.

4. Execute OraDBI.jar.

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE_SERVER>:<DATABASE_PORT>/<ORACLE
SERVICE_NAME>, \
MDADM,<Password of MDADM user>,,,,,MDADM \
-j <JDK Home> -f <TEMPDIR>/OUA_2.7.0_Patchset/Database/jarfiles -v
1 -e true
```

The utility creates the MDADM schema and system data definitions. If an error occurs while executing a SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects:

Connect to the database as **sys user** and execute the following command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('MDADM');
```

Installing DWADM Schema

The DWADM schema contains star schema objects (such as facts and dimensions) that contain the data of the data warehouse.

This section describes initial installation of the DWADM schema, including:

- [Reviewing Storage.xml](#)
- [Installation Procedure](#)
- [Generating Database Statistics](#)

Reviewing Storage.xml

The storage.xml file (included in the package located at <TEMPDIR>/OUA_2.7.0_Patchset/Database/DWADM/Install-Upgrade) allocates all the base tables and indexes to the default tablespace CISTS_01.

If few tables or indexes outside of the default tablespace need to be allocated, it should be reflected in the storage.xml file by changing the tablespace name from the default value to a custom value.

Note: If the database does not have CISTS_01 tablespace or DWADM user does not have quota on CISTS_01 tablespace, edit Storage.xml to indicate the correct tablespace name on which DWADM has quota.

Installation Procedure

To install the DWADM schema:

Note: This procedure prompts you for the password of DWADM user. Ensure that OraDBI.jar (in the step below) is run using JDK Version 8.0.

Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

In UNIX:

1. Add Java 8 to the path variable. For example:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export <TEMPDIR>/OUA_2.7.0_Patchset/Database/jarfiles/*
```

3. Navigate to the <TEMPDIR>/>/OUA_2.7.0_Patchset/Database/DWADM/Install-Upgrade folder.

4. Run OraDBI.jar.

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/<ORACLE
SERVICE NAME>,\
DWADM,<Password of DWADM user>,DWUSER,DWREAD,DW_USER,DW_READ,DWADM
\
-j <JDK Home> -f <TEMPDIR>/OUA_2.7.0_Patchset/Database/jarfiles -v
1 -e true
```

The utility creates the DWADM schema and system data definitions. If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects:

Connect to the data as **sys user** and execute the following command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('DWADM');
```

Configuring Spatial Data

Refer to [Chapter 9: Configuring Spatial Data](#) for details about spatial configuration.

Installing Oracle Data Integrator Based ELT Component

This section describes the installation procedure of Oracle Data Integrator based ELT component. It includes:

- [Installing Pre-requisite Software](#)
- [Setting up Oracle GoldenGate](#)
- [Copying and Decompressing Install Media](#)
- [Starting the Installer](#)
- [Installation Steps](#)
- [Creating a Database Directory](#)
- [Creating WebLogic Domain for Oracle Data Integrator Agent](#)
- [Starting the WebLogic Admin Server](#)
- [Starting the Managed Server \(ODI_server1\)](#)

Installing Pre-requisite Software

The Oracle Data Integrator based ELT component is installed on the Oracle Utilities Analytics application server. Refer to [Deployment](#) for information about deploying Oracle Utilities Analytics.

To proceed with installing the ELT component, ensure the following are taken care:

- The operating system user that is used to install all the related software is used to install the ELT component also.
- Set up the source applications with required configurations before proceeding with the ELT component installation. This enables to successfully extract data from them into Oracle Utilities Analytics.
- Verify that the prerequisite software mentioned in [Pre-requisite Software for Oracle Data Integrator Based ELT Component](#) are installed.
- While installing Oracle Data Integrator 12.2.1.3, select **Enterprise Installation** as the installation type.
- While running RCU for Oracle Data Integrator 12.2.1.3, on the **Select Components** page, un-check the **Oracle Data Integrator** check box.

Note: If the source used is Oracle Utilities Network Management System v2.4.0.0, upgrade Oracle GoldenGate to v12.3 in both source and target applications.

Setting up Oracle GoldenGate

This section describes setting up Oracle GoldenGate to work with Oracle Utilities Analytics.

- [Setting up Oracle GoldenGate on Source Database Server](#)
- [Setting up Oracle GoldenGate on Target Database Server](#)
- [Setting up Oracle GoldenGate Monitor JAgent on Target and Source Database Servers](#)
- [Recommended Oracle GoldenGate Parameter Settings](#)

Setting up Oracle GoldenGate on Source Database Server

To set up each source instance, follow these steps:

1. Create a directory on the source database server and install Oracle GoldenGate there. It will be Oracle GoldenGate home (OGG_Home) on the source database server.

For example: `<path>/GoldenGate Home`

Note: Make a note of this directory path; it is used in the Oracle Utilities Analytics installation.

2. Install Oracle GoldenGate.

Download Oracle GoldenGate 12.2.0.1.0 from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).

For installation instructions, refer to the respective installation documentation at <http://docs.oracle.com/goldengate/c1221/gg-winux/index.html>.

3. Provide the Oracle GoldenGate Home location as the directory location created in step 1.
4. Open a command terminal/window and set the source ORACLE_SID and ORACLE_HOME variables.

5. Set LD_LIBRARY_PATH.

In Unix:

```
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
```

6. In the Command window, change the directory to Oracle GoldenGate Home directory, and then execute the following command.

In Unix:

```
./ggsci
```

The Oracle GoldenGate prompt is shown.

7. At the Oracle GoldenGate prompt, execute the following commands in the order they are listed:

- create SUBDIRS
- start mgr

This command starts the Oracle GoldenGate manager process.

- info all

This command verifies if the manager process is running.

- exit

This command exits Oracle GoldenGate.

8. Ensure that the source database is in the **archivelog** mode.
9. Connect to the source database as the **sys user** and execute the statements shown below:

```
alter database add supplemental log data (primary key) columns;
alter system set enable_goldengate_replication=TRUE scope=both;
```

10. In the Command window, navigate to the Oracle GoldenGate Home (OGG_Home) directory.

11. Open the **GLOBALS** file in the directory and add the following command:

```
EnableMonitoring
```

12. Navigate to the Oracle GoldenGate home (OGG_Home) directory.

13. Connect to the database as **sys user** using SQL*Plus.

Ensure OGG_Home to be the current directory while invoking SQL*Plus.

14. Create a new user.

For example: ODM01SRC

This user is the Oracle GoldenGate owner. Ensure to assign a tablespace to this user that is not assigned to any other user.

Note: Ensure to note down the GoldenGate Owner Username; it will be used in the Oracle Utilities Analytics installation.

15. Connect to the source database with **sys user**.

16. Execute the following commands:

Note: Ensure to modify the GoldenGate owner placeholder with actual name of the database user created in step 14.

```

grant CREATE SESSION,CONNECT,RESOURCE,ALTER SYSTEM to <GoldenGate
Owner>;
grant unlimited tablespace to <GoldenGate owner> with admin
option;
EXECUTE dbms_goldengate_auth.grant_admin_privilege('<GoldenGate
Owner>','capture');
grant unlimited tablespace to <GoldenGate Owner> with admin
option;
Revoke dba from <GoldenGate Owner>;
grant create any view to <GoldenGate Owner>;
grant select any dictionary to <GoldenGate Owner>;
GRANT CREATE ANY DIRECTORY TO <GoldenGate Owner>;
GRANT DROP ANY DIRECTORY TO <GoldenGate Owner>;
GRANT EXP_FULL_DATABASE TO <GoldenGate Owner>;
GRANT IMP_FULL_DATABASE TO <GoldenGate Owner>;

```

17. Connect to the <source application>ADM schema (such as CISADM). Execute the following commands:

For **Oracle Utilities Customer Care and Billing** source database, execute the following grants:

```

Grant select on F1_MST_CONFIG to <GoldenGate owner user created in
step 16>
Grant select on F1_EXT_LOOKUP_VAL to <GoldenGate owner user created
in step 16>
Grant select on F1_BKT_CONFIG to <GoldenGate owner user created in
step 16>
Grant select on F1_BKT_CONFIG_VAL to <GoldenGate owner user created
in step 16>

```

For **Oracle Utilities Operational Device Management** source database, execute the following grants:

```

Grant select on F1_MST_CONFIG to <GoldenGate owner user created in
step 16>
Grant select on F1_EXT_LOOKUP_VAL to <GoldenGate owner user created
in step 16>

```

For **Oracle Utilities Meter Data Management** source database, execute the following grants:

```

Grant select on <application ADM Schema>.F1_MST_CONFIG to
<GoldenGate Owner>;
Grant select on <application ADM Schema>.F1_EXT_LOOKUP_VAL to
<GoldenGate Owner>;

```

For **Oracle Utilities Work and Asset Management** source database, execute the following grants:

```

Grant select on <application ADM Schema>. F1_EXT_LOOKUP_VAL to
<GoldenGate Owner>;
Grant select on <application ADM Schema>.F1_MST_CONFIG to
<GoldenGate Owner>;
Grant select on <application ADM Schema>. F1_BKT_CONFIG to
<GoldenGate Owner>;
Grant select on <application ADM Schema>. F1_BKT_CONFIG_VAL to
<GoldenGate Owner>;

```

Note: While executing SQL commands in steps 15, 16, and 17, provide the GoldenGate owner user (if prompted for).

All the scripts mentioned below are located in GoldenGate Home directory and must be executed after connecting to the database as **sys user**.

18. Execute the following commands in the order listed:

```
@marker_setup.sql
@ddl_setup.sql
@role_setup.sql
```

19. Exit SQL*Plus.

20. In the Command window, create a directory “diroby” in the OGG_Home directory.

21. Change directory to the Oracle GoldenGate Home directory, and execute the following:

- a. Steps in [Configuring Encrypting Data Using ENCKEYS Method](#).
- b. Steps in [Generating Shared Secret Password](#).

Note: Execute these steps before running the Oracle Utilities Analytics installer. See <http://docs.oracle.com/goldengate/c1221/gg-winux/index.html> for more details.

Configuring Encrypting Data Using ENCKEYS Method

To configure for encrypting data with the ENCKEYS method:

1. Execute the following command:

```
cd <OGG_HOME>
keygen <encryption key length (in bits)> [number of keys to
generate]
```

The key value has to be copied to ENCKEYS file against a logical name.

2. For each key value generated above, provide a logical name (Logical name should not be the same for two different key values). Enter the logical name space and then key value in the ENCKEYS file.
3. Repeat the step above for each key values generated.
4. Save the file with name ‘ENCKEYS’ (upper case only) without any extension.

Example:

```
cd $OGG_HOME
./keygen 128 1
0x8CE55035DD6893205A7BD6773FA8E670
```

5. Open a new ASCII ENCKEYS file if it does not exist for adding a new entry or open an existing ENCKEYS text file to append.
6. Input the Logical name, space and key value generated.

Sample content of the ENCKEYS file:

```
CCB1KEY 0x8CE55035DD6893205A7BD6773FA8E670
```

7. The source ENCKEYS file entry has to be appended to the intermediate server or target server which would be configured with the source system where target OGG is being configured.

Note: It is recommended to provide a logical key name after <context_code>KEY.

For example: If context code is CCB1, it is recommended to name it as CCB1KEY.

Generating Shared Secret Password

To generate the shared secret password:

1. Execute the following command:

```
cd <OGG_HOME>
ggsci
ENCRYPT PASSWORD <GG Owner password> <algorithm> ENCRYPTKEY
<key_name>
```

Example:

```
cd $OGG_HOME
./ggsci
GGSCI (hostname) 1> ENCRYPT PASSWORD CCB01SRC AES128 ENCRYPTKEY
CCB1KEY
Encrypted password:
AADAAAAAAAAAAAAIAVGNHBFLLGFBTCVBFJFHUEJGNCFAOAFEOFBALELISFOEIFWGRB
ZHCCMCYGYBDAZH
Algorithm used: AES128
```

2. Note the above generated ENCKEYS file logical name/key value, algorithm name used, and the generated encrypted password.

Setting up Oracle GoldenGate on Target Database Server

To set up Oracle GoldenGate on the target database server:

1. Create a directory on the target database server.

For example: ../GoldenGateHome

Oracle GoldenGate should be installed in this directory. It is **Oracle GoldenGate Home (OGG_Home)** on the target Oracle Utilities Analytics database server.

Note: Ensure to note down the directory location; it will be used in the Oracle Utilities Analytics installation.

2. Install Oracle GoldenGate and provide the GoldenGate Home location as the directory location created in the step 1.
3. In the Command window, set the target ORACLE_SID and ORACLE_HOME variables.

Set LD_LIBRARY_PATH.

In UNIX:

```
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
```

4. In the Command window, change the directory to **GoldenGate Home** and execute the following command:

In UNIX:

```
./ggsci
```

The Oracle GoldenGate prompt is shown.

5. At the prompt, execute the following commands:

```
create SUBDIRS
start mgr
info all
exit
```

6. Create a directory “diroby” in the OGG_Home directory.

7. Connect to the target database as **sys user** and execute the following command:


```
alter system set enable_goldengate_replication=TRUE scope=both;
```
8. In the Command window, navigate to the Oracle GoldenGate Home (OGG_Home) directory.
9. Edit the GLOBALS file in the <GG home> directory and add the following command.:


```
EnableMonitoring
```
10. Navigate to the Oracle GoldenGate home (OGG_Home) directory.
11. If the ENCKEYS file does not exist, follow these steps:
 - a. Create and open a new ASCII ENCKEYS file.
 - b. Add the key value/values that are generated on the sources to the ENCKEYS file in target OGG home. This is done for the context codes for which source is configured.

A sample ENCKEYS file in target OGG home is as below:

```
CCB1KEY 0x8CE55035DD6893205A7BD6773FA8E670
```

Setting up Oracle GoldenGate Monitor JAgent on Target and Source Database Servers

Set up Oracle GoldenGate Monitor (OGG) JAgent on Oracle Utilities Analytics GoldenGate server and on all the source application GoldenGate servers. The OGG Monitor JAgent is used to automatically copy the generated OGG scripts to both source and target GoldenGate Home directories, and to start the extract and replicate processes on source and target.

To setup OGG Monitor JAgent on both target and source database servers:

1. Ensure Oracle GoldenGate is installed and Manager is running.
2. Start the rmiregistry services.


```
rmiregistry 5559 &
```

Ensure to note down the port on which RMI server is started. The port number specified here is 5559. If it is not specified, the default port 1099 will be used.
3. Install Fusion Middleware Infrastructure.
4. Run the OGG Monitor 12.2.1 installer.
 - a. Set Oracle Home to the location where Fusion Middleware Infrastructure was installed in step 2.
 - b. Choose installation type as OGG Monitor Agent.
5. Edit the Config.properties file in the <OGG Monitor home>/oggmon/ogg_agent/cfg_templates and add/modify the below parameters.

```
<ACTUAL>      : jagent.host=localhost
<CHANGE TO>   : jagent.host=<<actual hostname on which OGG is
installed>>

<ACTUAL>      : monitor.jmx.username=cmroot
<CHANGE TO>   : monitor.jmx.username=jmx_src

<ACTUAL>      : jagent.username=root
<CHANGE TO>   : jagent.username=<<OGG software installed OS user>>

<ACTUAL>      : jagent.rmi.port=5559
<CHANGE TO>   : jagent.rmi.port=5557 or any free port other than the
one on which the rmiregistry is started
```

```

<ACTUAL>      : agent.type.enabled=OGGMON
<CHANGE TO>   : agent.type.enabled=OEM
<ACTUAL>      : jagent.backward.compatibility=true
<CHANGE TO>   : jagent.backward.compatibility=false

```

6. Add the following parameter:

```
jagent.ssl=false
```

7. Navigate to <OGG Monitor home>/oggmon/ogg_agent directory and run the following command:

In UNIX:

```

export JAVA_HOME=<JDK home>
./createMonitorAgentInstance.sh

```

- a. You will be prompted to enter:

- Oracle GoldenGate home directory.
- Path to be used for Oracle GoldenGate Monitor Agent instance.

It is recommended to provide a path (such as <OGG Monitor home>/Agents/OGGMonitorInstance).

- A unique name to replace the timestamp in the name of the file used to start GG Monitor agent instance.

Provide a unique name to be used for this Oracle GoldenGate Monitor instance.

- b. Execute the command below from <path used for Oracle GoldenGate Monitor instance provided in the step above>/bin.

Example location: <OGG Monitor home>/Agents/OGGMonitorInstance/bin

In UNIX:

```

export JAVA_HOME=<JDK home>
./pw_agent_util.sh -jagentonly

```

8. Enter the Oracle wallet password.

This password has to be entered as the password for the JAGENT while running the installer (for target gg), and while running the source configuration (for source gg).

Ensure to note the password and jagent.rmi.port value (JAgent Port). This information is required in subsequent installation.

9. Create a folder with the Context_code name in <GG Home>/dirdat.

For example: If WAM2 is created for the WAM source, then create a folder with name “WAM2” within the <GG Home>/dirdat/ folder.

10. Create a folder with name <GG Home>/diroby.

11. Navigate to <GG Home>/dirprm and edit jagent.prm file.

Replace COMMAND java with COMMAND <JDK Home>/bin/java.

This ensures that the correct version of java (1.8) is used while starting JAgent.

12. Navigate to OGG_Home directory and go to the GoldenGate prompt:

```
ggsci
```

13. Start the jAgent process using the following command:

```
start jagent
```

The logs for JAgent are created at the following (example) location.

```
<OGG Monitor home>/Agents/OGGMonitorInstance/logs
```

Recommended Oracle GoldenGate Parameter Settings

The recommended Oracle GoldenGate parameter settings are as follows:

1. Update the source <Source GG Home>/dirprm/mgr.prm file.

```
AUTORESTART EXTRACT <Context Code>*, RETRIES 5, WAITMINUTES 2,
RESETMINUTES
60
PURGEOLDEXTRACTS dirdat/<Context Code>/*, USECHECKPOINTS,
MINKEEPHOURS 4
DOWNCRITICAL
```

2. Update the Target <Target GG Home>/dirprm/mgr.prm file with the following:

```
AUTORESTART REPLICAT <Context Code>*, RETRIES 5, WAITMINUTES 2,
RESETMINUTES
60
PURGEOLDEXTRACTS dirdat/<Context Code>/*, USECHECKPOINTS,
MINKEEPHOURS 4
DOWNCRITICAL
```

3. Restart the mgr process after the changes mentioned above are complete.

The following parameters are optional and depend on the level of alerts required for the environment.

For Oracle Utilities Network Management System sources:

- DOWNREPORTMINUTES 2 - Report any downtime more that 2 minutes
- LAGCRITICALMINUTES 2 - Report any lag > 2 minutes as critical
- LAGINFOSECONDS 30 - Report any lag > 30 seconds as warning
- LAGREPORTMINUTES 1 - Log lag information every minute

For other sources:

- DOWNREPORTMINUTES 10 - Report any downtime more that 10 minutes
- LAGCRITICALMINUTES 10 - Report any lag > 10 minutes as critical
- LAGINFOMINUTES 5 - Report any lag > 5 seconds as warning
- LAGREPORTMINUTES 5 - Log lag information every 5 minutes

Copying and Decompressing Install Media

To download and decompress the install media, perform these steps:

1. Download Oracle Utilities Analytics Patchset package from My Oracle Support (<https://support.oracle.com>).

2. Create a temporary directory, such as /OUA/temp (referred to <TEMPDIR> below). This directory must be located outside any current working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.
3. Unzip Oracle Utilities Analytics Patchset package to <TEMPDIR>.

Starting the Installer

Important! In an AIX operating system, set the following environment variable before starting the Oracle Utilities Analytics installation.

```
export IBM_JAVA_OPTIONS="-Xmx2g -XX:PermSize=64m -
XX:MaxPermSize=3200m"
```

To start the Oracle Data Integrator Based ELT component:

1. Go to the temporary folder containing the installer.
2. Run the following command from this folder:

```
java -jar <TEMPDIR>/OUA_2.7.0.0.<PS number>_generic.jar -logLevel
finest
```

Note: The minimum JDK required for running the Oracle Utilities Analytics installer is JDK 1.8.

The **Welcome** page appears.

3. Review this information before you begin the installation. Click **Next** to continue with the installation.
4. Complete the tasks on the navigation pane.

Each item in the navigation pane represents a specific installer screen that prompts you for information required to install the software.

- If you select **Oracle Data Integrator Based ETL** as an **Installation Type**, define the following:
 - Database and Java Home Details
 - Target Database Connection Details
 - Oracle Data Integrator Home and Schema Details
 - Oracle Data Integrator Agent and Repository Details
 - Target GoldenGate Details
 - Target JAgent Details
- If you select **Dashboard** as an **Installation Type**, define the following:
 - Database and Java Home Details
 - Target Database Connection Details
 - OBIEE Home Details
- If you select both **Oracle Data Integrator Based ETL** and **Dashboard** as an **Installation Type**, define the following:
 - Database and Java Home Details
 - Target Database Connection Details
 - Oracle Data Integrator Home and Schema Details

- Oracle Data Integrator Agent and Repository Details
- Target GoldenGate Details
- Target JAgent Details
- OBIEE Home Details

Installation Steps

To install Oracle Data Integrator Based ETL:

1. Run the Oracle Utilities Analytics Installer. The **Welcome** page appears.
2. Review the information before you begin the installation. Click **Next** to continue with the installation.

The **Installation Location** page appears.

3. Define the **Installation Location** and click **Next**.

Note: The specified Oracle home directory must be an empty directory.

The **Select Installation Type** page appears.

4. In the **Select Installation Type** page, select **ODI Based ETL** and click **Next**.

Note: Based on the selected installation type, the options on the left navigation panel change.

5. Select **Oracle Data Integrator Based ETL** as an **Installation Type**. Define the following:

- Database and Java Home Details
- Target Database Connection Details
- Oracle Data Integrator Home and Schema Details
- Oracle Data Integrator Agent and Repository Details
- Target GoldenGate Details

6. On the **Database and Java Home Details** page, enter the following details in the respective fields and click **Next**.

Field Name	Description	Value
Database Client Home	Database client home location	Example: /u01/app/product/12.1.0/ dbhome_1
Java Home	JDK home location	Provide location of JDK 1.8 Example: /u01/jdk_1.8.0_77

7. On the **Target Database Connection Details** page, enter the following details in the respective fields and click **Next**.

Field Name	Description	Value
Host	Host name of the server where the database resides	Oracle Utilities Analytics Database Server

Field Name	Description	Value
Port	Database port number on the database server used for connecting to the database	Oracle Utilities Analytics Database Port. The default value is 1521.
Service Name	Service name for the database	
Target Schema Password	Password for the target schema (DWADM)	
Confirm Target Schema Password	Confirm password for the target schema (DWADM)	
Metadata Schema Password	Password for the metadata schema (MDADM)	
Confirm Metadata Schema Password	Confirm password for the metadata (MDADM) schema	

8. On **ODI Home and Schema Details** page, enter the following details in the respective fields. Click **Next**.

Field Name	Description	Value
ODI Home	Directory where Oracle Data Integrator (ODI) is installed	Example: /u01/Middleware/Oracle_ODI1
Supervisor User	Name of the Oracle Data Integrator Supervisor	SUPERVISOR
Supervisor Password	Password of the Oracle Data Integrator Supervisor	SUPERVISOR user password
Confirm Supervisor Password	Confirm password of the Supervisor	
Master Repository Schema Name	Oracle Data Integrator master repository schema name	OUA_MASTER
Master Repository Schema Password	Password of the master repository schema	OUA_MASTER user's password
Confirm Master Repository Schema Password	Confirm password of the Oracle Data Integrator master repository schema	
Work Repository Schema Name	Oracle Data Integrator work repository schema name	OUA_WORK
Work Repository Schema Password	Work repository schema password	OUA_WORK user's password
Confirm Work Repository Schema Password	Confirm password of Oracle Data Integrator work repository schema	

9. On the **ODI Agent and Details** page, enter the following details in the respective fields. Click **Next**.

Field Name	Description	Value
ODI Agent Host	Host where Oracle Data Integrator WebLogic Domain is created	Oracle Data Integrator Server host name.
ODI Agent Port	Port on which Oracle Data Integrator WebLogic agent is configured to run. This is the Oracle Data Integrator WebLogic Managed Server port.	Provide available port and ensure to use the same port while creating Oracle Data Integrator managed server.

10. On the **Target GoldenGate Details** page, enter the following details in the respective fields. Click **Next**.

Field Name	Description	Value
GoldenGate Host	Oracle GoldenGate Manager host	
GoldenGate Home	Location where Oracle GoldenGate is installed	Example: /opt/local/ggs_12.2.0.1.1
Target Database Home	Location where database home is installed on the target database server. If GoldenGate for target is not installed on the Oracle Utilities Analytics database server, provide oracle client home location on the server on which GoldenGate is installed.	Example: /u00/oracle/app/oracle/product/12.1.0/dbhome_1
GoldenGate Manager Port	The port number on which Oracle GoldenGate Manager is running on the GoldenGate host.	The default value is 7830.
GoldenGate Algorithm	The algorithm configured in Oracle GoldenGate on the target database server.	The default value is BLOWFISH.
GoldenGate Encryptkey	The Encrypt Key configured in Oracle GoldenGate on the target database server.	The default value is "DEFAULT".

Field Name	Description	Value
GoldenGate Shared Secret	Shared secret key configured in Oracle GoldenGate on the target database server.	Go to the Oracle GoldenGate prompt and run the command: <i>encrypt password <password of MDADM user>, encryptkey DEFAULT</i> Provide the result of above command as the value.

11. On the **Target JAgent Details** page, enter the target server JAgent details in the respective fields. Click **Next**.

Field Name	Description	Value
JAgent Host	Oracle GoldenGate Monitor JAgent host	
JAgent GoldenGate	Oracle GoldenGate installed location where GoldenGate Monitor JAgent is running	Example: <i>/opt/local/ggs_12.2.0.1.1</i>
JAgent Port	Use the JAgent RMI port (5557) defined in the config properties file	
JAgent User	OS user used to configure JAgent	
JAgent Wallet Password	JAgent Wallet password	
Confirm JAgent Wallet Password	Re enter JAgent Wallet password to confirm	

12. On the **Installation Summary** page, verify the installation options selected.
13. Click **Install** to begin the installation.

To change any configurations before starting the installation, use the navigation pane and select the topic to edit.

The **Installation Progress** page appears displaying the progress of the installation. Operations being performed as a part of the installation are logged to the terminal from which the installer was run. The detailed logs of the installation are also available in the logs/system directory under the installation location.

To quit before the installation is complete, click **Cancel**. Doing so will result in a partial installation; the portion of the software that was installed on your system before you click **Cancel** will remain on your system, and you will have to remove it manually.

14. On the **Installation Completed** page, click **Finish** to close the installer.

The Oracle Data Integrator based ETL is now installed.

Note: To configure source, refer to the **Chapter 5: Configuring Oracle Utilities Analytics** in *Oracle Utilities Analytics Administration Guide*.

Creating a Database Directory

Create a database directory 'B1_DATA_DUMP_DIR' on the target database, as well as on each source database. This directory is used for logging the export import task used during the initial ELT load.

The following is a sample SQL that creates the database directory pointing to the file system path /scratch/file_data:

```
CREATE DIRECTORY B1_DATA_DUMP_DIR AS '/scratch/file_data';
```

Configuring Oracle Data Integrator Repository Creation Utility (RCU)

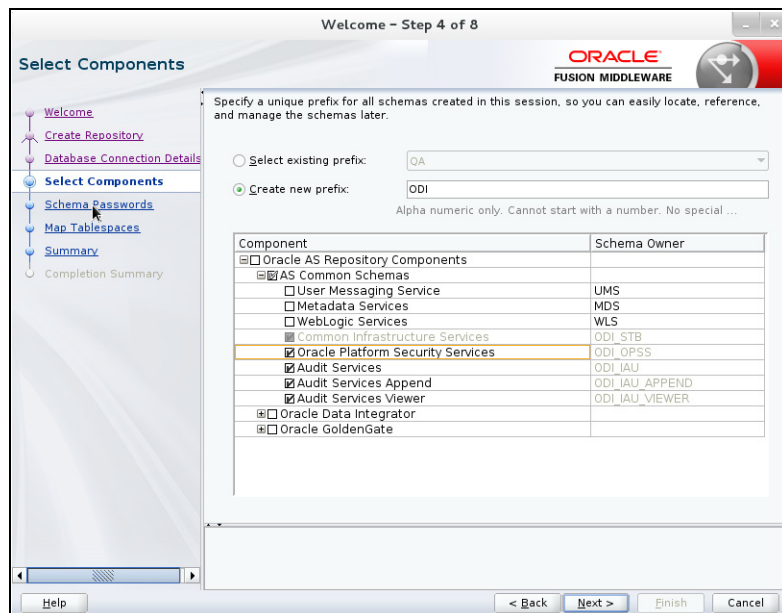
To configure the Oracle Data Integrator Repository Creation Utility, follow these steps:

1. Ensure RCU for ODI is run and the required schemas are created in the target database.
ODI_ORACLE_HOME is an Oracle Home path used as Oracle Home while installing FMW Infrastructure and Oracle Data Integrator (ODI).
2. Set or export JAVA_HOME variable to the 1.8.0_77+ installed directory.
3. Go to \$ODI_ORACLE_HOME/oracle_common/bin.
4. Execute the RCU utility.

For example:

```
export JAVA_HOME=/scratch/bi_oradata_01/jdk1.8.0_77
cd /scratch/bi_oradata_01/Middleware_ODI_12.2.1_EE/Oracle_Home/
oracle_common/bin
./rcu
```

5. In the Repository Creation Utility, select **Create Repository > System Load and Product Load** option.
6. On the page, provide the database connection details.
7. On the **Select Components** page, the options are shown as below. De-select the Oracle Data Integrator component.



- In the next page, make a note of or remember the password given. It will be required while creating the Oracle Data Integrator domain.

Note that a new script to create the ODI domain is described in the [Creating WebLogic Domain for Oracle Data Integrator Agent](#) section. This utility assumes that the same password is used for all RCU schemas. The assumption was made to keep the inputs to the domain creation script simple.

It is not required to create the Oracle Data Integrator domain at this stage. It should be done after running the Oracle Utilities Analytics installer and before running source configuration tool.

Creating WebLogic Domain for Oracle Data Integrator Agent

Create the WebLogic Domain to bring up the WebLogic Agent (ODI Agent) to complete the steps. In this product release, ODI Domain creation is automated, and creation of both clustered and non-clustered domain is supported.

- [Creating a Non-Clustered Domain](#)
- [Creating a Clustered Domain](#)

Note: The following procedures assume that the pre-requisite Java 8/bin is in the PATH variable.

Creating a Non-Clustered Domain

To create a non-clustered domain:

Note: The password fields' values (RCUSCHEMAPWD,WEBLOGIC_PASSWORD) will be cleared from ODI_CONFIG.properties after executing createDomain.sh or createMachine.sh. Ensure these fields are updated for each invocation of createDomain.sh or createMachine.sh.

- Navigate to the <OUA Environment>/etc directory and provide the following properties in the ODI_CONFIG.properties file.

Property	Description
Mandatory fields	
DOMAIN_PATH	For example: C:/odi12.2.1.3/odi12.2.1.3_home/user_projects/domains/odi_domain5
RCUPREFIX	Repository prefix created in the Configuring Oracle Data Integrator Repository Creation Utility (RCU) section.
RCUSCHEMAPWD	Repository schema password provided in the Configuring Oracle Data Integrator Repository Creation Utility (RCU) section.
WEBLOGIC_USERNAME	WebLogic user name for ODI domain
WEBLOGIC_PASSWORD	WebLogic password for ODI domain
ODI_DBSERVER	ODI database server name (target database server)
ODI_DBPORT	ODI database port (target database port)
ODI_DBNAME	ODI database name (target database name)

Property	Description
ADMIN_PORT	ODI domain admin port
ODI_DOMAIN_HOSTNAME	Host name on which the ODI domain is created
Optional fields	
NONSSL_PORT	If not specified, default port 7001 will be assigned.
MANAGED_SERVER_PORT	If not specified, default port 15101 will be assigned.

- Navigate to the <OUA Environment>/bin directory and invoke the **createDomain.sh** script.

Refer to the [Starting the WebLogic Admin Server](#) and [Starting the Managed Server \(ODI_server1\)](#) sections to start the Admin server and Managed server.

Creating a Clustered Domain

To create a clustered domain, follow the steps below:

Note: The password fields' values (RCUSCHEMAPWD,WEBLOGIC_PASSWORD) will be cleared from ODI_CONFIG.properties after executing createDomain.sh or createMachine.sh. Ensure these fields are updated for each invocation of createDomain.sh or createMachine.sh.

- Navigate to the <OUA Environment>/etc directory and provide the following properties in the ODI_CONFIG.properties file.

Property	Description
Mandatory fields	
DOMAIN_PATH	For example: C:/odi12.2.1.3/odi12.2.1.3_home/user_projects/domains/odi_domain5
RCUPREFIX	Repository prefix created in the Configuring Oracle Data Integrator Repository Creation Utility (RCU) section.
RCUSCHEMAPWD	Repository schema password provided in the Configuring Oracle Data Integrator Repository Creation Utility (RCU) section.
WEBLOGIC_USERNAME	WebLogic user name for ODI domain
WEBLOGIC_PASSWORD	WebLogic password for ODI domain
ODI_DBSERVER	ODI database server name (target database server)
ODI_DBPORT	ODI database port (target database port)
ODI_DBNAME	ODI database name (target database name)
ADMIN_PORT	ODI domain admin port

Property	Description
ODI_DOMAIN_HOSTNAME	Host name on which the ODI domain is created
CLUSTER_NAME	Additional mandatory field for clustered domain

- Navigate to the <OUA Environment>/bin directory and invoke the **createDomain.sh** script.

This creates an ODI domain with an Admin server and a Managed server (as 'ODI_server1') and assigned to the cluster.

Refer to the [Starting the WebLogic Admin Server](#) and [Starting the Managed Server \(ODI_server1\)](#) sections to start the Admin server and Managed server.

To create another managed server and add it to the cluster:

- Bring up the Admin server.
- Navigate to the <OUA Environment>/etc directory and provide the following mandatory properties in the ODI_CONFIG.properties file:
 - MANAGED_SERVER_NAME
 - MANAGED_SERVER_PORT
- Provide the following optional properties in the ODI_CONFIG.properties file:
 - MACHINE_NAME
 - MACHINE_PORT
- Navigate to <OUA_Environment>/bin and invoke createMachine.sh/cmd.

A new managed server is created with the specified name and assigned to the cluster.

Refer to the sections [Starting the WebLogic Admin Server](#) and [Starting the Managed Server \(ODI_server1\)](#) to start the Admin server and Managed server.

Starting the WebLogic Admin Server

To start the WebLogic Admin server, perform the following steps:

- In the command shell, change the directory to the directory of the WLS Home.

```
<MW_HOME>/user_projects/domains/<ODI_DOMAIN_NAME>/bin
```

- Execute the startweblogic command:

In UNIX:

```
nohup ./startWebLogic.sh > startWebLogic.log &
```

Starting the Managed Server (ODI_server1)

To start the odi_server1 managed server:

- Change to <MW_HOME>/user_projects/domains/<ODI_DOMAIN_NAME>/servers/ODI_server1/security/.
- Create boot.properties file. Enter the username and password in the respective fields in the file. Save the file.

Below is an example of the boot.properties file:

```
username=<weblogic username>
password=<weblogic password>
```

3. Change the directory to WLS Home to start odi_server1:

In UNIX:

```
<MW_HOME>/user_projects/domains/<ODI_DOMAIN_NAME>/bin
```

```
nohup ./startManagedWebLogic.sh odi_server1 >
StartManagedWebLogic.log &
```

4. In the Oracle Data Integrator Studio, navigate to **Topology > Agents > OracleDIAgent**.
5. Right-click **OracleDIAgent** and click **Test** to test the connectivity of the configured Oracle Data Integrator Java EE agent.

Installing Oracle Utilities Analytics Administration Component

Oracle Utilities Analytics Administration Tool is an Oracle Application Express (APEX) based configuration tool used to configure Oracle Utilities Analytics.

This section describes how to install the tool to configure Oracle Utilities Analytics and change the default password of the Admin user.

- [Installation Steps](#)
- [Changing Default Password of the Admin User](#)

Note: Install Oracle Utilities Analytics Administration component on the Oracle Utilities Analytics database server.

Installation Steps

To install the Oracle Utilities Analytics Administration Tool, follow these steps:

1. Download Apex 5.0.4 to the database server under the /temp directory. Then unzip the file.

```
cd /temp/apex
```

2. Connect to the Oracle Utilities Analytics database as the **sys user** and execute the following commands:

```
@apxremov.sql
@apxrtins <Tablespace name> <Tablespace name> <Temp Tablespace
name> /i/
```

For example, @apxrtins CISTS_01 CISTS_01 TEMP /i/

```
@apxchpwd.sql
ALTER USER APEX_PUBLIC_USER ACCOUNT UNLOCK;
ALTER USER APEX_PUBLIC_USER IDENTIFIED BY APEX_PUBLIC_USER;
@apex_rest_config.sql
```

Note: Ensure to note down the passwords for APEX_Listener user and APEX_REST_PUBLIC_USER.

3. Import the tool to configure Oracle Data Integrator:
 - a. Unzip the Oracle Utilities Analytics Patchset package zip file. The file includes the AdminTool folder inside Application folder.

- b. Create the `../AdminTool` directory on the database server and copy the contents of the `AdminTool` directory (from the zip file) to this directory.
- c. Navigate to the `../AdminTool` directory. (`cd ../AdminTool`).
- d. Connect as the **sys user** and execute the following scripts:
 - To create workspace and configure the users:
`@CreateAppWorkspace.sql`
 - To import application:
`@DeployAdminApp.sql`
 - To deploy supporting objects:
`@DeploySupportingObjects.sql`
4. Download Apex 5.0.4 to the server where you want to set up the tool (under `/scratch/bi_oradata_01/Softwares/apex_5.0.4` directory).

Note: Create `/scratch/bi_oradata_01/Softwares/apex_5.0.4` directory if it does not exist.
5. Download Oracle Rest Data service 3.0.6 to the server where you want to set up the Administration Tool (under `/scratch/bi_oradata_01/Softwares/apex_listner` directory).

Note: Create `/scratch/bi_oradata_01/Softwares/apex_listner` directory if it does not exist.
6. Navigate to the `scratch/bi_oradata_01/Softwares/apex_listner` directory and unzip the `ords` zip file.

```
cd /scratch/bi_oradata_01/Softwares/apex_listner
```
7. Navigate to the `cd /scratch/bi_oradata_01/Softwares/apex_5.0.4` directory and unzip the `apex_5.0.4_en.zip` file.

```
cd /scratch/bi_oradata_01/Softwares/apex_5.0.4
```
8. Create a directory on the server to configure Apex.

For example: `mkdir/scratch/bi_oradata_01/apex_configuration`
9. Navigate to the `/scratch/bi_oradata_01/Softwares/apex_listner` directory:

```
cd /scratch/bi_oradata_01/Softwares/apex_listner
```
10. Execute the following command:

```
java -jar ords.war install advanced
```

Note: Use JDK1.8 to execute the command.

Provide the necessary inputs as shown below:

```

bash-4.1$ java -jar ords.war install advanced
This Oracle REST Data Services instance has not yet been configured.
Please complete the following prompts

Enter the location to store configuration data:/scratch/bi_oradata_01/apex_configuration
Enter the name of the database server [localhost]:
Enter the database listen port [1521]:
Enter 1 to specify the database service name, or 2 to specify the database SID [1]:
Enter the database service name:
Enter 1 if you want to verify/install Oracle REST Data Services schema or 2 to skip this step [1]:
Enter the database password for ORDS_PUBLIC_USER:
Confirm password:

Please login with SYSDBA privileges to verify Oracle REST Data Services schema. Installation may be required.

Enter the username with SYSDBA privileges to verify the installation [SYS]:sys
Enter the database password for sys:
Confirm password:
Jun 22, 2015 2:08:51 AM oracle.dbtools.rt.config.setup.SchemaSetup addSchemaParams
INFO:
Oracle REST Data Services schema does not exist and will be created.

Enter the default tablespace for ORDS_METADATA [SYSAUX]:
Enter the temporary tablespace for ORDS_METADATA [TEMP]:
Enter the default tablespace for ORDS_PUBLIC_USER [USERS]:
Enter the temporary tablespace for ORDS_PUBLIC_USER [TEMP]:
Enter 1 if you want to use PL/SQL Gateway or 2 to skip this step [1]:
Enter the PL/SQL Gateway database user name [APEX_PUBLIC_USER]:
Enter the database password for APEX_PUBLIC_USER:
Confirm password:

```

```

Enter 1 to specify passwords for Application Express RESTful Services database users (APEX_LISTENER, APEX_REST_PUBLIC_USER) or 2 to skip
this step [1]:
Enter the database password for APEX_LISTENER:
Confirm password:
Enter the database password for APEX_REST_PUBLIC_USER:
Confirm password:
Jun 22, 2015 2:09:36 AM oracle.dbtools.common.config.file.ConfigurationFilesBase update
INFO: Updated configurations: defaults, apex_pu, apex, apex_sl, apex_rt
Jun 22, 2015 2:09:36 AM oracle.dbtools.installer.Installer installORDS
INFO:
Installing Oracle REST Data Services version 3.0.0.121.10.23
... Log file written to /scratch/bi_oradata_01/Softwares/apex_listner/logs/ordsinstall_2015-06-22_020936_00353.log
... Verified database prerequisites
... Created Oracle REST Data Services schema
... Granted privileges to Oracle REST Data Services
... Created Oracle REST Data Services database objects
... Created Oracle REST Data Services proxy user
Jun 22, 2015 2:09:48 AM oracle.dbtools.installer.Installer installORDS
INFO: Completed installation for Oracle REST Data Services version 3.0.0.121.10.23. Elapsed time: 00:00:12.203
Enter 1 if you wish to start in standalone mode or 2 to exit [1]:2

```

11. Navigate to the `/scratch/bi_oradata_01/Softwares/apex_listner` directory:

```
cd /scratch/bi_oradata_01/Softwares/apex_listner
```

12. Execute the following command:

```
java -jar ords.war static /scratch/bi_oradata_01/Softwares/
apex_5.0.4/apex/images
```

Note: The command creates `i.war` file.

13. Create the WebLogic domain.

- a. Navigate to `<Middleware Home>/Weblogic_12.2.1_Home/oracle_common/common/bin`.

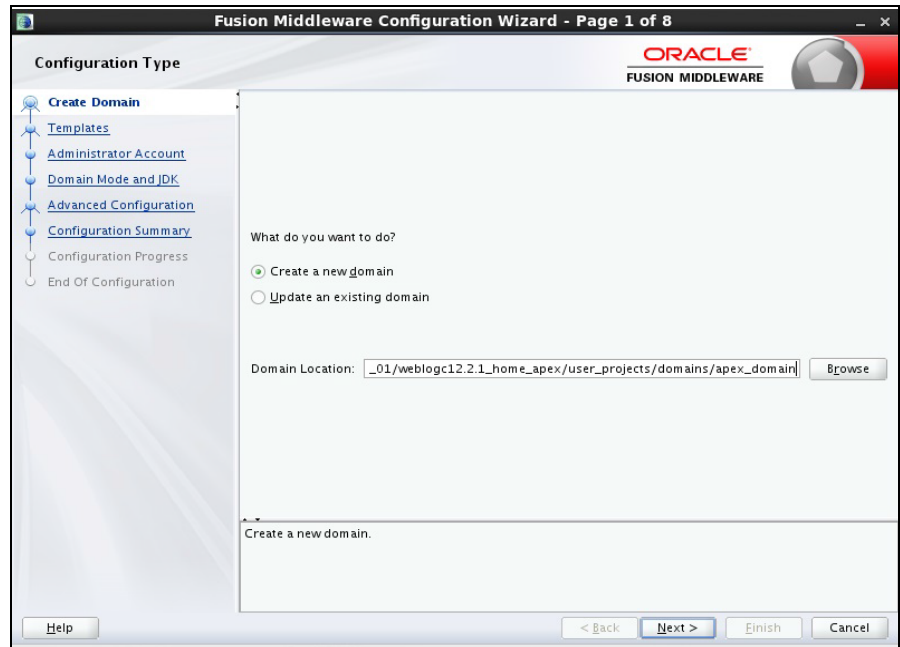
```
cd <Middleware Home>/Weblogic_12.2.1_Home/oracle_common/common/
bin
```

- b. Execute the following command:

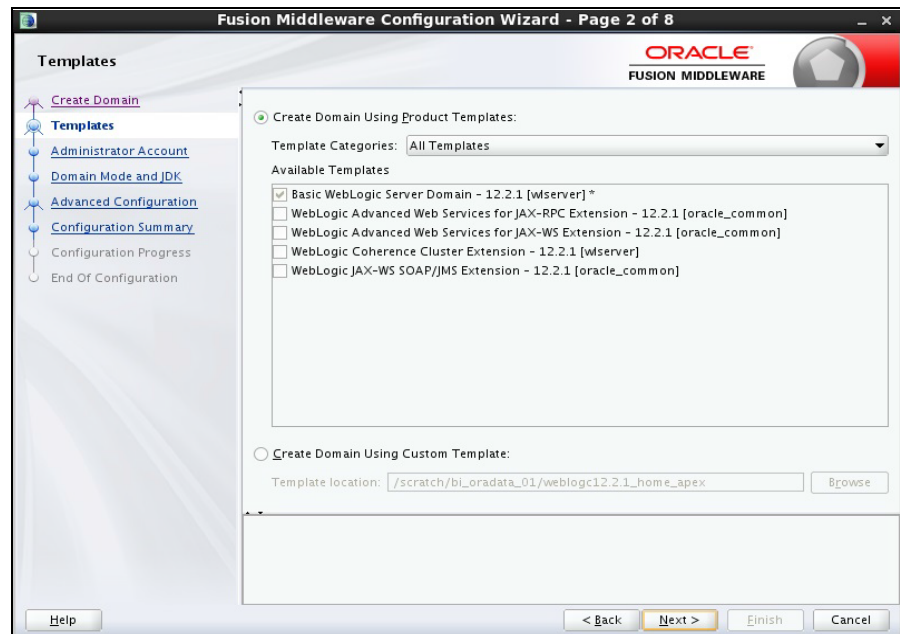
```
./config.sh
```

The **Fusion Middleware Configuration Wizard** window appears.

- a. Select **Create a new WebLogic domain** and click **Next**.



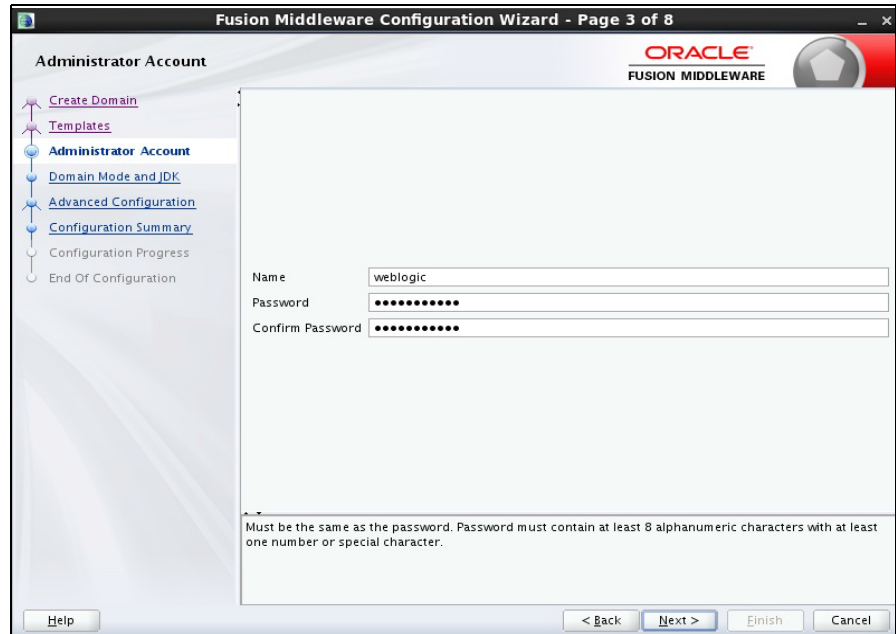
- b. Provide the domain name.



Ensure you do not change the domain location.

Click **Next**.

- c. Provide the WebLogic User Password. Ensure you make a note of the password.

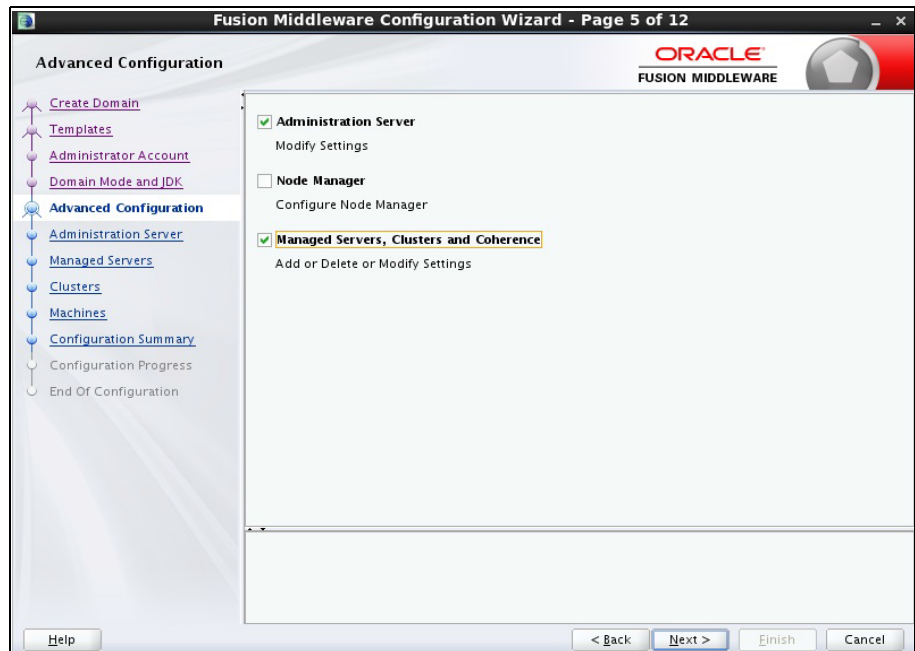


The screenshot shows the 'Administrator Account' configuration step in the Fusion Middleware Configuration Wizard. The wizard is titled 'Fusion Middleware Configuration Wizard - Page 3 of 8'. The Oracle logo and 'FUSION MIDDLEWARE' text are visible in the top right corner. On the left, a navigation pane lists the steps: 'Create Domain', 'Templates', 'Administrator Account' (selected), 'Domain Mode and JDK', 'Advanced Configuration', 'Configuration Summary', 'Configuration Progress', and 'End Of Configuration'. The main area contains three input fields: 'Name' with the value 'weblogic', 'Password' with masked characters, and 'Confirm Password' with masked characters. Below the fields, a note reads: 'Must be the same as the password. Password must contain at least 8 alphanumeric characters with at least one number or special character.' At the bottom, there are buttons for 'Help', '< Back', 'Next >', 'Finish', and 'Cancel'.

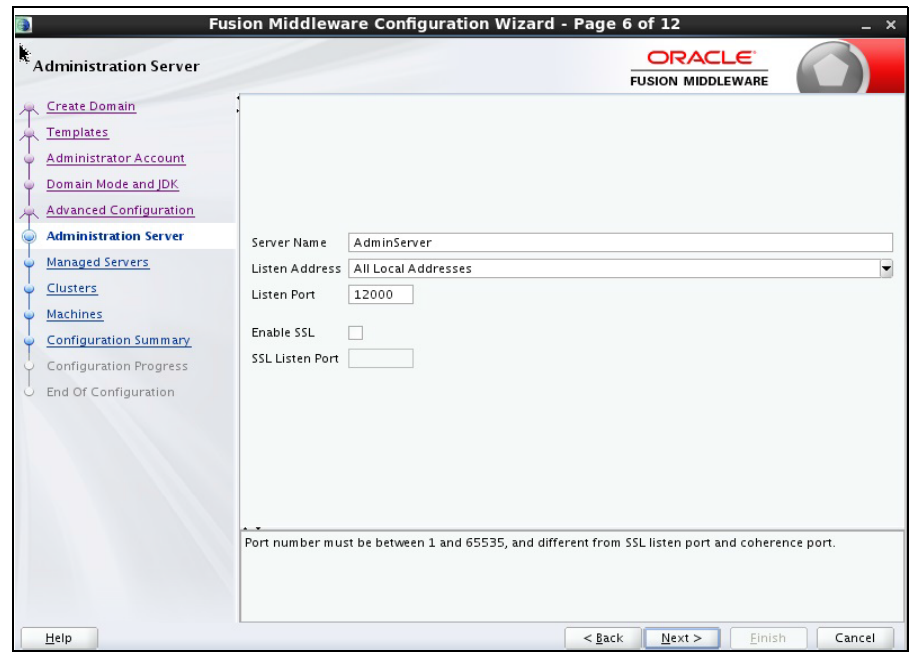
Click **Next**.

- d. Select `jdk1.8` and click **Next**.

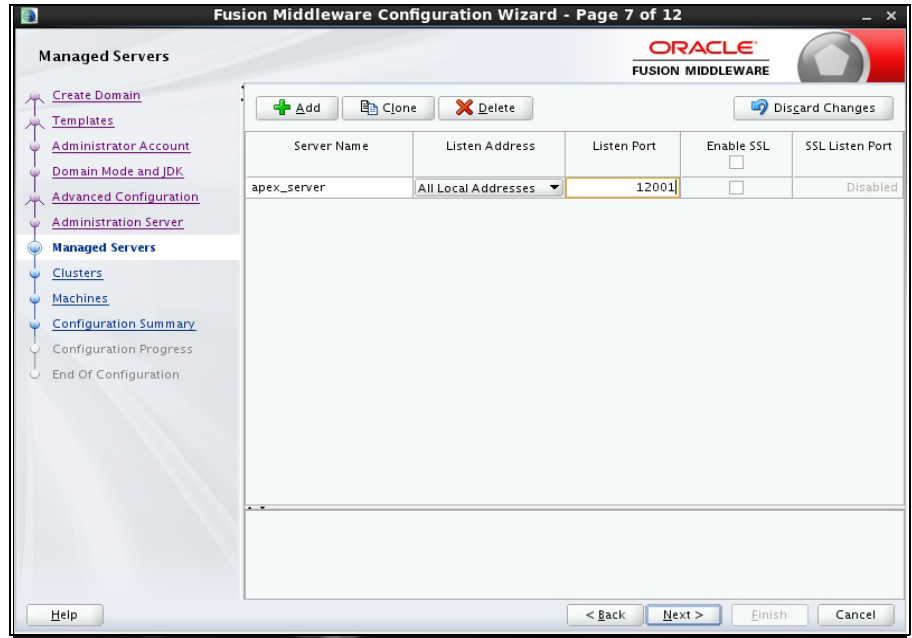
- e. Select the **Administration Server**, **Managed Servers**, **Clusters** and **Machines** options. Then, click **Next**.



- f. Provide the **Listen Port** as available port. Click **Next**.



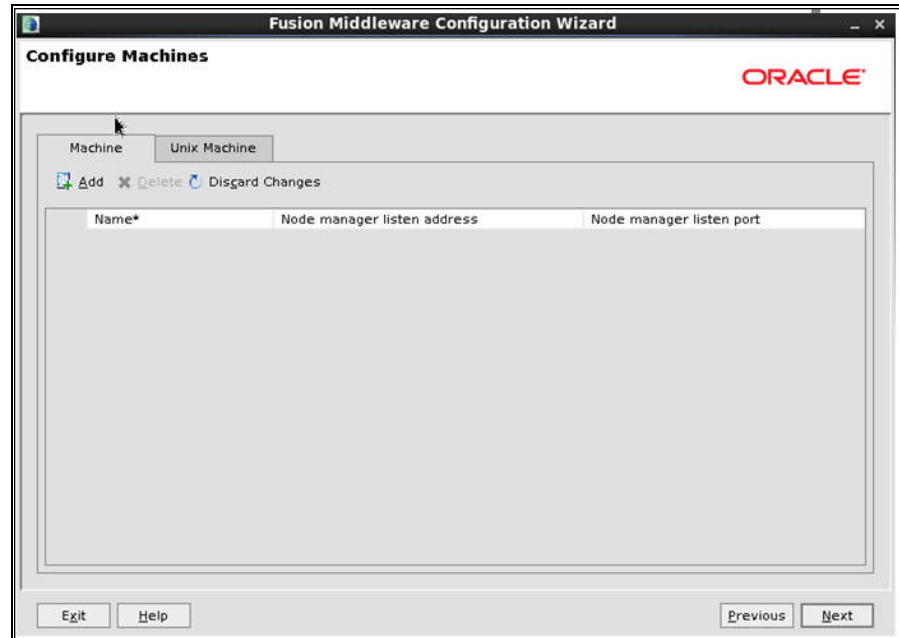
g. Click **Add** and provide values as shown below:



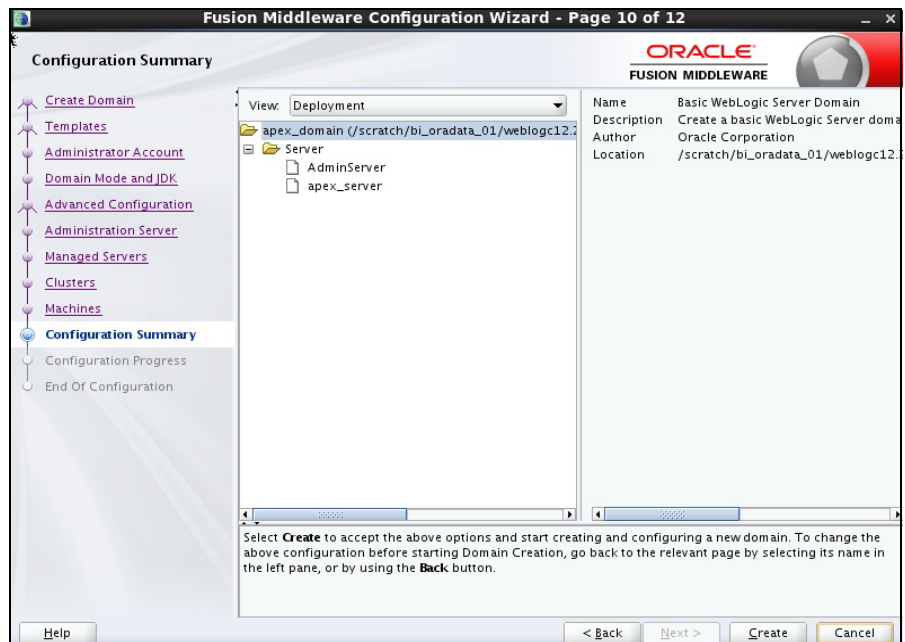
Click **Next**.



- i. On the Configure Machines page, click **Next**.

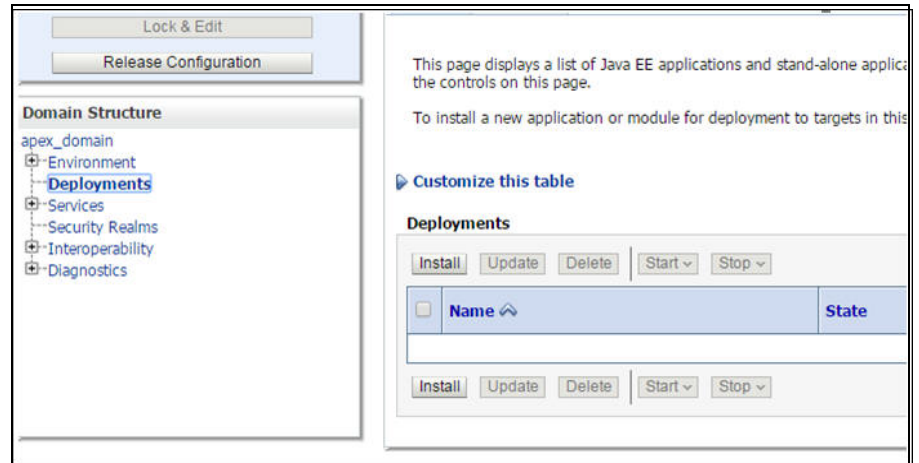


- j. On the Configuration Summary page, click **Next**.



14. Create the **boot.properties** file.
15. Start the Admin and Managed server.

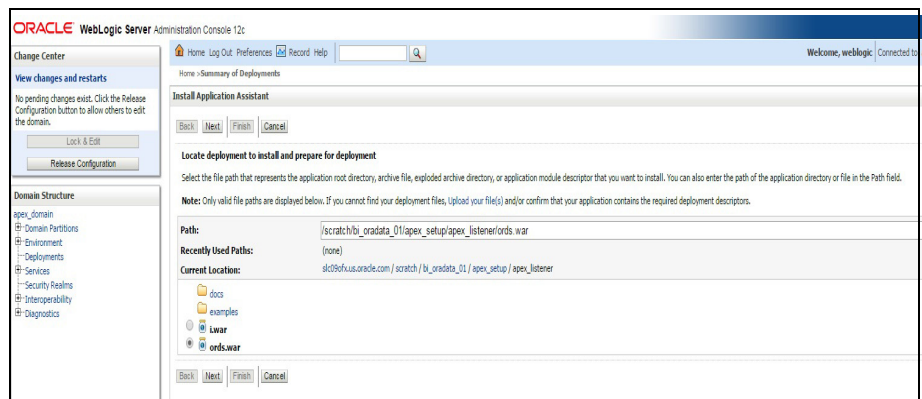
16. Login to WebLogic console and click **Lock & Edit**.



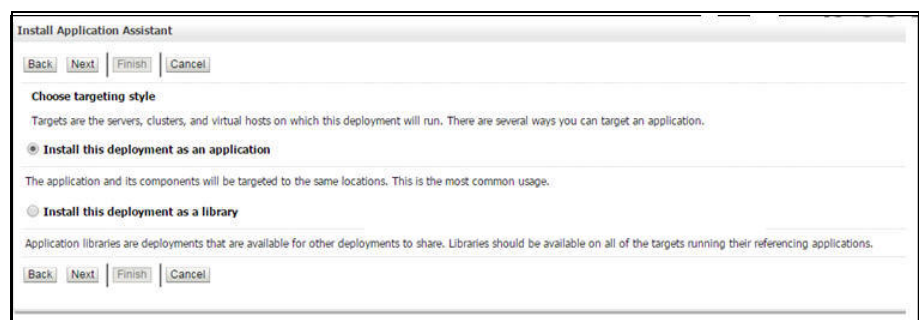
17. Click **Install**.

18. Enter the following path and then select the **ords.war** file.

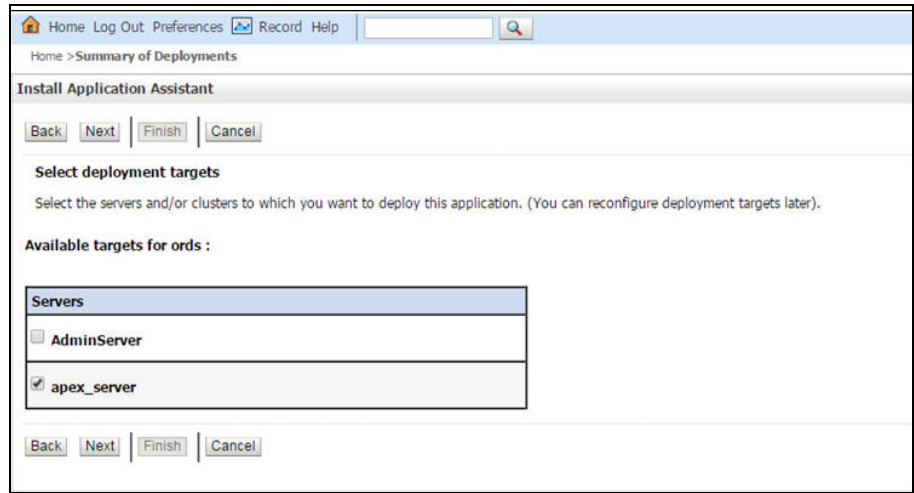
`/scratch/bi_oradata_01/Softwares/apex_listner`



- Click **Next**.



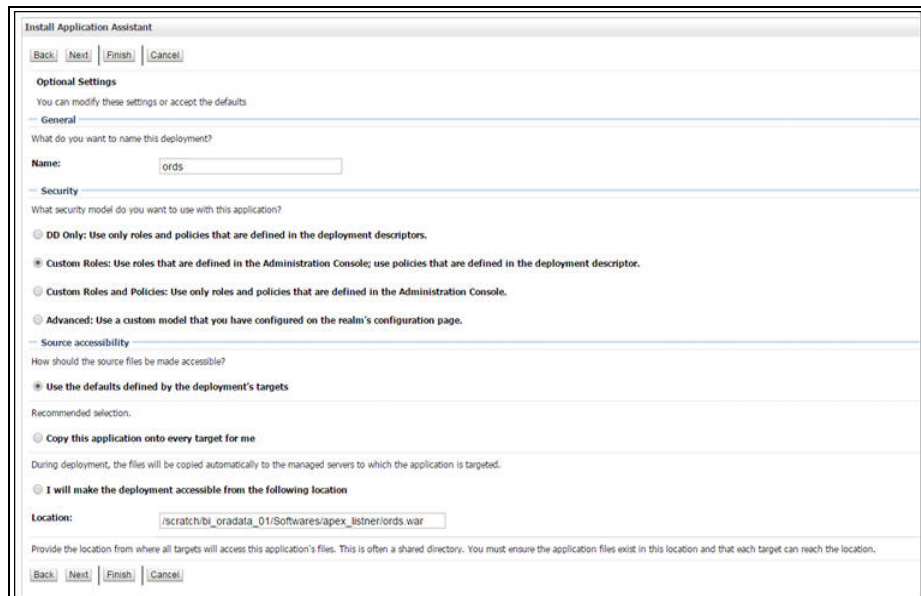
19. Select the **apex server** check box and click **Next**.



The screenshot shows the 'Install Application Assistant' wizard in the 'Summary of Deployments' section. The 'Select deployment targets' step is active, with instructions to select servers and/or clusters. A table titled 'Available targets for ords' lists two servers: 'AdminServer' (unchecked) and 'apex_server' (checked). Navigation buttons 'Back', 'Next', 'Finish', and 'Cancel' are visible at the top and bottom of the wizard.

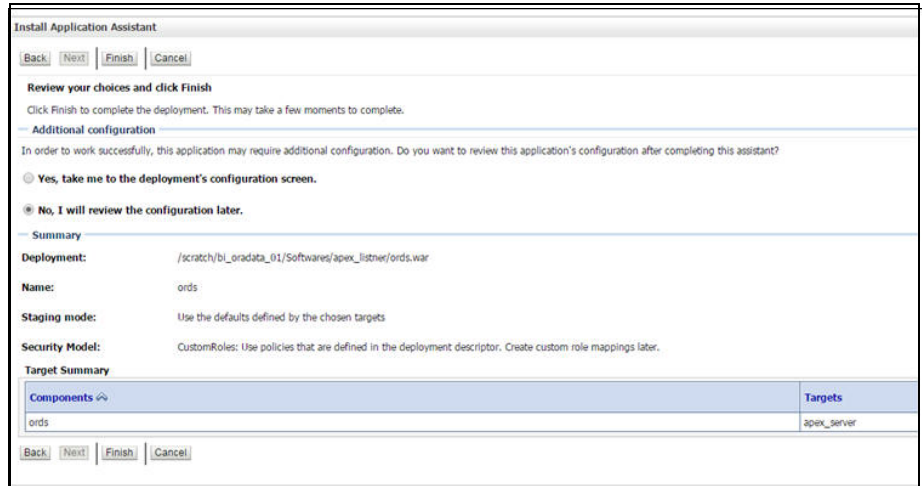
Servers
<input type="checkbox"/> AdminServer
<input checked="" type="checkbox"/> apex_server

20. Select the options as shown below:

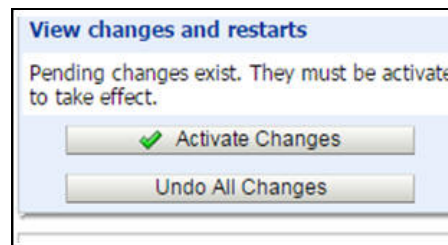


The screenshot shows the 'Optional Settings' step of the 'Install Application Assistant' wizard. It includes sections for 'General' (deployment name 'ords'), 'Security' (radio buttons for 'DD Only', 'Custom Roles', 'Custom Roles and Policies', and 'Advanced'), and 'Source accessibility' (radio buttons for 'Use the defaults defined by the deployment's targets' and 'Copy this application onto every target for me'). A 'Location' field is set to '/scratch/bi_oradata_01/Softwares/apex_listener/ords war'. Navigation buttons 'Back', 'Next', 'Finish', and 'Cancel' are visible at the top and bottom.

21. Select the options as shown below:



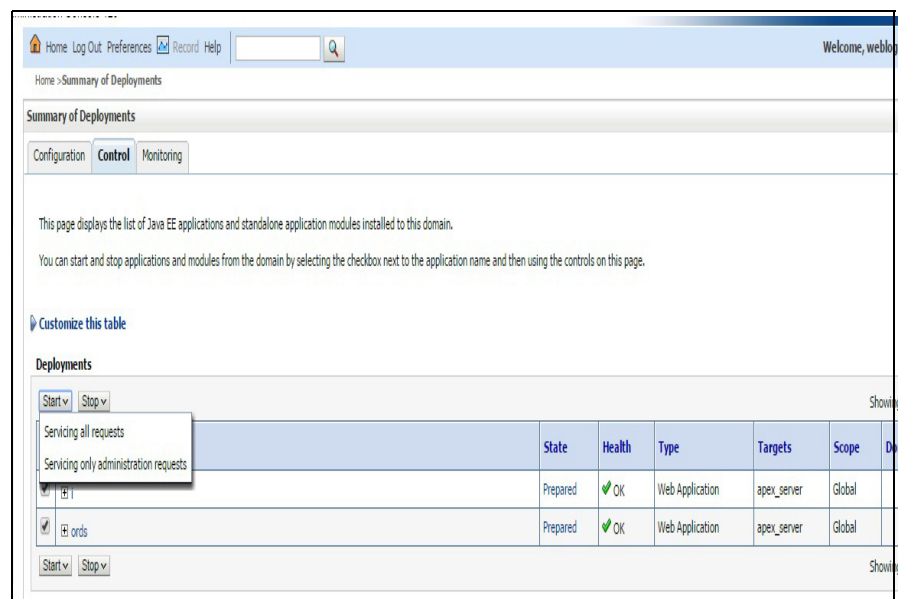
22. Click **Activate Changes**.



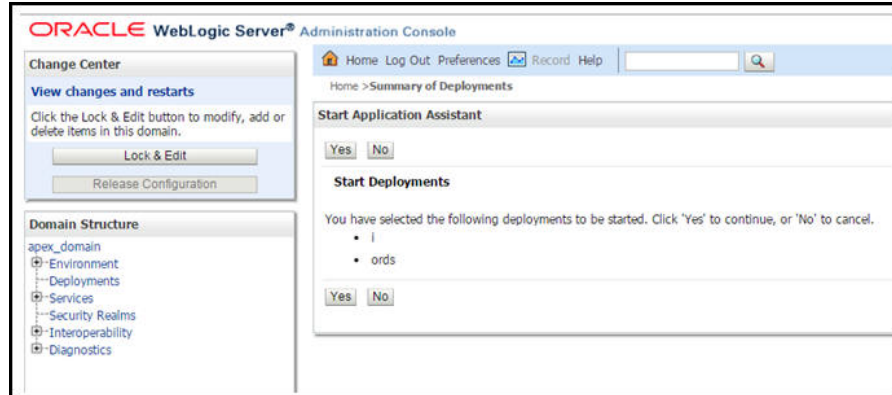
23. Repeat the steps 13 to 20 to deploy the **i.war** file.

24. Login to the WebLogic console and navigate to **Deployment > Monitoring**.

25. Select **i** and **ords**. Then, click **Start > Servicing All Requests**.



26. Click **Yes**.



27. Restart the Admin and Managed servers.

28. Go to the following URL to access the Administration Tool:

<http://<hostname>:<managed server port no>/ords/f?p=104>

The credentials to access the tool are:

User ID: Admin

Password: Admin_123

Changing Default Password of the Admin User

This section describes the APEX API used to change the password of the admin user. The script should be run after connecting to the database as user SYSTEM.

Replace the string 'New password' with the new password for the admin account before running the script.

```
begin
/

wwv_flow_api.set_security_group_id(p_security_group_id=>nvl(wwv_flow_application_install.get_workspace_id,2090606133849294));
end;
/

begin
apex_util.edit_user(
p_user_id      => '2090514487849294',
p_user_name    => 'ADMIN',
p_web_password => 'New password',
p_new_password => 'New password'
);
end;
/

commit;
/
```

Note: It is strongly recommended to change the default password after logging in.

Installing Oracle Utilities Analytics Dashboards Component

Important! Ensure that the same Operating System (OS) user to install the prerequisite software is used to install the Oracle Utilities Analytics Dashboards component as well.

The Oracle Utilities Analytics Dashboards component is installed on the Oracle Utilities Analytics application server. This section describes how to install the dashboards component of Oracle Utilities Analytics.

- [Creating and Configuring an OBIEE Domain](#)
- [Copying and Decompressing Install Media](#)
- [Starting the Installer](#)
- [Installation Steps](#)
- [Deploying the Repository \(RPD\) File](#)
- [Deploying Web Catalog](#)
- [Configuring and Deploying the MapViewer](#)
- [Updating MapViewer Configuration](#)
- [Enabling WriteBack](#)
- [Enabling Auto Complete Feature in OBIEE](#)

Creating and Configuring an OBIEE Domain

To create and configure an OBIEE domain, follow the steps below. This is a prerequisite to install the Oracle Utilities Analytics Dashboards component.

1. Run RCU to create the necessary schemas.
 - a. Navigate to <FMW infrastructure home>/oracle_common/bin. Example location:


```
cd /u01/12.2.1.3_Infrastructure/oracle_common/bin
```
 - b. Run below command and follow the instructions in the wizard:


```
./rcu
```

Note: Select AS Common Schemas and Oracle Business Intelligence components in the **Select Components** panel.
2. Run the OBIEE configuration assistant to create an OBIEE domain.
 - a. Navigate to <FMW infrastructure home>/bi/bin

Example location:

```
cd /u01/12.2.1.3_Infrastructure/bi/bin
```
 - b. Run below command and follow the instructions in the wizard:

In UNIX:

```
./config.sh
```
 - c. On the **Database Details** panel, choose “Use existing schemas” and provide connection details (prefix of the RCU run in step 1).
 - d. On the **Initial Application** panel, select “Oracle sample application (SampleAppLite).”

Note: Ensure the BI domain path, WebLogic user name and password are noted down. They should be provided as inputs when the Oracle Utilities Analytics Dashboards component installer is run.

3. After the successful creation of OBIEE domain, start the OBIEE Admin server.
4. Login into the Admin console.
 - a. On the **Environment** tab, navigate to the coherence clusters.
 - b. Click **defaultCoherenceCluster** and then select the **Configuration** tab.

Ensure the port mentioned in the **Cluster Listen Port** field is not in use. If needed, change it to another port that is not in use.
 - c. Click **Save** to save the port changes (if any).
 - d. Start the OBIEE Managed server.
5. After starting the OBIEE domain services successfully, navigate to the <OBIEE domain>/config/fmwconfig directory.
 - a. Open jps-config.xml.
 - b. Under the <serviceInstance name=""idstore.ldap" provider=""idstore.ldap.provider""> element, add the property element as below:


```
<property
name=""oracle.security.jps.ldap.policystore.refresh.interval"
value=""6000000""/>
```

The OBIEE domain is successfully created and configured.

Copying and Decompressing Install Media

To download and decompress the install media, follow these steps:

1. Download Oracle Utilities Analytics Patchset package from My Oracle Support (<https://support.oracle.com>).
2. Create a temporary directory, such as /OUA/temp (referred to <TEMPDIR> below).
3. This directory must be located outside any current working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.
4. Unzip Oracle Utilities Analytics Patchset package to <TEMPDIR>.

Starting the Installer

Important! In an AIX operating system, set the following environment variable before starting the Oracle Utilities Analytics installation.

```
export IBM_JAVA_OPTIONS="-Xmx2g -XX:PermSize=64m -
XX:MaxPermSize=3200m"
```

To start the installer:

1. Navigate to the temporary folder where you downloaded the install. Run the following command from the folder:


```
java -jar <TEMPDIR>/OUA_2.7.0.0.<PS number>_generic.jar -logLevel
finest
```

Note: The minimum JDK required for running the Oracle Utilities Analytics installer is JDK 1.8.
2. On the **Welcome** page, review the information before you begin the installation.
3. Click **Next** to continue with the installation.

- Complete the installation by following the tasks on the navigation pane.

Each item in the navigation pane represents a specific installer screen that prompts you for the information required to install the software.

Installation Steps

To install the Dashboards component:

- Run the Oracle Utilities Analytics Installer.
- On the **Welcome** page, review the available information before you begin the installation.
- Click **Next** to continue with the installation. The **Installation Location** page appears.
- Define the **Installation Location** here and click **Next**. The **Select Installation Type** page appears.

Note: The specified Oracle home directory must be an empty directory or a directory where the OUA ODI ETL 2.7.0 patchset component was installed successfully.

- In the **Select Installation Type** page, select **Dashboards** and click **Next**.

Note: Based on the selected installation type, the options on the left navigation panel change. When you select **Dashboard** as an **Installation Type**, you need to define **Database and Java Home Details**, **Target Database Connection Details** and **OBIEE Home Details**.

The **Database and Java Home Details** page appears.

- Enter the following details in the respective fields and click **Next**.

Field Name	Description	Value
Database Client Home	Database client home location	Example: /u01/app/product/12.1.0/dbhome_1
Java Home	JDK home location	JDK 1.8 location Example: /u01/jdk_1.8.0_77

The **Target Database Connection Details** page appears.

- Enter the following details in the respective fields and click **Next**.

Field Name	Description	Value
Host	The host name of the server where the database resides.	Oracle Utilities Analytics Database Server
Port	The database port number on the database server used for connecting to the database.	Oracle Utilities Analytics Database Port. The default value is 1521.
Service Name	The service name for the database	

Field Name	Description	Value
Target Schema Password	The password for the target schema (DWADM).	
Confirm Target Schema Password	Confirm the password for the target schema (DWADM) here.	
Metadata Schema Password	The password for the metadata schema (MDADM).	
Confirm Metadata Schema Password	Confirm the password for the metadata (MDADM) schema here.	

The **OBIEE Home Details** page appears.

8. Enter the following details in the respective fields and click **Next**.

Field Name	Description	Value
BI Home	The location on the disk where OBIEE is installed.	Example: /u01/ Middleware/Oracle_BI1
BI Domain Home	The domain Home location under the directory where OBIEE is installed.	Example: /u01/ Middleware/ user_projects/domains/ bifoundation_domain
Weblogic Host	The hostname on which WebLogic server for OBIEE is running.	
Weblogic Port Number	A unique port number within the system that is assigned to the HTTP port. This port number is used as a part of the client URL request to connect to the host. It is the OBIEE WebLogic console admin port number.	Example: 7001
Weblogic User	WebLogic domain login user name.	

Note: You will be prompted for the Weblogic user's password after installation.

The **Installation Summary** page appears.

9. Verify the installation options and click **Install** to begin the installation.
- For any changes to the configuration before starting the installation, use the navigation pane and select the topic to edit.
10. The **Installation Progress** page appears allowing you to see the progress of the installation. Operations being performed as part of the installation are logged to the terminal from which the installer was run. Detailed logs of the installation are also available in the logs/system directory under the installation location.

To quit before the installation is complete, click **Cancel**. Doing so will result in a partial installation; the portion of the software that was installed on your system before you click **Cancel** will remain on your system, and it needs to be deleted manually.

11. On the **Installation Completed** page, click **Finish** to close the installer.

The Dashboards component is now installed successfully.

Deploying Web Catalog

Take the backup of existing BI Publisher reports from the catalog location. After the deployBAR step is completed successfully, copy the BI Publisher reports (for which backup was taken) to the location of the catalog.

To deploy the web catalog:

1. Go to the <DOMAIN_HOME>/bidata/service_instances/ssi/metadata/content/catalog/root/shared directory.
2. Delete the existing catalogs (if any) that were delivered out-of-the-box with Oracle Utilities Analytics in the previous release.

Ensure any custom catalog related files in this directory are backed up in a separate location before running deployBar.sh.

If Oracle Utilities Network Management System BI Publisher reports were deployed they should be retained.

3. Follow these steps:

- In UNIX:

- a. Navigate to <Install_Dir>/bin directory.

```
cd <Install_Dir>/bin
```

- b. Add Java 8 to the path variable as shown in example below:

```
export PATH=/scratch/softwarewares/jdk1.8.0_77/bin:$PATH
```

- c. Run ksh ./deployBAR.sh.

The web catalog is successfully deployed.

For an AIX operating system, after the deployBAR.sh is completed successfully, execute the following command:

```
cp -r ../writeback/wbtemplates/* $DOMAIN_HOME/bidata/
service_instances/ssi/metadata/content/msgdb/1_en/customMessages
```

Deploying the Repository (RPD) File

If no changes are made to the deployed RPD, then take the RPD file from the following location, where <install_dir> is the Oracle Utilities Analytics Dashboard Component installation directory:

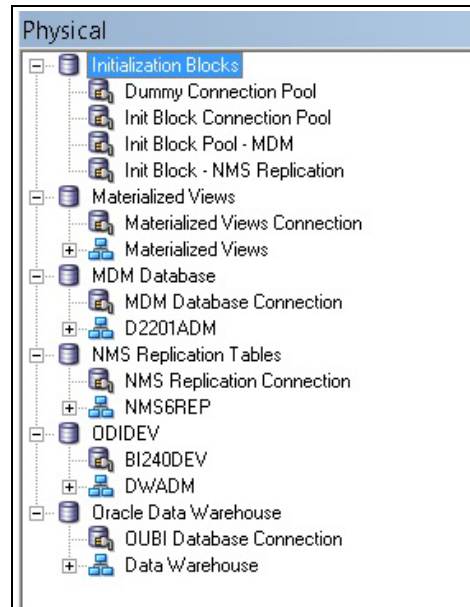
```
<install_dir>/Reports/rpd/ UtilitiesBusinessAnalytics.rpd
```

If it was merged, then take the merged RPD and make the required database changes. Copy this RPD file to the Windows machine on which OBIEE 12.2.1.4 is installed.

To deploy the RPD file:

1. Ensure OBIEE 12.2.1.4 is installed on the Windows machine before proceeding.
2. Click **Start > Programs > Oracle Business Intelligence > Administration**.

3. Click **File > Open > Offline...** to open the RPD in offline mode.
4. Provide the RPD password. The default password is “oracle123”.
5. Double-click the **Connection Pools** to edit them.



- In the **Init Block Connection Pool** group, enter the following:
Datasource name = BI Database name
User name = DWREAD
Password = DWREAD User password
- In the **Init Block Pool - MDM** group, provide the following (only for Oracle Utilities Meter Data Management):
Datasource name = MDM database name
User name = CISUSER
Password = CISUSER User password
- In the **Init Block Pool - NMS Replication** group, provide the following (only for Oracle Utilities Network Management System):
Datasource name = BI database name
User name = DWREAD
Password = DWREAD User password
Note: The schema name is NMS1REP by default. Rename it if the replication schema name is different.
- In the **Materialized Views Connection** group, enter the following:
Datasource name = BI Database name
User name =DWREAD
Password = DWREAD User password
- In the **MDM Database Connection** group, provide the following (only for Oracle Utilities Meter Data Management):
Datasource name = MDM database name

User name = CISUSER

Password = CISUSER User password

- In the **NMS Replication Tables** group, provide the following (only for Oracle Utilities Network Management System):

Datasource name = BI database name

User name = DWREAD

Password = DWREAD User password

Note: The default schema name is NMS1REP. If the replication schema name is different, then rename.

- In the **ODIDEV Connection Pool** group, provide the following:

Datasource name = BI database name

User name = DWUSER

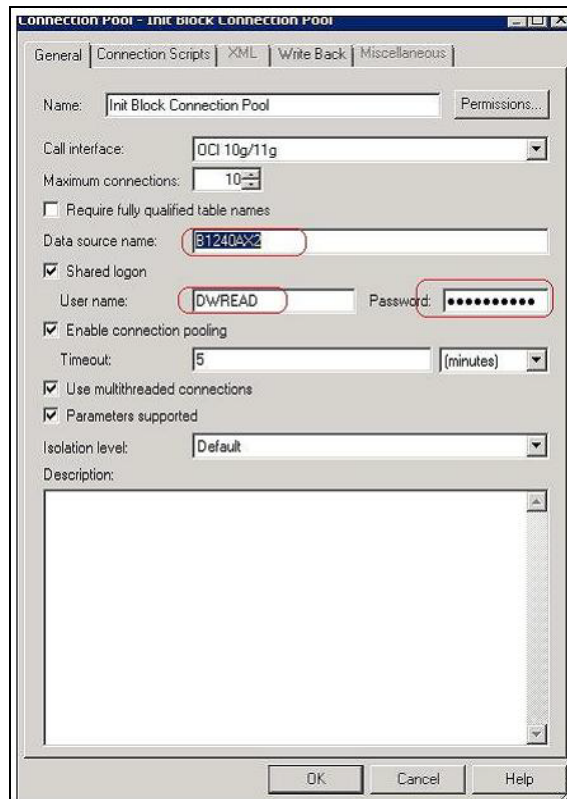
Password = DWUSER User password

- In the **OUBI Database Connection** group, provide the following:

Datasource name = BI database name

User name = DWREAD

Password = DWREAD User password



6. Click **Save**.

Note: Click **Yes** when you see the prompt '*Do you wish to check global consistency?*' and ignore any warnings that appear after consistency check is complete.

7. Copy the modified RPD back to the <install_dir>/Reports/rpd/UtilitiesBusinessAnalytics.rpd where <install_dir> is the Oracle Utilities Analytics Dashboard Component installation directory.
8. Login to the server where OBIEE Enterprise Manager is installed.
9. Navigate to **<OBIEE DOMAIN>/bitools/bin**.
10. Run the following command to deploy the RPD:

In Unix:

```
datamodel.sh uploadrpd -I <OUA home>/Reports/rpd/
UtilitiesBusinessAnalytics.rpd -W <rpd password, default
password is oracle123> -U <Weblogic user name of OBIEE domain> -
P <Weblogic password of OBIEE domain> -SI ssi
```

11. Run the following commands from <OBIEE DOMAIN>/bitools/bin directory to stop and start the OBIEE domain services respectively.

```
stop.sh
```

```
start.sh
```

Configuring and Deploying the MapViewer

Configuring and deploying the MapViewer involves the following tasks:

- [Configuring the MapViewer](#)
- [Modifying instanceconfig.xml](#)
- [Updating MapViewer Configuration](#)

Configuring the MapViewer

To configure the Mapviewer:

1. Login to the WebLogic console.
2. Create the 'MAP_DS' datasource.
3. Lock and edit it.
4. Navigate to **Services > Data Sources**.
5. Select **New > Generic Data Source** and provide the following:
 - Name = MAP_DS
 - JNDI Name = MAP_DS
 - Database Type = oracle
6. Click **Next**.
7. Enter the following:
 - Database Driver = *Oracle's Driver (Thin) for Service connections; Versions:Any
8. Click **Next**.
9. On the next page, do not change any values. Click **Next**.
10. Enter the following connection properties:
 - Database Name: BI Database Name
 - Host Name: Database host
 - Port: Database port

- Database User Name: dwadm
 - Password: dwadm password
11. Click **Next**.
 12. On the next page, click **Test Configuration**. After the successful test, click **Next** again.
 13. On the **Select Target** page, select AdminServer under **Servers** and bi_cluster under **Clusters**. Click **Finish**.
 14. Click **Activate Changes**.
 15. Update the mapViewConfig file with the tags mentioned below:
File location: <Install Dir>
/user_projects/domains/<obiee_domain>/config/fmwconfig/mapviewer/conf
File: mapViewConfig.xml
 16. If there is a proxy used, insert the list of host names for all the third-party service providers in the security_config node.

```
<proxy_enabled_hosts>
elocation.oracle.com
</proxy_enabled_hosts>
```
 17. Add the following ns_data_provider node:

```
<ns_data_provider id="obieeNsdp"
class="com.oracle.utilities.birdseye.BirdseyeNSDP" />
```
 18. Add the current map_tile_server with the following map_tile_server node:

```
<map_tile_server>
<tile_storage default_root_path="/mytilecache/" />
</map_tile_server>
```

Modifying instanceconfig.xml

Ensure you take a backup before updating the instanceconfig.xml file. Run the following commands to go to the directory containing the instanceconfig.xml file.

In UNIX:

```
<OBIEE_INSTALL_DIR>/user_projects/domains/<obiee_domain>/config/
fmwconfig/biconfig/OBIPS
```

Perform the following changes to the instanceconfig.xml file:

1. Update the security node with the following values. If the security node is not present, add the following code before </Serverinstance>:

```
<Security>
<ClientSessionExpireMinutes>210</ClientSessionExpireMinutes>
<HttpOnlyCookies>>false</HttpOnlyCookies>
<CookieDomain />
<CookiePath></CookiePath>
</Security>
```
2. Update the following <ServerInstance> element:

```
<LightWriteback>>true</LightWriteback>
```
3. Add the following code between the <ServerInstance> </ServerInstance> tags.

```
<Prompts>
<MaxDropDownValues>256</MaxDropDownValues>
<AutoApplyDashboardPromptValues>>true</AutoApplyDashboardPromptValues>
<AutoSearchPromptDialogBox>>true</AutoSearchPromptDialogBox>
```

```

<AutoCompletePromptDropDowns>
<SupportAutoComplete>true</SupportAutoComplete>
<CaseInsensitive>true</CaseInsensitive>
<MatchingLevel>MatchAll</MatchingLevel>
<ResultsLimit>50</ResultsLimit>
</AutoCompletePromptDropDowns>
</Prompts>
<SpatialMaps>
<MapViewAPIV2Enabled>>false</MapViewAPIV2Enabled>
</SpatialMaps>

```

Updating MapViewer Configuration

To update the MapViewer configuration:

1. Login to MapViewer.

<http://<Server>:<port>/mapviewer>

2. To update the MapViewer configuration, navigate to **MapViewer > Administration > Configuration**. Login to the Mapviewer at this location:

<http://<HOST>:<MANAGERPORT>/mapviewer>

3. Add the below code in the mapViewerConfig.xml with the appropriate values:

```

<map_data_source name="mapconn"
jdbc_host="<DB server name>"
jdbc_sid="//<DB Service name>"
jdbc_port="1521"
jdbc_user="DWADM"
jdbc_password="!<DWADM user password>"
jdbc_mode="thin"
number_of_mappers="32"
allow_jdbc_theme_based_foi="true"
/>

```

4. Click **Save**, and then restart.

Enabling WriteBack

To enable the Write Back:

1. Login to Analytics and navigate to **Administration > Manage Privileges > WriteBack > Write Back to Database**.
2. Click **Denied:Authenticated User** and select the **Granted** permission.

Enabling Auto Complete Feature in OBIEE

To enable the auto complete feature on OBIEE:

1. Restart the OBIEE Admin server, Managed server, and opmn services.

Note: Refer to OBIEE documentation for detailed instructions on how to start and stop admin server, managed server, and opmn services.

2. Login to Analytics.

<http://<Server>:<port>/analytics>

3. Click **WebLogic User** (top-most-right section of the page).
4. From the drop-down menu, select **My Account**.

5. On the **Preferences** tab, set **Prompt Auto Complete** to **ON**.
6. Click **OK**.

Chapter 6

Upgrading Oracle Utilities Analytics from v2.6.0.0.2

The Oracle Utilities Analytics v2.7.0 release supports the following direct upgrade paths:

- v2.6.0.0.2 to v2.7.0
- v2.5.0.0.5 to v2.7.0

This chapter is applicable **only** to customers upgrading from Oracle Utilities Analytics v2.6.0.0.2 to v2.7.0.

Note: To upgrade from Oracle Utilities Analytics v2.5.0.0.5, refer to [Chapter 7: Upgrading Oracle Utilities Analytics from v2.5.0.0.5](#) for instructions and details.

To upgrade to Oracle Utilities Analytics v2.7.0, you must first upgrade to Oracle Utilities Analytics v2.6.0.0.2 or v2.5.0.0.5 if on an earlier version. Ensure all pre-requisites (JDK, ODI, and ODI patch 23629220) are met before beginning the upgrade process.

This chapter describes the procedure to upgrade to Oracle Utilities Analytics v2.7.0, including:

- [Pre-requisites](#)
- [Upgrading Oracle Utilities Analytics Database Component](#)
- [Upgrading Oracle Data Integrator Based ELT Component](#)
- [Upgrading Oracle Utilities Analytics Administration Tool Component](#)
- [Upgrading Oracle Utilities Analytics Dashboards Component](#)

Pre-requisites

Upgrading Oracle Utilities Analytics from v2.6.0.0.2 to v2.7.0 includes upgrading Oracle Data Integrator based source applications (Oracle Utilities Customer Care and Billing, Oracle Utilities Work and Asset Management, Oracle Utilities Network Management System, Oracle Utilities Mobile Workforce Management, and Oracle Utilities Meter Data Management).

This section describes the steps to configure Oracle Data Integrator based source applications.

Ensure the required JDK 1.8.0(77) and Oracle Data Integrator 12.2.1.0.0 (both infrastructure and ODI) are installed on Oracle Data Integrator server. Also, the target OBIEE applications should be down.

Follow the steps below as part of prerequisites:

1. Before proceeding with source application configuration, perform the following steps:
 - a. Connect to the Oracle Utilities Analytics database as sys user and grant the below privilege to the MDADM schema.

```
SQL> GRANT CREATE ANY TABLE TO MDADM;
```
 - b. Connect to MDADM schema in the Oracle Utilities Analytics database.
 - c. Execute b1_redef_replication in BI270/Scripts/b1_redef_replication.sql.

This SQL creates the procedure to sync DDL changes from the source to replication schemas.

For example:

```
SQL> @b1_redef_replication.sql  
/
```

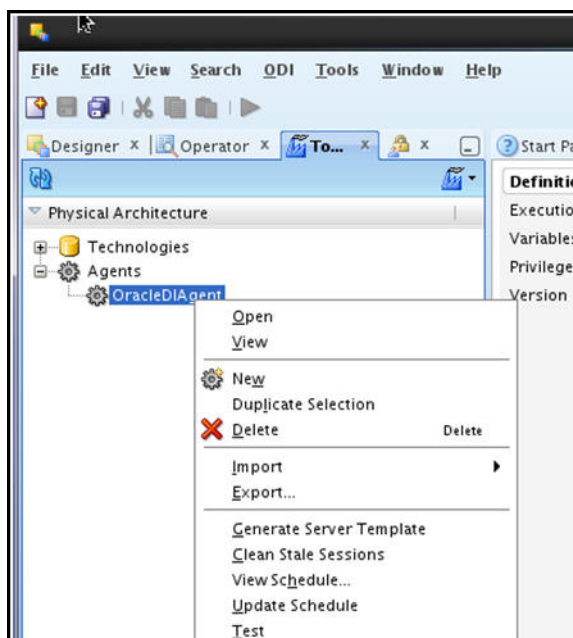
```
Procedure created.
```

```
SQL> show errors;  
No errors.  
SQL>
```

2. Login to Oracle Utilities Analytics ODI server and start the ODI client.

```
cd $ODI_HOME/odi/studio  
./odi.sh
```
3. Stop BI_RUN_ALL. Follow these steps:
 - a. Login to Oracle Database Integrator Studio.
 - b. Double-click **Global/WLS_AGENT** and select **Inactive**.
 - c. Save the changes.

4. On the Studio, navigate to the **Topology** tab. Right-click **OracleDIAgent** and select **Upgrade Schedule**.



5. Execute the following query to check if all jobs are complete.

Note that this is applicable if the source system is Oracle Utilities Customer Care Billing, Oracle Utilities Operational Device Management, or Oracle Utilities Network Management System.

```
SELECT
*
FROM mdadm.bl_jobs_vw
WHERE status_flg NOT IN ('D', 'E', 'RP');
```

Note: No rows should be returned from the query mentioned above. If any rows are returned, that means jobs are not yet completed. Wait until all the jobs are completed.

6. Stop the Oracle Data Integrator admin and managed servers.
7. Sync all the Oracle GoldenGate processes.
 - a. Connect to MDADM schema in the Oracle Utilities Analytics database.
 - b. Execute the SQL mentioned below to get all the context codes.

```
Select CONTEXT_CD from bl_prod_instance where CONTEXT_CD<>'B1';
```
 - c. For each context returned by the query, perform the following steps.
 - a. Connect to the source database corresponding to the context code as **sys user**.
 - b. Execute the following command:

```
alter system switch logfile
select SEQUENCE# from v$log where STATUS='CURRENT';
```
 - c. Note the result of the above query.
 - d. Connect to MDADM schema in the Oracle Utilities Analytics database.

- e. Execute the SQL mentioned below to get source GoldenGate server and Oracle GoldenGate Home on source server.

```
select DS_HOST,DS_HOME from bl_server_cfg where
CONTEXT_CD='<Context_code>'
```

- f. Connect to the source GoldenGate server.

- g. At the source Oracle GoldenGate prompt, run the following:

```
cd <GG_Home>
./ggsci
```

- h. Run the following command:

```
info extract <Context_codeXXX>, showch
```

For example: info extract CCB1AAX, showch

In the **Recovery Checkpoint** section, sequence should be = or > 1 returned by:

```
select SEQUENCE# from v$log where STATUS='CURRENT'
```

Repeat the check mentioned in the *step h* for each extract process.

- i. Ensure that the pump processes transfer all the changes to the target server. Lag at the **Chkpt** and **Time Since Chkpt** should be 0.
- j. On the Oracle Utilities Analytics database server, ensure the replicate processes apply all changes for the context code.

- Connect to the MDADM schema in Oracle Utilities Analytics database and execute the query below to get the target server and GoldenGate Home details on the target server.

```
select DS_HOST,DS_HOME, DS_FLAG from bl_server_cfg where
CONTEXT_CD='B1';
```

- Connect to the target server and login to the GoldenGate prompt. Execute the following commands:

```
cd <GG_Home >
./ggsci
dblogin userid MDADM,password <MDADM user password> Send
replicat <Context_codeXX>,status
```

The current status will be at EOF.

- k. Check this for each 'replicat' process of the context code.
- l. Ensure all extracts and replicates of all sources are in sync.
- m. Stop replicate processes in the target server. Go to <Target_GG_HOMR>/dirprm directory and modify <CONTEXT>AA.prm file with modifications as below.

Existing entry:

```
,EXCLUDE INSTR 'PRIMARY' &
,EXCLUDE INSTR 'UNIQUE' &
```

Modified entry:

```
,EXCLUDE INSTRWORDS 'PRIMARY KEY' &
---,EXCLUDE INSTR 'UNIQUE' &
```

Repeat these steps for all other 'replicat' parameter files.

Upgrading Source Applications to be Compatible with Oracle Utilities Analytics v2.7.0

The source applications' databases must be in archive log mode during their upgrade. Oracle GoldenGate processes should be up and running on both source and target during the source application(s) upgrade.

Note: After a successful upgrade, **do not** release the source applications to end users. Ensure to stop the source applications, but the source databases should be up and accessible.

1. Login to the Oracle Utilities Analytics GoldenGate server.
2. Go to GoldenGate Home and execute the shell script `restart.sh` from `BI270/Scripts/restart.sh`.

This shell script starts the replicate processes that are stopped due to DDL changes in source system. Once all the DDL changes are in sync to replication schema, the shell script is automatically terminated.

Monitor `restart.sh` execution. Proceed with next steps only when the `restart.sh` execution is complete.

3. Validate if all columns are in sync.
4. Connect to the MDADM schema in the Oracle Utilities Analytics database.
5. Execute the below query. It should not return any records.

```
select TABLE_NAME,COLUMN_NAME
  from DBA_TAB_COLUMNS@<CONTEXT_CODE> LINK DTC
 where OWNER = 'SOURCE_APPLICATION_SCHEMA'
 and exists (select 1
             from MDADM.B1_REPLICATION_CFG_VW a
             where a.TABLE_NAME = DTC.TABLE_NAME
             and CONTEXT_CD = '<CONTEXT_CODE>'
             AND (BASE_REPLICATE_FLG = 'Y' OR CM_REPLICATE_FLG = 'Y'))
 MINUS
select TABLE_NAME,COLUMN_NAME
  from DBA_TAB_COLUMNS
 where OWNER = '<CONTEXTCODE>REP'
 and COLUMN_NAME not like 'JRN%';
```

Example: The following is an example query for NMS1 context.

```
select TABLE_NAME,COLUMN_NAME
  from DBA_TAB_COLUMNS@NMS1_LINK DTC
 where OWNER = 'CISADM'
 and exists (select 1
             from MDADM.B1_REPLICATION_CFG_VW a
             where a.TABLE_NAME = DTC.TABLE_NAME
             and CONTEXT_CD = 'NMS1'
             AND (BASE_REPLICATE_FLG = 'Y' OR CM_REPLICATE_FLG = 'Y'))
 MINUS
select TABLE_NAME,COLUMN_NAME
  from DBA_TAB_COLUMNS
 where OWNER = 'NMS1REP'
 and COLUMN_NAME not like 'JRN%';
```

Perform the following steps to cleanup the Oracle GoldenGate processes:

1. Connect to MDADM schema in the Oracle Utilities Analytics database. Execute the SQL below to get all the context codes.
- ```
Select CONTEXT_CD from b1_prod_instance where CONTEXT_CD<>'B1';
```

2. For each context returned by the query, perform the following steps:
  - a. Connect to MDADM schema in the Oracle Utilities Analytics database. Execute the SQL below to get the source GoldenGate db server, SID and Oracle GoldenGate host, home on source server:

```
Select DS_HOST, DS_SID, DS_HOME, CONTEXT_CD, DS_FLAG from
b1_server_cfg where CONTEXT_CD='<Context_code>'
```

- b. Connect to the source database corresponding to context code as **sys user** and execute the following command:

```
alter system switch logfile
select SEQUENCE# from v$Log where STATUS='CURRENT';
```

- c. Note down the result of the query mentioned above.
  - d. Connect to the source GoldenGate server and log into the source Oracle GoldenGate prompt.

```
cd <GG_Home>
./ggsci
```

- e. Execute the following command:

```
info extract <Context_codeXXX>, showch
```

For example:

```
info extract CCB1AAX, showch
```

In the **Recovery Checkpoint** section, the sequence should be = or > 1 returned by the query below:

```
select SEQUENCE# from v$Log where STATUS='CURRENT'
```

Repeat the check mentioned in the *step e* for each extract process.

- f. Ensure that the pump processes transfer all the changes to the target server. Lag at the **Chkpt** and **Time Since Chkpt** should be zero.
  - g. On the source database server, drop all the GoldenGate processes by following these steps:

- a. Connect to MDADM schema in the Oracle Utilities Analytics database.
  - b. Execute the following query to get GoldenGate Owner name in the source database.

```
select SCHEMA_NAME
from MDADM.B1_CONTEXT_CFG_VW
where LSCHEMA_NAME = 'Journal'
and CONTEXT_CD = '<Context_code>';
```

- c. Login to source GoldenGate prompt.

```
cd <GG_Home>
./ggsci
```

- d. Execute the following commands:

```
dblogin userid < GoldenGate Owner >, PASSWORD < GoldenGate
Owner password>
stop <Context_code>*
```

For example:

```
stop CCB1*
```

```
delete <Context_code>*
```

```
delete CCB1*
Stop mgr
```

Execute the below commands to unregister extracts from database:

```
unregister extract <Context_code>*X database
```

For example:

```
unregister extract CCB1AAX database
```

Similarly, unregister all model extracts.

**Note:** Note down the source Oracle GoldenGate context\_codes of each source and source Oracle GoldenGate Owner info. They will be used to configure the existing sources with same context during the upgrade.

- h. Connect as a **sys user** to the source database server. Execute the following command:

```
<GG_Home>/ddl_disable.sql
```

- i. Rename the existing source Oracle GoldenGate Home on the source server.

Note the GoldenGate manager port number and source GoldenGate home before renaming it.

For example: mv <GG\_Home> <GG\_Home>.bkp

- j. On the Oracle Utilities Analytics database server, ensure the replicate processes apply all changes for the context code.

- a. Connect to MDADM schema in the Oracle Utilities Analytics database. Execute the below query to get the target server and GoldenGate Home details on the target server.

```
select DS_HOST,DS_HOME,DS_FLAG from bl_server_cfg where
CONTEXT_CD='B1';
```

- b. Connect to the target server and login to the GoldenGate prompt. Execute the following commands:

```
cd <GG_Home >
```

```
./ggsci
```

```
Dblogin userid MDADM,password <MDADM user password>
Send replicat <Context_codeXX>,status
```

The current status will be at EOF.

```
GGSCI (slc07heq) 2> SEND REPLICAT CCB1AA ,status

Sending STATUS request to REPLICAT CCB1AA ...
Current status: At EOF
Sequence #: 11
RBA: 14889
0 records in current transaction
```

- c. Check this for each replicate process for the context code and ensure replicate processes completed writing all the changes.
- d. After checking the current status and each replicate process for the context code, execute the following commands:

```
Stop <Context_code>*
```

For example:

```
stop CCB1*
```

```
Delete <Context_code>*
```

For example:

```
delete CCB1*
```

3. After all source applications' changes are in sync in the Oracle Utilities Analytics database, execute the following command after connecting to the target GoldenGate Home prompt.

```
./ggsci
Stop mgr
```

4. Rename the existing target GoldenGate Home directory.

Note the GoldenGate manager port number and target GoldenGate Home before renaming it.

5. Upgrade the source application databases.

If the source database version is prior to 11.2.0.4, then upgrade to 11.2.0.4 or a later version.

6. Install new Oracle Data Integrator 12.2.1.0.0 (both infrastructure and ODI) if not done already.

Apply Oracle Data Integrator patch **23629220** on Oracle Data Integrator server. The patch on 12.2.1.0.0 is available on My Oracle Support (<http://support.oracle.com>).

To summarize, a successful Oracle Data Integrator installation involves installing/applying the following:

- JDK1.8.0(77)
- Oracle Fusion Middleware Infrastructure 12.2.1
- Oracle Data Integrator 12.2.1
- Oracle Data Integrator patch 23629220

## Installing Oracle Fusion Middleware Infrastructure

Note that the Oracle Home path provided in the **Installation Location** page is used while installing the Oracle Data Integrator.

The infrastructure installation type is 'Fusion Middleware Infrastructure'.

During the Oracle Data Integrator 12.2.1 installation, provide the same 'Oracle Home' path used as Oracle Home while installing Oracle Fusion Middleware Infrastructure. Select **Enterprise Installation** on the **Installation Type** page.

## Upgrading Oracle Utilities Analytics Database Component

This section describes the steps included to upgrade the Oracle Utilities Analytics database component:

- [Copying and Decompressing the Install Media](#)
- [Creating Users and Tablespaces](#)
- [Installing RELADM Schema](#)
- [Installing MDADM Schema](#)

- [Installing DWADM Schema](#)

Before proceeding with upgrading the Oracle Utilities Analytics Database component, ensure the following are complete:

- Upgrading Oracle Utilities Analytics database to version 12.1.0.2.0.
- Installing Oracle GoldenGate 12.2.0.1.1 on Oracle Utilities Analytics database server.

## Copying and Decompressing the Install Media

To copy and decompress the install media, perform these steps:

1. Download Oracle Utilities Analytics v2.7.0 Oracle Database part (**Oracle Utilities Analytics V2.7.0 Oracle Database Multiplatform.zip**) from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).
2. Create a temporary directory (such as c:\OUA\temp for a Windows machine or /OUA/temp for a Linux machine).

This directory (referred to as <TEMPDIR> below) must be located outside any current working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation, can be deleted after completing a successful installation.

3. Unzip **Oracle Utilities Analytics V2.7.0 Oracle Database Multiplatform.zip** to <TEMPDIR> using any zip utility.

## Creating Users and Tablespaces

To create users and tablespaces follow these steps:

1. Ensure to create users in the database with the following names without giving specific roles (if these do not exist already):

DWADM, DWUSER, DWREAD, MDADM, RELADM, OUA\_MASTER, OUA\_WORK and DWSTAGE

2. Connect as **sys user** and revoke the DBA privilege from the following users (if the DBA privilege has been granted to them):

DWADM,MDADM,RELADM,OUA\_MASTER, OUA\_WORK and DWSTAGE

3. Ensure to create roles with the following names (if these do not exist already).

DW\_USER, DW\_READ, DW\_REPLICATE and DW\_PRIVS\_ROLE

4. Connect as **sys user** and execute the **Usersgrants.sql** in /Scripts/Usersgrants.sql.

This SQL provides the required grants to the created users.

5. Copy the DuplicateRecordCheck.sql file from the BI270\DWADM\Pre-Installation directory to the database server under ../<Temp> directory.
6. Connect to the DWADM schema and execute the ../<Temp>/DuplicateRecordCheck.sql.

**Note:** If the system displays that no rows are selected, then proceed. If the system displays some data, then contact Oracle Support team and do not proceed with the installation. It is recommended to wait until you get the data fix script.



## Installing RELADM Schema

The RELADM schema is a metadata schema that consists of the database objects used for storing the product version and component installation information.

This section describes the RELADM schema initial installation, including:

- [Reviewing the Storage.xml file](#)
- [Installation Steps](#)
- [Generating Database Statistics](#)

### Reviewing the Storage.xml file

The storage.xml file (that comes with the product and is in location `<TEMPDIR>/BI270/RELADM/Install- Upgrade`) allocates all the base tables and indexes to the default tablespace CISTS\_01.

If you decide to allocate some tables or indexes outside of the default tablespace, then this has to be reflected in the **storage.xml** file by changing the tablespace name from the default value to a custom value.

**Note:** If database does not have CISTS\_01 tablespace or the RELADM user does not have quota on CISTS\_01 tablespace, edit the Storage.xml file to indicate the correct tablespace name on which RELADM has quota.

### Installation Steps

**Note:** Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

In Windows:

1. Add Java 8 to the path variable as shown in the example below:

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
set CLASSPATH=<TEMPDIR>\BI270\RELADM\Jarfiles*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/
<ORACLE SERVICE NAME>,RELADM,<Password of RELADM user>,,,,RELADM -
j
<JDK Home> -f <TEMPDIR>\BI270\RELADM\Jarfiles -v 1 -e true
```

In Unix:

1. Add Java 8 to the path variable as shown in example below:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/BI270/RELADM/Jarfiles/*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/<ORACLE
SERVICE NAME>,\
RELADM,<Password of RELADM user>,,,,RELADM \
```

```
-j <JDK Home> -f <TEMPDIR>/BI270/RELADM/Jarfiles -v 1 -e true
```

The utility creates the RELADM schema and system data definitions. If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

## Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects:

Connect as **sys user** and execute the following command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('RELADM');
```

## Installing MDADM Schema

The MDADM schema is a metadata schema that consists of the database objects used for storing the metadata of Oracle Utilities Analytics.

For example: ETL job execution status, target tables for ETL, Oracle GoldenGate configuration details, etc.

This section describes the MDADM schema initial installation, including:

- [Reviewing Storage.xml File](#)
- [Installation Steps](#)
- [Generating the Database Statistics](#)

## Reviewing Storage.xml File

The **storage.xml** file (comes with the product and is in location <TEMPDIR>/BI270/MDADM/Install- Upgrade) allocates all the base tables and indexes to the default tablespace CISTS\_01. If you decide to allocate some tables or indexes outside of the default tablespace, then this has to be reflected in the **storage.xml file** by changing the tablespace name from the default value to a custom value.

**Note:** If the database does not have CISTS\_01 tablespace or the MDADM user does not have quota on CISTS\_01 tablespace, you must edit the Storage.xml file to indicate the correct tablespace name on which MDADM has quota.

## Installation Steps

To install the MDADM schema, follow these steps:

**Note:** The process prompts you for the MDADM user password. Ensure to run the OraDBI.jar (in the step below) using JDK 8.0.

Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

- In Windows:
  1. Add Java 8 to the path variable as shown in the example below:
 

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```
  2. Set classpath pointing to OraDBI.jar and all dependency jars.
 

```
set CLASSPATH=<TEMPDIR>\BI270\MDADM\Jarfiles*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/
<ORACLE SERVICE NAME>,MDADM,<Password of MDADM user>,,,,,MDADM -
j
<JDK Home> -f <TEMPDIR>\BI270\MDADM\Jarfiles -v 1 -e true
```

- In Unix:

1. Add Java 8 to the path variable as shown in example below:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/BI270/MDADM/Jarfiles/*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/<ORACLE
SERVICE NAME>,\
MDADM,<Password of MDADM user>,,,,,MDADM \
-j <JDK Home> -f <TEMPDIR>/BI270/MDADM/Jarfiles -v 1 -e true
```

The utility creates the MDADM schema and system data definitions.

If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

## Generating the Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects.

Connect as **sys user** and execute the following command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('MDADM');
```

## Installing DWADM Schema

The DWADM schema contains star schema objects (such as facts and dimensions) that include entire data in the data warehouse.

This section describes the DWADM schema initial installation, including:

- [Executing Pre-Installation SQL](#)
- [Reviewing Storage.xml File](#)
- [Installation Steps](#)
- [Generating Database Statistics](#)

## Executing Pre-Installation SQL

To execute specific SQL scripts before proceeding with the installation, follow these steps:

1. Copy refresh\_mv\_where\_mv\_logs\_outofsync.sql script from BI270/DWADM/ Pre-Installation/ to the database server under ../<Temp> directory. Execute it while connecting to the schema.
2. Copy drop\_out\_of\_sync\_mv\_logs.sql script from BI270/DWADM/ Pre-Installation/ to the database server under ../<Temp> directory. Execute it while connecting to the schema.

## Reviewing Storage.xml File

The storage.xml file (comes with the product and is in location `<TEMPDIR>/BI270/DWADM/Install-Upgrade`) allocates all the base tables and indexes to the default tablespace CISTS\_01. If you decide to allocate tables or indexes outside of the default tablespace, then this has to be reflected in the storage.xml file by changing the tablespace name from the default value to a custom value.

**Note:** If the database does not have CISTS\_01 tablespace or the DWADM user does not have quota on CISTS\_01 tablespace, you must edit the Storage.xml file to indicate the correct tablespace name on which DWADM has quota.

## Installation Steps

To install the DWADM schema, follow these steps:

**Note:** The process prompts you for the DWADM user password. Ensure to run the OraDBI.jar (in the step below) using JDK 8.0.

Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

- In Windows:

1. Add Java 8 to the path variable as shown in the example below:

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
set CLASSPATH=<TEMPDIR>\BI270\DWADM\Jarfiles*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/
<ORACLE SERVICE NAME>,DWADM,<Password of DWADM
user>,DWUSER,DWREAD,DW_USER,DW_READ,DWADM -j
<JDK Home> -f <TEMPDIR>\BI270\DWADM\Jarfiles -v 1 -e true
```

- In Unix:

1. Add Java 8 to the path variable as shown in example below:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/BI270/DWADM/Jarfiles/*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/<ORACLE
SERVICE NAME>,\
DWADM,<Password of DWADM user>,DWUSER,DWREAD,DW_USER,DW_READ,DWADM
\
-j <JDK Home> -f <TEMPDIR>/BI270/DWADM/Jarfiles -v 1 -e true
```

The utility creates the DWADM schema and system data definitions.

If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

## Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects.

Connect as **sys user** and execute the command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('DWADM');
```

## Post-Installation Steps

Perform these steps to complete the installation:

1. Connect to the Oracle Utilities Analytics database and execute the following:

```
... \BI270\DWADM\Post-Upgrade\ControlZoneUpdate.sql
```

2. Connect to the Oracle Utilities Analytics database with the system user and execute the script mentioned below:

```
... /BI270\DWADM\Post-Upgrade\DataCorrection2511.sql
```

# Upgrading Oracle Data Integrator Based ELT Component

This section describes the steps included to upgrade the Oracle Data Integrator based ELT component:

- [Prerequisites for Running Oracle Utilities Analytics Installer](#)
- [Configuring Oracle Data Integrator Repository Creation Utility \(RCU\)](#)
- [Upgrade ODI Repository](#)
- [Setting up Oracle GoldenGate](#)
- [Copying and Decompressing Install Media](#)
- [Starting the Installer](#)
- [Upgrade Steps](#)
- [Configuring Source Applications](#)

Before proceeding with upgrading the Oracle Utilities Analytics based ELT component, ensure the following are complete:

- Installing JDK1.8.0(77)
- Installing Oracle Data Integrator 12.2.1.0.0 (both infrastructure and ODI)
- Applying Oracle Data Integrator patch 23629220

## Prerequisites for Running Oracle Utilities Analytics Installer

Before running the Oracle Utilities Analytics installer, perform these steps:

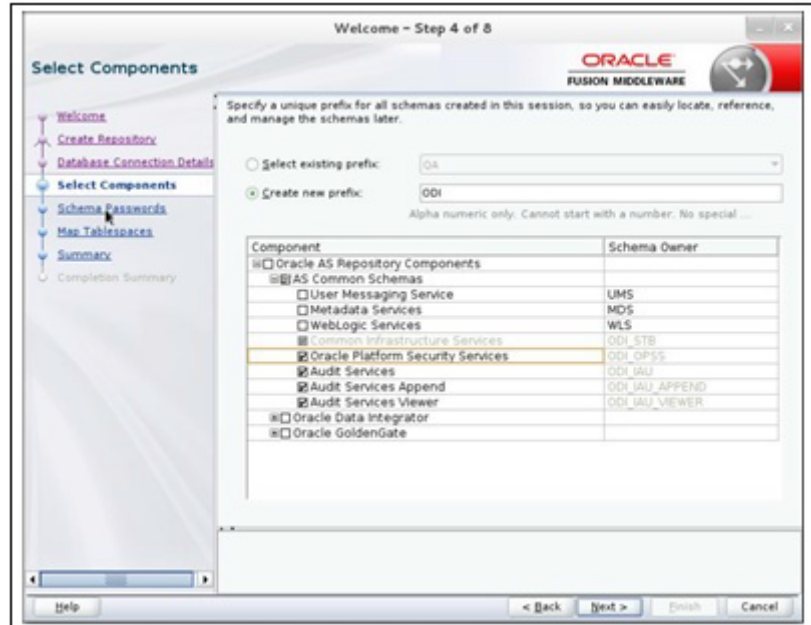
1. Copy B1\_UPD\_SCEN\_FOLDER.sql script to the server from /BI270/Scripts location.
2. Replace <work\_repo\_schema> entry with the work repository username in the script and execute it by connecting to MDADM schema.
3. Backup the customized views and recreate them manually after upgrading Oracle Utilities Analytics to v2.7.0.

## Configuring Oracle Data Integrator Repository Creation Utility (RCU)

To configure the Oracle Data Integrator Repository Creation Utility (RCU), follow these steps:

1. Ensure RCU for ODI is running and the required schemas are created in the target database.

ODI\_ORACLE\_HOME is an Oracle Home path used as Oracle Home while installing FMW Infrastructure and Oracle Data Integrator (ODI).



2. Set or export JAVA\_HOME variable to the 1.8.0\_77 installed directory.
3. Go to \$ODI\_ORACLE\_HOME/oracle\_common/bin.
4. Run the RCU utility.

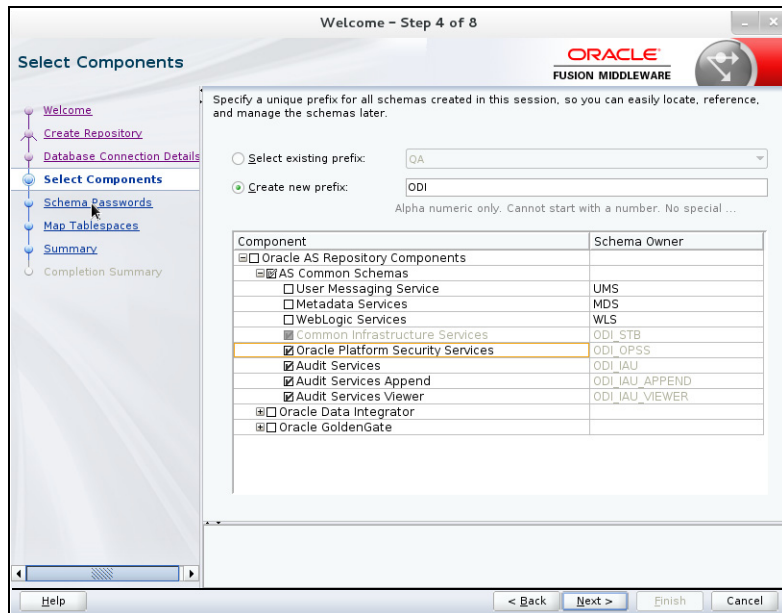
For example:

```
export JAVA_HOME=/scratch/bi_oradata_01/jdk1.8.0_77
cd/scratch/bi_oradata_01/12.2.1_FMW_infrastructure/oracle_common/
bin
./rcu
```

5. On the **Select Components** wizard in RCU, navigate to the **Create Repository** tab and select **System Load and Product Load**. Click **Next**.
6. On the **Database Connection Details** tab, provide the database connection details. Click **Next**.

- On the **Select Components** tab, select the options as shown in the screen below.

Unselect the Oracle Data Integrator component. Click **Next**.



- On the **Schema Passwords** tab, note the passwords given as they are required while creating the Oracle Data Integrator domain.
- Navigate to the **Complete Summary** tab and click **Finish**.

It is not required to create the Oracle Data Integrator domain at this stage. Create it after running the Oracle Utilities Analytics installer and before running the source configuration tool.

## Upgrade ODI Repository

To upgrade the ODI repository, perform the following steps:

- Backup the ODI 12.1.3 repository.
- Invoke the Upgrade Assistance Tool from `<ODI_12.2.1_HOME>/oracle_common/upgrade/bin`.

For example:

```
cd /scratch/bi_oradata_01/12.2.1_FMW_infrastructure/oracle_common/upgrade/bin
./ua
```

- Select the ODI 12.1.3 master repository schema to upgrade repository to 12.2.1 version.

**Note:** Refer to the Oracle documentation for detailed steps to upgrade the ODI repository.

## Setting up Oracle GoldenGate

This section describes the following:

- [Setting up Oracle GoldenGate on Source Database Server](#)
- [Setting up Oracle GoldenGate on Target Database Server](#)
- [Setting up Oracle GoldenGate Monitor JAgent on Target and Source Database Servers](#)

## Setting up Oracle GoldenGate on Source Database Server

Before proceeding, start the source database and ensure it is accessible. Bring down the source application server.

To set up each source instance, follow these steps:

1. Create a directory on the source database server. (For example: ../GoldenGate Home), and install Oracle GoldenGate in that directory. It is Oracle GoldenGate home (OGG\_Home) on the source database server.

**Note:** Note this directory location; it is used during the Oracle Utilities Analytics installation.

2. Install Oracle GoldenGate.

Download Oracle GoldenGate 12.2.0.1.0 from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).

For installation instructions, refer to the respective installation documentation at <http://docs.oracle.com/goldengate/1212/gg-winux/index.html>.

3. Provide the Oracle GoldenGate Home location as the directory location created in the step 1.
4. Open a command terminal or window, and set the source ORACLE\_SID and ORACLE\_HOME variables.
5. Set the LD\_LIBRARY\_PATH as follows:

In Unix:

```
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
```

In Windows:

```
set LD_LIBRARY_PATH=%ORACLE_HOME%\lib;%LD_LIBRARY_PATH%
```

6. In the Command window, change directory to the Oracle GoldenGate home directory, and execute the following command:

In Unix:

```
./ggsci
```

In Windows:

```
ggsci
```

The Oracle GoldenGate prompt is shown.

7. At the Oracle GoldenGate prompt, execute the following commands in the order listed:
  - create SUBDIRS
  - start mgr - Starts the Oracle GoldenGate manager process.
  - info all - Verifies if the manager process is running.
  - exit - Exits Oracle GoldenGate.
8. Ensure that the source database is in the archivelog mode.
9. Connect to the source database as **sys user** and execute the following statements:

```
alter database add supplemental log data (primary key) columns;
alter system set enable_goldengate_replication=TRUE scope=both;
```

10. In the Command window, navigate to the Oracle GoldenGate home (OGG\_Home) directory.



11. Open the GOBALS file in the directory and add the below command:

```
EnableMonitoring
```

12. Navigate to the Oracle GoldenGate home (OGG\_Home) directory.
13. Connect to the database as **sys user** using SQL\*Plus.

Ensure OGG\_Home to be the current directory while invoking SQL\*Plus.

14. Create a new user.

For example: ODM01SRC

This user is the Oracle GoldenGate owner. Ensure to assign a tablespace to this user that is not assigned to any other user.

**Note:** Ensure to note down the Oracle GoldenGate Owner Username. It is used in the Oracle Utilities Analytics installation.

15. Connect to the source database as **sys user**.
16. Execute the following commands:

**Note:** Ensure to modify the GoldenGate owner placeholder with actual name of the database user created in step 14.

```
grant CREATE SESSION,CONNECT,RESOURCE,ALTER SYSTEM to <GoldenGate Owner>;
grant unlimited tablespace to <GoldenGate owner> with admin option;
EXECUTE dbms_goldengate_auth.grant_admin_privilege('<GoldenGate Owner>', 'capture');
grant unlimited tablespace to <GoldenGate Owner> with admin option;
Revoke dba from <GoldenGate Owner>;
grant create any view to <GoldenGate Owner>; grant select any dictionary to <GoldenGate Owner>; GRANT CREATE ANY DIRECTORY TO <GoldenGate Owner>; GRANT DROP ANY DIRECTORY TO <GoldenGate Owner>; GRANT EXP_FULL_DATABASE TO <GoldenGate Owner>; GRANT IMP_FULL_DATABASE TO <GoldenGate Owner>;
```

17. Connect to the <source application>ADM schema (such as CISADM). Execute the following commands:

For **Oracle Utilities Customer Care and Billing** source database, execute the following grants:

```
Grant select on F1_MST_CONFIG to <GoldenGate owner user created in step 16>
Grant select on F1_EXT_LOOKUP_VAL to <GoldenGate owner user created in step 16>
Grant select on F1_BKT_CONFIG to <GoldenGate owner user created in step 16>
Grant select on F1_BKT_CONFIG_VAL to <GoldenGate owner user created in step 16>
```

For **Oracle Utilities Operational Device Management** source database, execute the following grants:

```
Grant select on F1_MST_CONFIG to <GoldenGate owner user created in step 16>
Grant select on F1_EXT_LOOKUP_VAL to <GoldenGate owner user created in step 16>
```

For **Oracle Utilities Meter Data Management** source database, execute the following grants:

```
Grant select on <application ADM Schema>.F1_MST_CONFIG to
<GoldenGate Owner>;
Grant select on <application ADM Schema>.F1_EXT_LOOKUP_VAL to
<GoldenGate Owner>;
```

For **Oracle Utilities Work and Asset Management** source database, execute the following grants:

```
Grant select on <application ADM Schema>. F1_EXT_LOOKUP_VAL to
<GoldenGate Owner>;
Grant select on <application ADM Schema>.F1_MST_CONFIG to
<GoldenGate Owner>;
Grant select on <application ADM Schema>. F1_BKT_CONFIG to
<GoldenGate Owner>;
Grant select on <application ADM Schema>. F1_BKT_CONFIG_VAL to
<GoldenGate Owner>;
```

**Note:** While executing SQL commands in steps 15, 16, and 17, provide the GoldenGate owner user (if prompted for).

All the scripts mentioned below are located in GoldenGate Home directory and must be executed after connecting to the database as **sys user**.

18. Execute the following commands in the order listed below:

```
@marker_setup.sql
@ddl_setup.sql
@role_setup.sql
```

19. Exit SQL\*Plus.
20. In the Command window, create a directory “diroby” in the OGG\_Home directory.
21. Change directory to the Oracle GoldenGate Home directory, and execute the following:
  - a. Steps in [Configuring Encrypting Data Using ENCKEYS Method](#).
  - b. Steps in [Generating Shared Secret Password](#).

**Note:** Execute these steps before running the Oracle Utilities Analytics installer. See <http://docs.oracle.com/goldengate/c1221/gg-winux/index.html> for more details.

### Configuring Encrypting Data Using ENCKEYS Method

To configure for encrypting data using the ENCKEYS method, do the following:

1. Execute the following command:

```
cd <OGG_HOME>
KEYGEN key_length n
```

The above command generates the key value based on the value specified in the parameter “n”. The key value has to be copied to ENCKEYS file against a logical name.

2. For each key value generated above, provide a logical name (Logical name should not be the same for two different key values). Enter the logical name space and then key value in the ENCKEYS file.
3. Repeat the step above for each key values generated.

4. Save the file with name ENCKEYS (Upper case only) without any extension.

For example:

```
cd $OGG_HOME
./keygen 128 1
0x8CE55035DD6893205A7BD6773FA8E670
```

5. Open a new ASCII ENCKEYS file if it does not exist for adding a new entry or open an existing ENCKEYS text file to append.
6. Input the Logical name, space and key value generated.

Sample content of file ENCKEYS:

```
CCB1KEY 0x8CE55035DD6893205A7BD6773FA8E670
```

7. The source ENCKEYS file entry has to be appended to the intermediate server or target server which would be configured with the source system where target OGG is being configured.

**Note:** It is recommended to name Logical key name after <context\_code>KEY.

For example: If context code is CCB1, it is recommended to name it as CCB1KEY.

### Generating Shared Secret Password

To generate the shared secret password:

1. Execute the following command:

```
cd <OGG_HOME>
ggsci
ENCRYPT PASSWORD <GG Owner password> <algorithm> ENCRYPTKEY
<key_name>
```

For example:

```
cd $OGG_HOME
./ggsci
GGSCI (hostname) 1> ENCRYPT PASSWORD CCB01SRC AES128 ENCRYPTKEY
CCB1KEY
Encrypted password:
AADAIAVGNHBF LGFCHBTCVBFJFHUEJGNCFAOAFEOFBALELISFOEIFWGRB
ZHCCMCYGYBDAZH
Algorithm used: AES128
```

2. Note the above generated ENCKEYS file logical name/key value, algorithm name used, and the generated encrypted password.

### Setting up Oracle GoldenGate on Target Database Server

To set up Oracle GoldenGate on the target database server:

1. Create a directory on the target database server.

For example: ../GoldenGateHome

Oracle GoldenGate should be installed in this directory. It is **Oracle GoldenGate home (OGG\_Home)** on the target Oracle Utilities Analytics database server.

**Note:** Ensure to note the directory location; it will be used in the Oracle Utilities Analytics installation.

2. Install Oracle GoldenGate and provide the GoldenGate Home location as the directory location created in the step 1.
3. In the Command window, set the target ORACLE\_SID and ORACLE\_HOME variables. Set LD\_LIBRARY\_PATH using the following commands:

In Unix:

```
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
```

For Windows:

```
set LD_LIBRARY_PATH=%ORACLE_HOME%/lib;%LD_LIBRARY_PATH%
```

4. In the Command window, change the directory to the **GoldenGate home** directory and execute the below command:

For Unix:

```
./ggsci
```

For Windows:

```
ggsci
```

The Oracle GoldenGate prompt is shown.

5. At the prompt, execute the following commands in the order listed below:
  - create SUBDIRS
  - start mgr - Starts the Oracle GoldenGate manager process.
  - info all - Verifies if the manager process is running.
  - exit
6. Create a directory “diroby” in the OGG\_Home directory.
7. Connect to the target database as **sys user** and execute the below query:
 

```
alter system set enable_goldengate_replication=TRUE scope=both;
```
8. In the Command window, navigate to the Oracle GoldenGate Home (OGG\_Home) directory.
9. Edit the GLOBALS file in the <GG home> directory and add the following command.:
 

```
EnableMonitoring
```
10. Navigate to the Oracle GoldenGate home (OGG\_Home) directory.
11. If the ENCKEYS file does not exist:
  - a. Create and open a new ASCII ENCKEYS file.
  - b. Add the key value/values that are generated on the sources to the ENCKEYS file in target OGG home. This is done for the context codes for which source is configured.

A sample ENCKEYS file in target OGG home is as below:

```
CCB1KEY 0x8CE55035DD6893205A7BD6773FA8E670
```

## Setting up Oracle GoldenGate Monitor JAgent on Target and Source Database Servers

Set up Oracle GoldenGate Monitor (OGG) JAgent on Oracle Utilities Analytics GoldenGate server and on all the source application GoldenGate servers. The OGG Monitor JAgent is used to automatically copy the generated OGG scripts to both source and target GoldenGate Home directories, and to start the extract and replicate processes on source and target.

To setup OGG Monitor JAgent on both target and source database servers:

1. Ensure Oracle GoldenGate is installed and manager is running.
2. Start the rmiregistry services using the following command:

```
rmiregistry 5559 &
```

Ensure to note down the port on which RMI server is started. The port number specified here is 5559. If it is not specified, the default port 1099 will be used.

3. Install Fusion Middleware Infrastructure.
4. Run the OGG Monitor 12.2.1 installer.
  - a. Set Oracle Home to the location where Fusion Middleware Infrastructure was installed in step 2.
  - b. Choose installation type as OGG Monitor Agent.
5. Edit the Config.properties file in the <OGG Monitor home>/oggmon/ogg\_agent/cfg\_templates and add/modify the below parameters.

```
<ACTUAL> : jagent.host=localhost
```

```
<CHANGE TO> : jagent.host=<<actual hostname on which OGG is
installed>>
```

```
<ACTUAL> : monitor.jmx.username=cmroot
```

```
<CHANGE TO> : monitor.jmx.username=jmx_src
```

```
<ACTUAL> : jagent.username=root
```

```
<CHANGE TO> : jagent.username=<<OGG software installed OS user>>
```

```
<ACTUAL> : jagent.rmi.port=5559
```

```
<CHANGE TO> : jagent.rmi.port=5557 or any free port other than the
one on which the rmiregistry is started
```

```
<ACTUAL> : agent.type.enabled=OGGMON
```

```
<CHANGE TO> : agent.type.enabled=OEM
```

```
<ACTUAL> : jagent.backward.compatibility=true
```

```
<CHANGE TO> : jagent.backward.compatibility=false
```

6. Add the following parameter:

```
jagent.ssl=false
```

7. Navigate to <OGG Monitor home>/oggmon/ogg\_agent directory and run the below command:

In Unix:

```
export JAVA_HOME=<JDK home>
```

```
./createMonitorAgentInstance.sh
```

In Windows:

```
set JAVA_HOME=<JDK home>
```

```
./createMonitorAgentInstance.bat
```

a. You will be prompted to enter:

- Oracle GoldenGate Home directory.
- Path to be used for Oracle GoldenGate Monitor Agent instance.

It is recommended to provide a path (such as <OGG Monitor home>/Agents/OGGMonitorInstance).

- A unique name to replace the timestamp in the name of the file used to start GG Monitor agent instance.

Provide a unique name to be used for this Oracle GoldenGate Monitor instance.

b. Execute the command below from <path used for OGG Monitor instance provided in the step above>/bin.

Example location: <OGG Monitor home>/Agents/OGGMonitorInstance/bin

In Unix:

```
export JAVA_HOME=<JDK home>
./pw_agent_util.sh -jagentonly
```

In Windows:

```
set JAVA_HOME=<JDK home>
pw_agent_util.bat -jagentonly
```

8. Enter the Oracle wallet password.

This password has to be entered as the password for the JAGENT while running the installer (for target gg), and while running the source configuration (for source gg).

Ensure to note the password and jagent.rmi.port value (JAgent Port). This information is required in subsequent installation.

9. Create a folder with the Context\_code name in <GG Home>/dirdat.

For example: If WAM2 is created for the WAM source, then create a folder with name “WAM2” within the <GG Home>/dirdat/ folder.

10. Navigate to <GG Home>/dirprm and edit jagent.prm file.

Replace COMMAND java with COMMAND <JDK Home>/bin/java.

This ensures that the correct version of java (1.8) is used while starting JAgent.

11. Navigate to OGG\_Home directory and run the following command at the Oracle GoldenGate prompt:

```
ggsci
```

12. Start the jAgent process using the following command:

```
start jagent
```

The logs for JAgent are created at the following (example) location.

```
<OGG Monitor home>/Agents/OGGMonitorInstance/logs
```

## Copying and Decompressing Install Media

To download and decompress the install media:

1. Download the Oracle Utilities Analytics version 2.7.0 Multiplatform part (**Oracle Utilities Analytics V2.7.0 Multiplatform.zip**) from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).
2. Create a temporary directory, such as c:\OUA\temp or /OUA/temp (referred to <TEMPDIR> below). This directory must be located outside any current working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.
3. Unzip **Oracle Utilities Analytics V2.7.0 Multiplatform.zip** to <TEMPDIR>.

**Note:** Rename the model codes in ODI if any of the below model codes are being used in customization.

- CM\_FACT
- CM\_REPLICATION
- CM\_STAGING
- CM\_DIMENSION

### Starting the Installer

For an AIX Operating System, set the following environment variable before starting the Oracle Utilities Analytics installation:

```
export IBM_JAVA_OPTIONS="-Xmx2g -XX:PermSize=64m -XX:MaxPermSize=3200m"
```

To start the Oracle Data Integrator Based ELT component:

1. Go to the temporary folder containing the installer.
2. Run the following command from this folder:

```
java -jar <TEMPDIR>/OUA_2.7.0.0.0_generic.jar -logLevel finest
```

**Note:** The minimum JDK required for running the Oracle Utilities Analytics installer is JDK 1.8.

The **Welcome** page appears.

3. Review this information before you begin the installation. Click **Next** to continue with the installation.
4. Complete the tasks on the navigation pane.

Each item in the navigation pane represents a specific installer screen that prompts you for information required to install the software.

- If you select **Oracle Data Integrator Based ETL** as an **Installation Type**, define the following:
  - Database and Java Home Details
  - Target Database Connection Details
  - Oracle Data Integrator Home and Schema Details
  - Oracle Data Integrator Agent and Repository Details
  - Target GoldenGate Details
  - Target JAgent Details

## Upgrade Steps

To install Oracle Data Integrator Based ETL:

1. Run the Oracle Utilities Analytics Installer. The **Welcome** page appears.  
  
Review the information on the Welcome page before you begin the installation.
2. Click **Next** to continue with the installation.
3. On the **Installation Location** page define an installation location/directory and click **Next**.
4. On the **Select Installation Type** page, select **ODI Based ETL**. Click **Next**.  
  
Note that the options on the left navigation pane change based on the selected installation type.
5. Select **Oracle Data Integrator Based ETL** as the **Installation Type**.
6. Define the following and click **Next**.
  - Database and Java Home Details
  - Target Database Connection Details
  - Oracle Data Integrator Home and Schema Details
  - Oracle Data Integrator Agent and Repository Details
  - Target GoldenGate Details
7. On the **Database and Java Home Details** page, enter the following in the respective fields. Click **Next**.

| Field Name           | Description                        | Value                                                          |
|----------------------|------------------------------------|----------------------------------------------------------------|
| Database Client Home | The database client home location. | Example:<br>/u01/app/product/12.1.0.2.0/<br>dbhome_1           |
| Java Home            | The JDK home location.             | Provide location of JDK 1.8.<br><br>Example: /u01/jdk_1.8.0_77 |

8. On the **Target Database Connection Details** page, enter the following in the respective fields. Click **Next**:

| Field Name                     | Description                                                                          | Value                                                                |
|--------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Host                           | The host name of the server where the database resides.                              | Oracle Utilities Analytics Database Server                           |
| Port                           | The database port number on the database server used for connecting to the database. | Oracle Utilities Analytics Database Port. The default value is 1521. |
| Service Name                   | The service name for the database.                                                   |                                                                      |
| Target Schema Password         | The password for the target schema (DWADM).                                          |                                                                      |
| Confirm Target Schema Password | Confirm the password for the target schema (DWADM) here.                             |                                                                      |



| Field Name                       | Description                                                | Value |
|----------------------------------|------------------------------------------------------------|-------|
| Metadata Schema Password         | The password for the metadata schema (MDADM).              |       |
| Confirm Metadata Schema Password | Confirm the password for the metadata (MDADM) schema here. |       |

9. On the **ODI Home and Schema Details** page, enter the following in the respective fields. Click **Next**:

| Field Name                                | Description                                                                       | Value                                               |
|-------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------|
| ODI Home                                  | The directory where Oracle Data Integrator (ODI) has been installed.              | Example:<br>/u01/<br>12.2.1_FMW_infrastructure_home |
| Supervisor User                           | The name of the Oracle Data Integrator Supervisor.                                | SUPERVISOR                                          |
| Supervisor Password                       | The password of the Oracle Data Integrator Supervisor.                            | SUPERVISOR user password                            |
| Confirm Supervisor Password               | Confirm the password of the Supervisor here.                                      |                                                     |
| Master Repository Schema Name             | Oracle Data Integrator master repository schema name.                             | OUA_MASTER                                          |
| Master Repository Schema Password         | The password of the master repository schema.                                     | OUA_MASTER user's password                          |
| Confirm Master Repository Schema Password | Confirm the password of the Oracle Data Integrator master repository schema here. |                                                     |
| Work Repository Schema Name               | Oracle Data Integrator work repository schema name.                               | OUA_WORK                                            |
| Work Repository Schema Password           | The password of the work repository schema.                                       | OUA_WORK user's password                            |
| Confirm Work Repository Schema Password   | Confirm the password of the Oracle Data Integrator work repository schema here.   |                                                     |

10. On the **ODI Agent and Details** page, enter the following details in the respective fields. Click **Next**:

| Field Name     | Description                                                          | Value                                    |
|----------------|----------------------------------------------------------------------|------------------------------------------|
| ODI Agent Host | The host on which Oracle Data Integrator WebLogic domain is created. | Oracle Data Integrator server host name. |

| Field Name     | Description                                                                                                                                            | Value                                                                                                        |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| ODI Agent Port | The port on which Oracle Data Integrator WebLogic agent is configured to run. This is the port of Oracle Data Integrator WebLogic Managed Server Port. | Provide available port and ensure to use the same port while creating Oracle Data Integrator managed server. |

11. On the **Target GoldenGate Details** page, enter the following details in the respective fields. Click **Next**:

| Field Name               | Description                                                                                                                                                                                                                                             | Value                                                                                                                                                                             |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GoldenGate Host          | The host on the Oracle GoldenGate Manager.                                                                                                                                                                                                              |                                                                                                                                                                                   |
| GoldenGate Home          | This is the Oracle GoldenGate installed location.                                                                                                                                                                                                       | Example:<br>/opt/local/ggs_12.2.0.1.1                                                                                                                                             |
| Target Database Home     | The database home installed location on the target database server.<br><br>In case Oracle GoldenGate for target is not installed on the OUA database server, provide oracle client home location on the server on which Oracle GoldenGate is installed. | Example:<br>/u00/oracle/app/oracle/product/12.1.0.2.0/dbhome_1                                                                                                                    |
| GoldenGate Manager Port  | The port number on which Oracle GoldenGate Manager is running on the Oracle GoldenGate host.                                                                                                                                                            | The default value is 7830                                                                                                                                                         |
| GoldenGate Algorithm     | The algorithm configured in Oracle GoldenGate on the target database server.                                                                                                                                                                            | The default value is BLOWFISH.                                                                                                                                                    |
| GoldenGate Encryptkey    | The Encrypt Key configured in Oracle GoldenGate on the target database server.                                                                                                                                                                          | The default value is "DEFAULT".                                                                                                                                                   |
| GoldenGate Shared Secret | The shared secret key configured in Oracle GoldenGate on the target database server.                                                                                                                                                                    | Go to the Oracle GoldenGate prompt and run the command:<br><br><pre>encrypt password &lt;password of MDADM user&gt;, encryptkey DEFAULT</pre><br>Provide the result as the value. |

12. On the **Target JAgent Details** page, enter the following details in the respective fields. Click **Next**.

| Field Name                     | Description                                                                                 | Value                                 |
|--------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------|
| JAgent Host                    | The host of Oracle GoldenGate Monitor JAgent.                                               |                                       |
| JAgent GoldenGate              | The Oracle GoldenGate installed location where Oracle GoldenGate Monitor JAgent is running. | Example:<br>/opt/local/ggs_12.2.0.1.1 |
| JAgent Port                    | Use the JAgent RMI port which is defined in the config properties file.                     |                                       |
| JAgent User                    | The OS user used to configure JAgent.                                                       |                                       |
| JAgent Wallet Password         | The JAgent Wallet password.                                                                 |                                       |
| Confirm JAgent Wallet Password | Re-enter JAgent Wallet password to confirm.                                                 |                                       |

13. On the **Installation Summary** page, verify the installation options you selected.

14. Click **Install** to begin the installation.

To change any configurations before starting the installation, use the navigation pane and select the topic to edit.

The **Installation Progress** page appears displaying the progress of the installation. Operations being performed as a part of the installation are logged to the terminal from which the installer was run. The detailed logs of the installation are also available in the logs/system directory under the installation location.

To quit before the installation is complete, click **Cancel**. Doing so will result in a partial installation; the portion of the software that was installed on your system before you click **Cancel** will remain on your system, and you will have to remove it manually.

15. On the **Installation Completed** page, click **Finish** to close the installer.

The Oracle Data Integrator based ETL is now installed.

## Creating WebLogic Domain for Oracle Data Integrator Agent

Create the WebLogic Domain to bring up the WebLogic Agent (ODI Agent) to complete the steps. In this product release, ODI Domain creation is automated, and creation of both clustered and non-clustered domain is supported.

- [Creating a Non-Clustered Domain](#)
- [Creating a Clustered Domain](#)

**Note:** The following procedures assume that the pre-requisite Java 8/bin is in the PATH variable.

## Creating a Non-Clustered Domain

To create a non-clustered domain:

**Note:** The password fields' values (RCUSCHEMAPWD,WEBLOGIC\_PASSWORD) will be cleared from ODI\_CONFIG.properties after executing createDomain.sh or createMachine.sh. Ensure these fields are updated for each invocation of createDomain.sh or createMachine.sh.

1. Navigate to the <OUA Environment>/etc directory and provide the following properties in the ODI\_CONFIG.properties file.

| Property            | Description                                                                                                                                           |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mandatory fields    |                                                                                                                                                       |
| DOMAIN_PATH         | In Windows environment, replace “\” with “/” in the domain path.<br><br>For example:<br>C:/odi12.2.1/odi12.2.1_home/user_projects/domains/odi_domain5 |
| RCUPREFIX           | Repository prefix created in the <a href="#">Configuring Oracle Data Integrator Repository Creation Utility (RCU)</a> section.                        |
| RCUSCHEMAPWD        | Repository schema password provided in the <a href="#">Configuring Oracle Data Integrator Repository Creation Utility (RCU)</a> section.              |
| WEBLOGIC_USERNAME   | WebLogic user name for ODI domain                                                                                                                     |
| WEBLOGIC_PASSWORD   | WebLogic password for ODI domain                                                                                                                      |
| ODI_DBSERVER        | ODI database server name (target database server)                                                                                                     |
| ODI_DBPORT          | ODI database port (target database port)                                                                                                              |
| ODI_DBNAME          | ODI database name (target database name)                                                                                                              |
| ADMIN_PORT          | ODI domain admin port                                                                                                                                 |
| ODI_DOMAIN_HOSTNAME | Host name on which the ODI domain is created                                                                                                          |
| Optional fields     |                                                                                                                                                       |
| NONSSL_PORT         | If not specified, default port 7001 will be assigned.                                                                                                 |
| MANAGED_SERVER_PORT | If not specified, default port 15101 will be assigned.                                                                                                |

2. Navigate to the <OUA Environment>/bin directory and invoke the createDomain.sh/cmd script.

Refer to the sections [Starting the WebLogic Admin Server](#) and [Starting the Managed Server \(ODI\\_server1\)](#) to start the admin server and managed server.

## Creating a Clustered Domain

To create a clustered domain:

**Note:** The password fields' values (RCUSCHEMAPWD,WEBLOGIC\_PASSWORD) will be cleared from ODI\_CONFIG.properties after executing createDomain.sh or createMachine.sh. Ensure these fields are updated for each invocation of createDomain.sh or createMachine.sh.

1. Navigate to the <OUA Environment>/etc directory and provide the following properties in the ODI\_CONFIG.properties file.

| Property            | Description                                                                                                                                        |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Mandatory fields    |                                                                                                                                                    |
| DOMAIN_PATH         | In Windows environment, replace “\” with “/” in the domain path.<br><br>For example: C:/odi12.2.1/odi12.2.1_home/user_projects/domains/odi_domain5 |
| RCUPREFIX           | Repository prefix created in the <a href="#">Configuring Oracle Data Integrator Repository Creation Utility (RCU)</a> section.                     |
| RCUSCHEMAPWD        | Repository schema password provided in the <a href="#">Configuring Oracle Data Integrator Repository Creation Utility (RCU)</a> section.           |
| WEBLOGIC_USERNAME   | WebLogic user name for ODI domain                                                                                                                  |
| WEBLOGIC_PASSWORD   | WebLogic password for ODI domain                                                                                                                   |
| ODI_DBSERVER        | ODI database server name (target database server)                                                                                                  |
| ODI_DBPORT          | ODI database port (target database port)                                                                                                           |
| ODI_DBNAME          | ODI database name (target database name)                                                                                                           |
| ADMIN_PORT          | ODI domain admin port                                                                                                                              |
| ODI_DOMAIN_HOSTNAME | Host name on which the ODI domain is created                                                                                                       |
| CLUSTER_NAME        | Additional mandatory field for clustered domain                                                                                                    |

2. Navigate to the <OUA Environment>/bin directory and invoke the **createDomain.sh/cmd** script.

This creates an ODI domain with an Admin server and a Managed server (as 'ODI\_server1') and assigned to the cluster.

Refer to the [Starting the WebLogic Admin Server](#) and [Starting the Managed Server \(ODI\\_server1\)](#) sections to start the Admin server and Managed server.

To create another managed server and add it to the cluster:

1. Bring up the Admin server.
2. Navigate to the <OUA Environment>/etc directory and provide the following mandatory properties in the ODI\_CONFIG.properties file:

- MANAGED\_SERVER\_NAME
  - MANAGED\_SERVER\_PORT
3. Provide the following optional properties in the ODI\_CONFIG.properties file:
    - MACHINE\_NAME
    - MACHINE\_PORT
  4. Navigate to <OUA\_Environment>/bin and invoke createMachine.sh/cmd.

A new managed server is created with the specified name and assigned to the cluster.

Refer to the sections [Starting the WebLogic Admin Server](#) and [Starting the Managed Server \(ODI\\_server1\)](#) to start the Admin server and Managed server.

## Starting the WebLogic Admin Server

To start the WebLogic Admin Server:

1. In the command shell, change the directory to the directory of the WLS Home.

```
<MW_HOME>/user_projects/domains/<ODI_DOMAIN_NAME>/bin
```

2. Execute the **startweblogic** command for UNIX and Windows:

In Unix:

```
nohup ./startWebLogic.sh > startWebLogic.log &
```

In Windows:

```
startWebLogic.cmd
```

## Starting the Managed Server (ODI\_server1)

To start the odi\_server1 managed server:

1. Change to directory to <MW\_HOME>/user\_projects/domains/<ODI\_DOMAIN\_NAME>/servers/ ODI\_server1/security/.
2. Create the boot.properties file. Enter the username and password in the respective fields in the file. Save the file.

Below is an example of the boot.properties file:

```
username=<weblogic username>
password=<weblogic password>
```

3. Change the directory to WLS Home to start odi\_server1:

In Unix:

```
<MW_HOME>/user_projects/domains/<ODI_DOMAIN_NAME>/bin
```

```
nohup ./startManagedWebLogic.sh odi_server1 >
StartManagedWeblogic.log &
```

In Windows:

```
StartManagedWeblogic.cmd odi_server1
```

4. In the Oracle Data Integrator Studio, navigate to **Topology > Agents > OracleDIAgent**.
5. Right-click **OracleDIAgent** and click **Test** to test the connectivity of the configured Oracle Data Integrator Java EE agent.

## Executing Post-Upgrade Script

To execute the post-upgrade script:

1. Execute B1\_MDFIX\_ODM\_270 in global context.
2. Login to ODI Client and navigate to **Designer > Load Plans and Scenario** folders.
3. Expand **Framework > Data Fix > B1\_MDFIX\_ODM\_270**.
4. Right-click **B1\_MDFIX\_ODM\_270**, click **Run**, and then select the context as **Global**.
5. Click **OK**.

## Creating a Database Directory

Create a database directory 'B1\_DATA\_DUMP\_DIR' on the target database, as well as on each source database. This directory is used for logging the export import task used during the initial ELT load.

The following sample SQL creates a database directory pointing to the file system path /scratch/file\_data:

```
CREATE DIRECTORY B1_DATA_DUMP_DIR AS '/scratch/file_data';
```

## Configuring Source Applications

This section describes the instructions to be followed to configure source applications.

- [Prerequisites](#)
- [Configuration Steps](#)
- [Post-configuration Steps](#)

Bring down the source application server, and ensure the source applications are stopped but source databases are up and accessible.

### Prerequisites

Before running the source configuration tool, ensure to do the following:

- Apply patch 26384944.
- Create the Oracle Data Integrator domain.
- Check if admin and managed servers are running and accessible.

### Configuration Steps

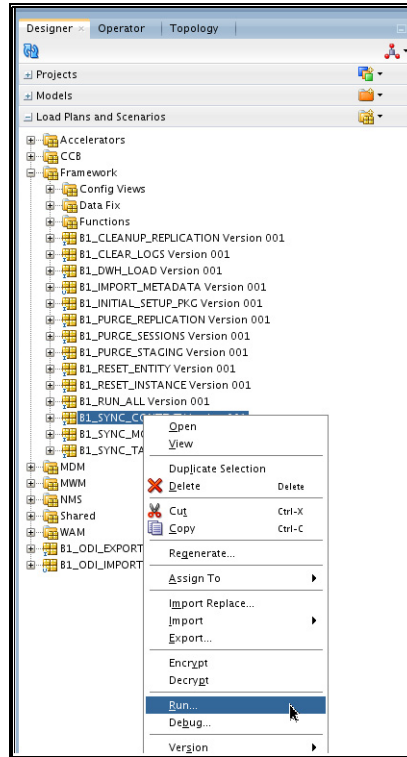
To configure the source applications:

1. Register a source application.

For instructions to register a source, refer to the **Registering a Source** section in **Chapter 5: Configuring Oracle Utilities Analytics** in *Oracle Utilities Analytics Administration Guide*.

2. Ensure to use the same context\_codes to configure the existing sources during the upgrade.
3. After running config.sh GUI utility, run B1\_SYNC\_CONTEXT as follows.
  - a. Login to Oracle Data Integrator Studio.
  - b. Navigate to **Designer > Load Plans and Scenarios > Framework**.

- c. Right-click **B1\_SYNC\_CONTEXT** and select **Run**.



4. Select the context related to the source application, <no agent> as logical agent, and then click **OK**.
5. Run the **B1\_INITIAL\_SETUP\_PKG** package.
  - Note:** It is recommended to run **B1\_INITIAL\_SETUP\_PKG** only once (after all the sources have been configured or after at least one source is configured).
  - a. Login to Oracle Data Integrator Studio.
  - b. Navigate to **Designer > Load Plans and Scenarios > Framework**.
  - c. Right-click **B1\_INITIAL\_SETUP\_PKG**, select **GLOBAL** context code, and then select **Run**.
6. Start all Oracle GoldenGate processes on source and target:
  - a. Login to each source application GoldenGate server.
  - b. Go to the respective Oracle GoldenGate Home directory.
  - c. Start manager, JAgent, and all respective context extract processes.
  - d. Login to the target (Oracle Utilities Analytics) GoldenGate server.
  - e. Go to the Oracle GoldenGate Home directory.
  - f. Start manager, jagent and all respective context extract processes.

## Post-configuration Steps

Follow these post-configuration steps:

1. Drop all the materialized views from the DWADM schema.
  - a. Connect to the MDADM schema.
  - b. Execute the query below to find the materialized views to be dropped for Oracle Utilities Network Management System.



```
SQL> select MVIEW_NAME from all_mviews where owner='DWADM' and
mview_name IN (select distinct entity_name from
MDADM.B1_CONFIG_VW where PROD_FLG='NMS' and ENTITY_TYPE_FLG
='M-VW');
```

- c. In addition to the above materialized views, drop B1\_WO\_MON\_MV3 for Oracle Utilities Work and Asset Management.
2. Drop the error table from the DWSTAGE schema.
    - a. Connect to the DWSTAGE schema.
    - b. Execute the below SQL statement to get the list of error tables:

```
SQL> select TABLE_NAME from user_tables where TABLE_NAME like
'ERR_%';
```

- c. Drop all the objects from above query result.

For example:

```
drop table <table_name> purge;
```

## Upgrading Oracle Utilities Analytics Administration Tool Component

Oracle Utilities Analytics Administration Tool is an Oracle Application Express (APEX) based configuration tool used to configure Oracle Utilities Analytics.

This section describes how to install the tool to configure Oracle Utilities Analytics and change the default password of the Admin user.

- [Installation Steps](#)
- [Changing Default Password of Admin User](#)

**Note:** Install Oracle Utilities Analytics Administration component on the Oracle Utilities Analytics database server.

### Installation Steps

To install the Oracle Utilities Analytics Administration Tool:


1. Download Apex 5.0.4. Copy it to the server where you want to set it up under the /scratch/bi\_oradata\_01/Softwares/apex\_5.0.4 directory.
2. Connect to the Oracle Utilities Analytics database as the **sys user** and execute the following commands:

```
EXEC DBMS_XDB.SETHTTPPORT(0);
SELECT DBMS_XDB.GETHTTPPORT FROM DUAL;
```

This query should result in zero(0).

3. Navigate to the Apex unzipped path and execute the following scripts. Connect to Oracle Utilities Analytics database as a **sys user**.

```
@apexins.sql <Tablespace name> <Tablespace name> <Temp Tablespace
name> /i/
(for example: @apexins.sql CISTS_01 CISTS_01 TEMP /i/)
@apxchpwd.sql
ALTER USER APEX_PUBLIC_USER ACCOUNT UNLOCK;
ALTER USER APEX_PUBLIC_USER IDENTIFIED BY APEX_PUBLIC_USER;
@apex_rest_config.sql
```



Ensure to note the password for these two users: APEX\_Listener user and APEX\_REST\_PUBLIC\_USER.



4. Download Oracle Rest Data service. Copy it to the server where you want to set it up under the /scratch/bi\_oradata\_01/Softwares/apex\_listner directory.
5. Navigate to the scratch/bi\_oradata\_01/Softwares/apex\_listner directory. Unzip the ords.3.0.6.176.08.46.zip file.
6. Create a directory on the server to configure Apex.  
For example: mkdir/scratch/bi\_oradata\_01/apex\_configuration
7. Navigate to the /scratch/bi\_oradata\_01/Softwares/apex\_listner directory.  

```
cd /scratch/bi_oradata_01/Softwares/apex_listner
```
8. Execute the following command:  

```
java -jar ords.war install advanced
```

**Note:** Use JDK1.8 or later to execute this command.

Provide the required inputs as shown below.



9. Navigate to the /scratch/bi\_oradata\_01/Softwares/apex\_listner directory:

```
cd /scratch/bi_oradata_01/Softwares/apex_listner
```

10. Execute the following command:

```
java -jar ords.war static <apex5.0.4 unzipped path>/apex/images
```

For example: java -jar ords.war static /scratch/bi\_oradata\_01/Softwares/ apex\_5.0.4/apex/images

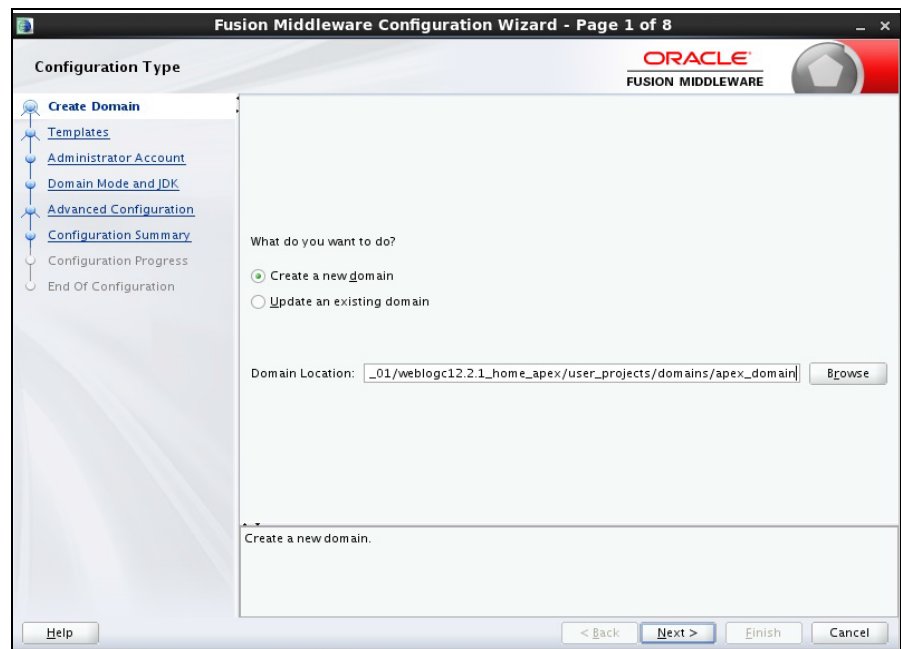
**Note:** The command creates the i.war file.

11. Install WebLogic 12.2.1 with jdk 1.8.0+.
12. Create the WebLogic domain.
  - a. Go to <12.2.1\_weblogic\_home>oracle\_common/common/bin directory.
  - b. Execute the following command:

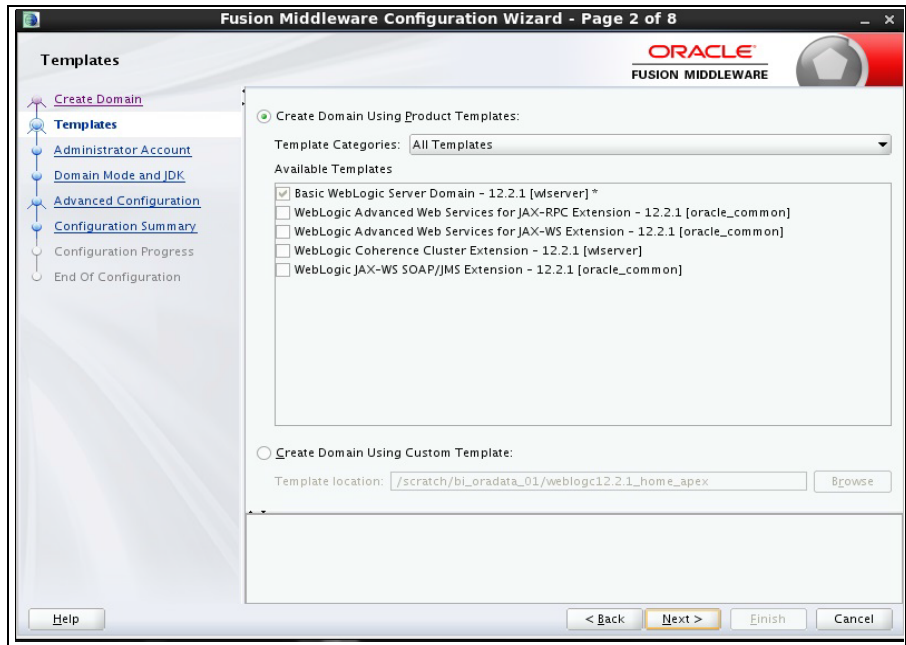
```
./config.sh
```

The **Fusion Middleware Configuration Wizard** window appears.

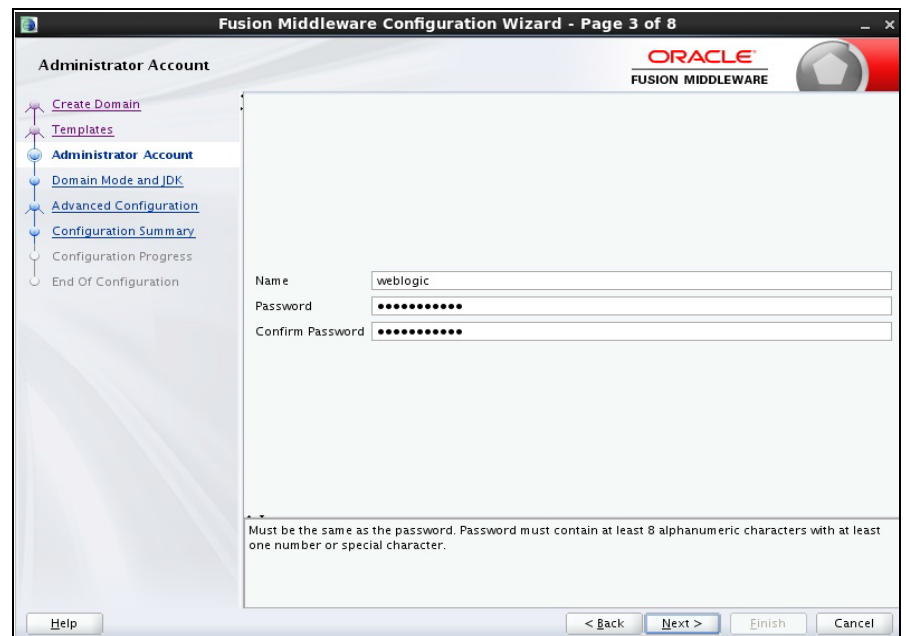
- a. On the **Create Domain** tab, select **Create a new domain**. Click **Next**. Do not change the domain location.



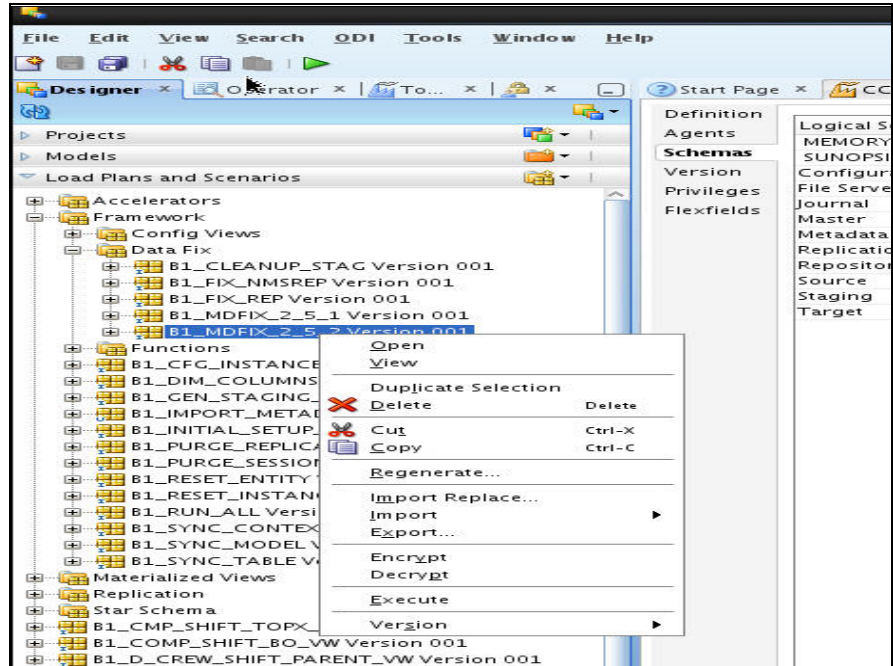
b. On the **Template** tab, select the template category as shown. Click **Next**.



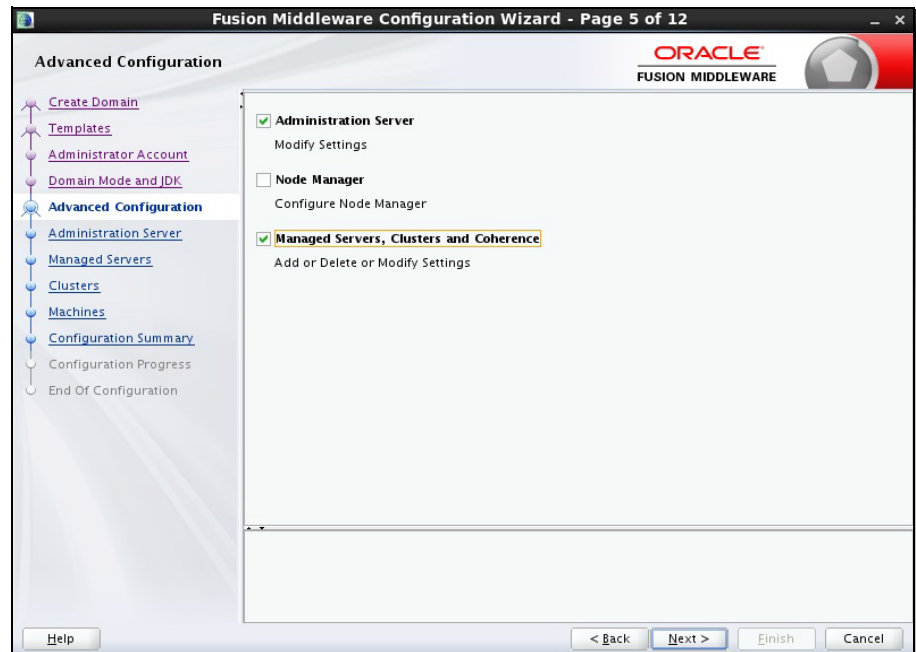
c. On the **Administrator Account** tab, provide the WebLogic username and password. Ensure to note the same. Then, click **Next**.



- d. On the **Domain Mode and JDK** tab select **jdk1.8** and click **Next**.

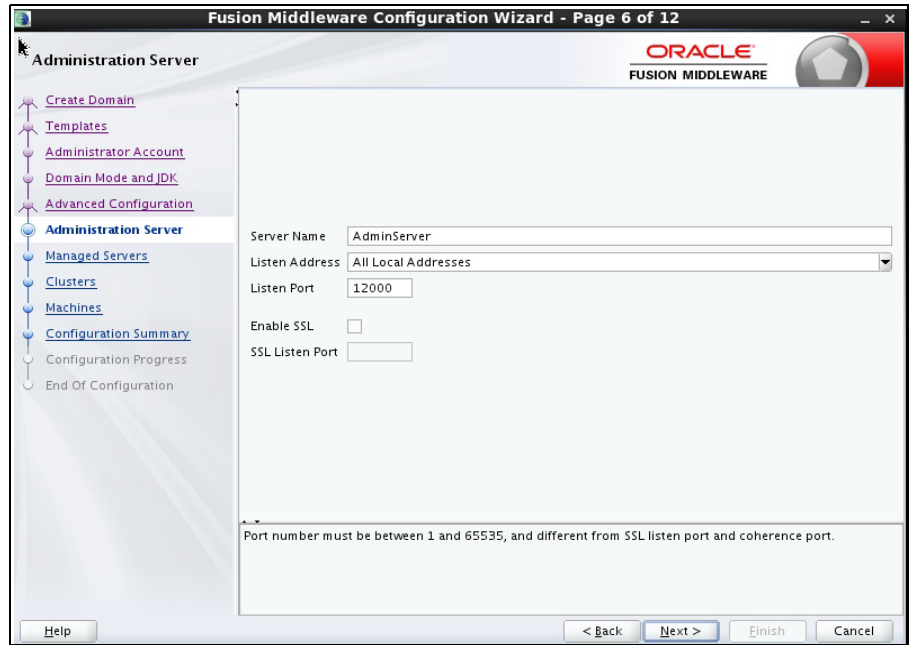


- e. On the **Advanced Configuration** tab, select **Administration Server** and **Managed Servers, Clusters and Coherence** options. Then, click **Next**.

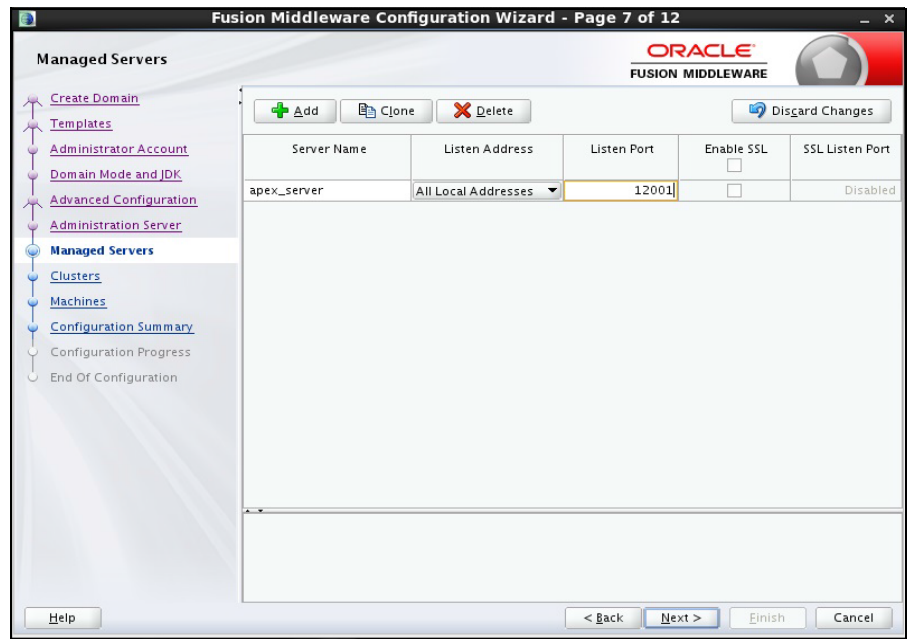


- f. On the **Administration Server** tab, provide the available port as **Listen Port**. Click

Next.

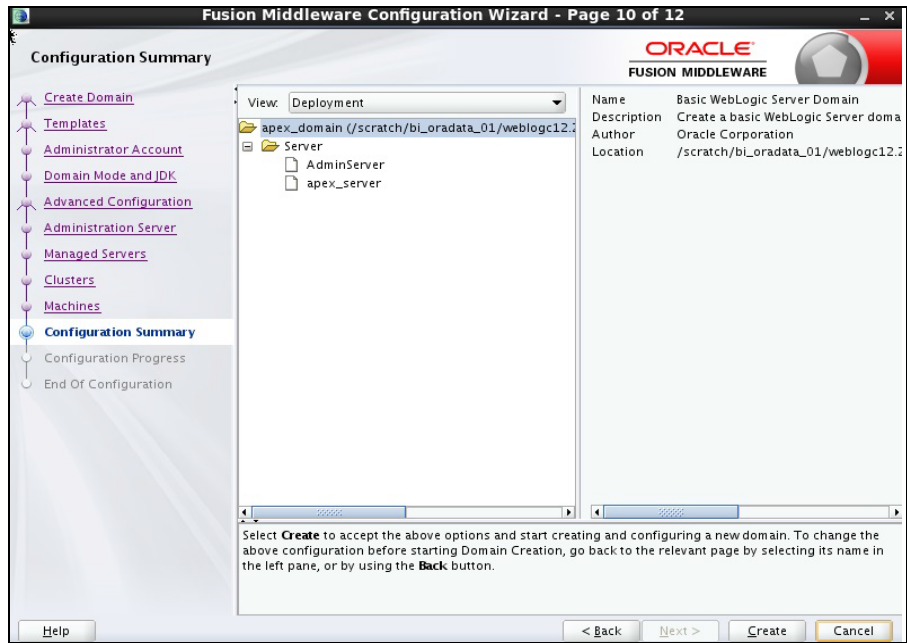


- g. On the **Managed Servers** tab, click **Add** and provide values as shown below. Click **Next**.



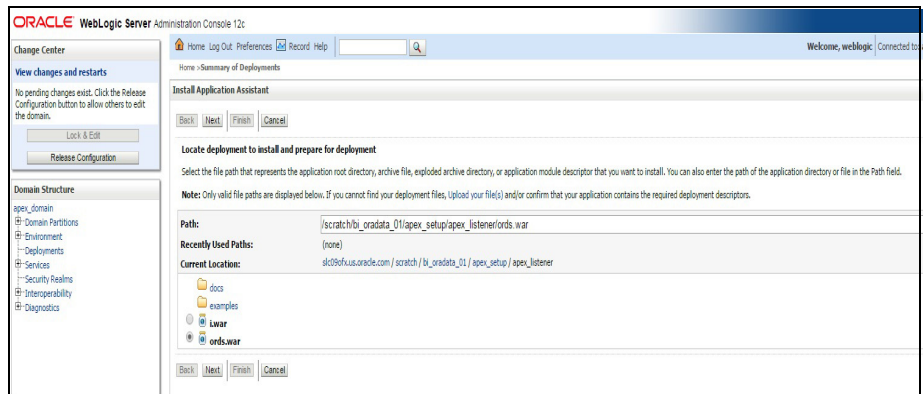
- h. Click **Next** on the **Clusters** and **Machines** tabs respectively. There are no changes to these pages.

- i. On the **Configuration Summary** tab, click **Create** to create the **boot.properties** file.

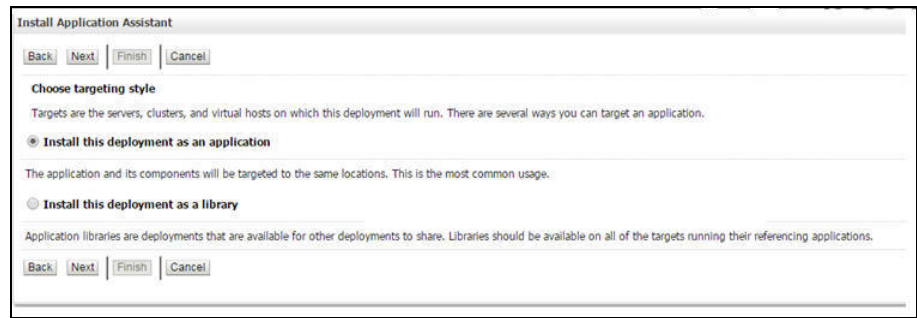


13. Start the Admin and Managed server.
14. Login to WebLogic console and click **Lock & Edit**.
15. Click **Install**.
16. Enter the following path and then select the **ords.war** file.

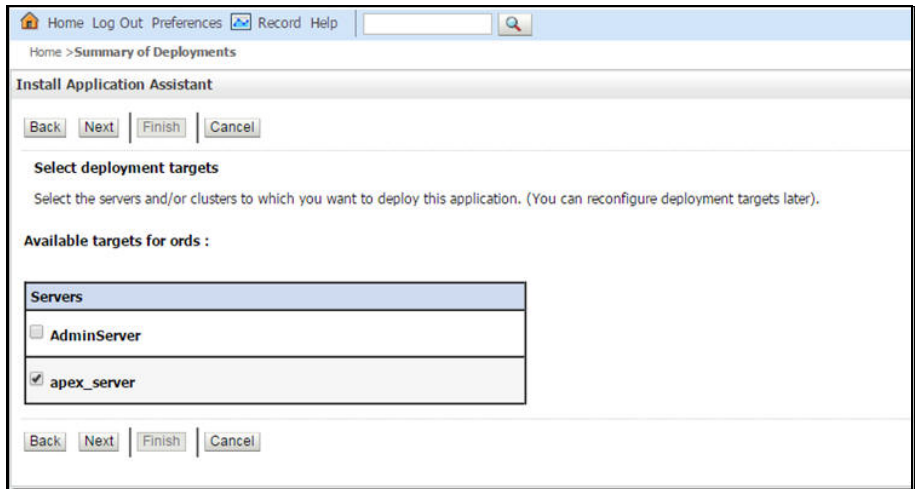
/scratch/bi\_oradata\_01/Softwares/apex\_listner



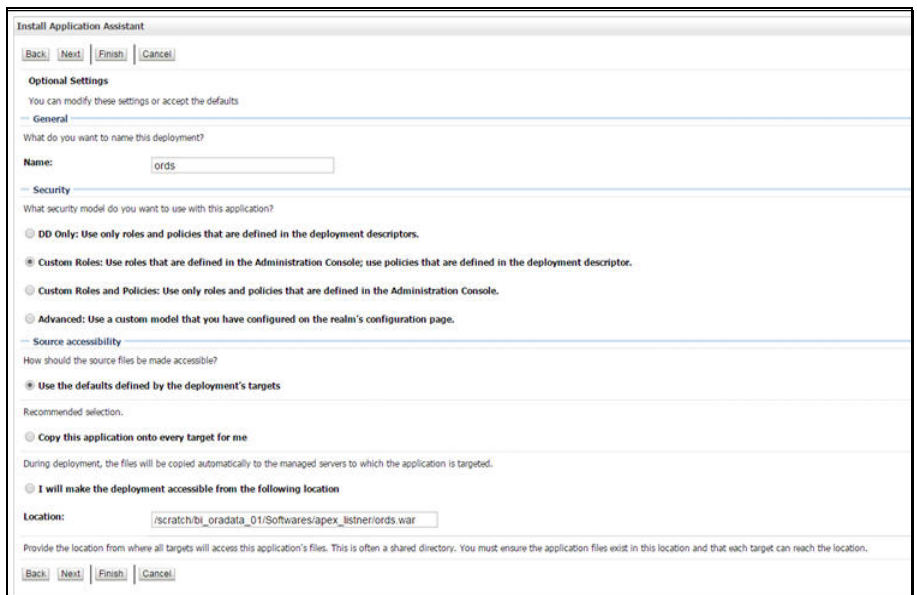
Click **Next**.



17. Select the **Apex server** check box and click **Next**.

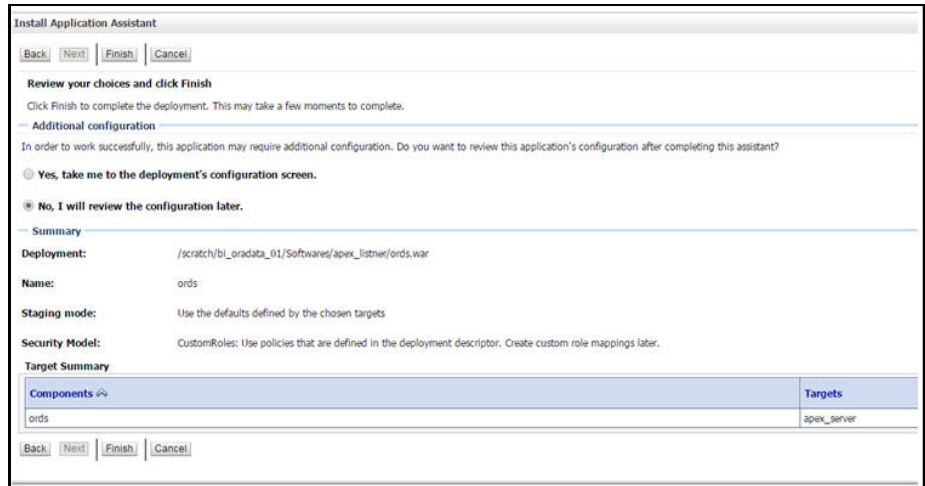


18. Select the options as shown below:

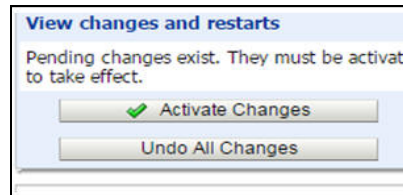




19. Select the options as shown below:



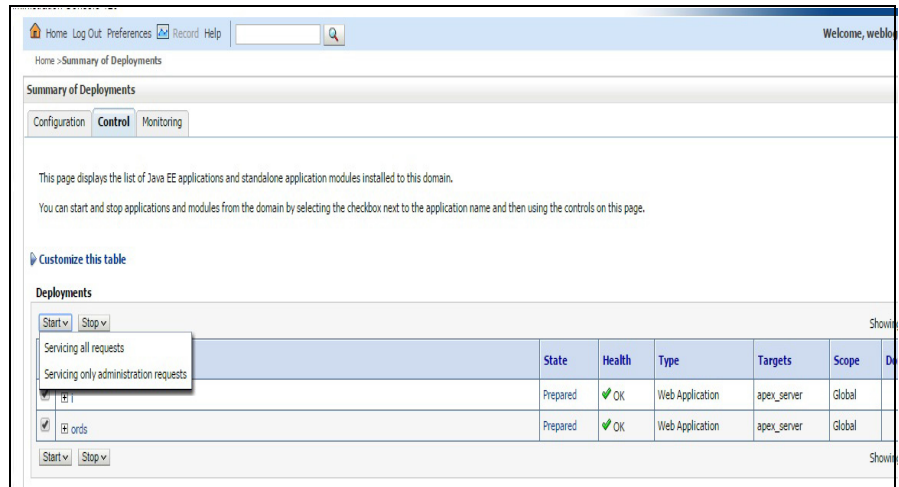
20. Click **Activate Changes**.



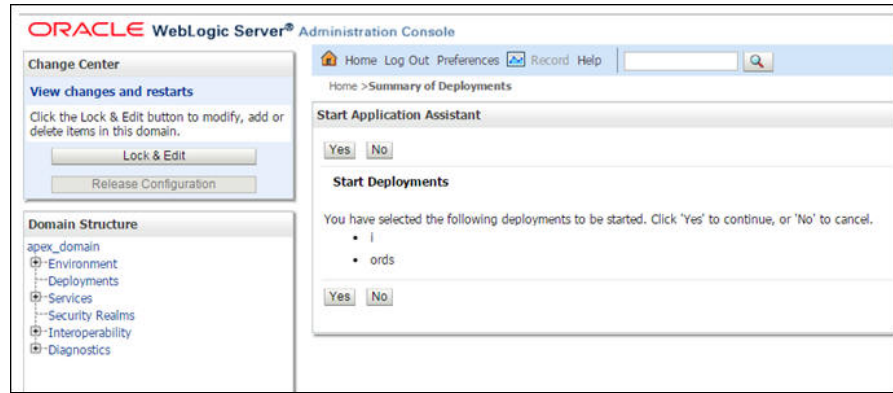
21. Repeat the steps 14 to 20 to deploy the **i.war** file.

22. Login to the WebLogic console and navigate to **Deployment > Monitoring**.

23. Select **i** and **ords**. Then, click **Start > Servicing All Requests**.



24. Click **Yes**.



25. Restart the Admin and Managed servers.

26. Go to the following URL to access the Administration Tool:

<http://<hostname>:<managed server port no>/ords/f?p=104>

The credentials to access the tool are:

User ID: Admin

Password: Admin\_123

### Changing Default Password of Admin User

This section describes the APEX API used to change the password of the admin user. The script should be run after connecting to the database as user SYSTEM.

Replace the string 'New password' with the new password for the admin account before running the script.

```
begin
wwv_flow_api.set_security_group_id(p_security_group_id=>nvl(wwv_flow_application_install.get_workspace_id,2090606133849294));
end;
/

begin
apex_util.edit_user(
p_user_id => '2090514487849294',
p_user_name => 'ADMIN',
p_web_password => 'New password',
p_new_password => 'New password'
);
end;
/

commit;
/
```

**Note:** It is strongly recommended to change the default password after logging in.

# Upgrading Oracle Utilities Analytics Dashboards Component

Ensure that the same Operating System (OS) user used to install the prerequisite software is used to install the Oracle Utilities Analytics Dashboards component as well.

The Oracle Utilities Analytics Dashboards component is installed on the Oracle Utilities Analytics application server.

This section describes how to install the dashboards component of Oracle Utilities Analytics.

- [Prerequisites](#)
- [Copying and Decompressing Install Media](#)
- [Starting the Installer](#)
- [Upgrade Steps](#)
- [Deploying Web Catalog](#)
- [Deploying Repository \(RPD\) File](#)
- [Configuring and Deploying the MapViewer](#)
- [Enabling WriteBack](#)
- [Enabling Auto Complete Feature in OBIEE](#)

## Prerequisites

Oracle Utilities Analytics Dashboard component v2.7.0 requires Oracle Business Intelligence Enterprise Edition version 12.2.1.

**Note:** OBIEE 11.1.1.x.x should be upgraded to 12.2.1 before proceeding with Oracle Utilities Analytics Dashboard component upgrade.

Refer to OBIEE documentation for details about the upgrade from 11.1.1.x.x to 12.2.1.

To upgrade OBIEE from 11.1.1.x.x to 12.2.1 follow these steps:

1. Stop the OBIEE admin, managed, node managers, and opmn services.
2. Backup the OBIEE middleware home folder.
3. Install Fusion Middleware Infrastructure 12.2.1 for OBIEE.
4. Download and install OBIEE 12.2.1 using Fusion Middleware 12.2.1 Home.
5. Run RCU to create the necessary schemas.
  - a. Navigate to <FMW infrastructure home>/oracle\_common/bin.

Example location: `cd /u01/12.2.1.9_Infrastructure/oracle_common/bin`

- b. Run the command below and follow the instructions in the wizard:

```
./rcu
```

Select **AS Common Schemas** and Oracle Business Intelligence components on the **Select Components** panel.

6. Run the OBIEE configuration assistant to create an OBIEE domain.
7. Navigate to <FMW infrastructure home>/bi/bin.  
  
Example location: `cd /u01/12.2.1_Infrastructure/bi/bin`
8. Run the command below and follow the instructions in the wizard:  
  
`./config.sh/cmd`
  - a. On the Database Details tab, select **Use existing schemas** and provide the connection details.
  - b. On the Initial Application panel, select **Oracle sample application** (SampleAppLite).
  - c. Ensure to note the BI domain path, and WebLogic username and password, so they can be provided as inputs when the Oracle Utilities Analytics Dashboards component installer is run.
9. After the creating the OBIEE domain successfully, start the OBIEE admin server.
10. Login to admin console.
  - a. Expand the **Environnement** tab and navigate to **Coherence Clusters** that displays all coherence clusters.
  - b. Click **defaultCoherenceCluster** and select **Configuration**.  
  
Ensure the port in the **Cluster Listen Port** field is not in use. If needed, change it to another port that is not in use.
  - c. Click **Save** to save the port changes (if any).
11. Start the OBIEE managed server.
12. After starting the OBIEE domain services successfully, navigate to the <OBIEE domain>/config/fmwconfig directory.
13. Open jps-config.xml.
14. Under the <serviceInstance name=""idstore.ldap" provider=""idstore.ldap.provider"> element, add the following property element.  
  
<property name=""oracle.security.jps.ldap.policystore.refresh.interval" value=""6000000""/>
15. Migrate the metadata from Oracle BI 11g to 12c using the steps below:
  - a. Locate the BI Migration Script available at the following location  
  
<12c\_OBIEE\_HOME>/user\_projects/domains/bi/bitools/bin/migration-tool.sh
  - b. Execute the migration-tool.sh package (as shown below) from  
<12c\_OBIEE\_HOME>/user\_projects/domains/bi/bitools/bin/ to create the BI migration tool jar file.

- c. Replace ORACLE\_HOME with the actual path to the 12c Oracle Home you created while installing 12c.

- d. Copy the bi-migration-tool.jar file from <12c\_OBIEE\_HOME>/user\_projects/domains/bi/bitools/bin to Oracle 11g home.

For example:

```
cp bi-migration-tool.jar /scratch/bi_oradata_01/
OBIEE_11.1.1.7.1_Home/Oracle_BI1/
```

- e. Export ORACLE\_HOME to 11g OBIEE home. Execute the migration script to create an export bundle by running the following command:

```
java -jar $ORACLE_HOME/bi-migration-tool.jar out
<11g_obiee_home> <11g_obiee_domain_home> /tmp/test_export.jar
```

For example:

```
java -jar $ORACLE_HOME/bi-migration-tool.jar out /scratch/
bi_oradata_01/OBIEE_11.1.1.7.1_Home/Oracle_BI1 /scratch/
bi_oradata_01/OBIEE_11.1.1.7.1_Home/user_projects/domains/
bifoundation_domain /scratch/migration-tool-test/
test_export.jar
```

The export should succeed without any errors.

- f. Stop the OBIEE 12c services (if they are running) and export ORACLE\_HOME pointing to 12c OBIEE home.
- g. Run the following command to import 11g data in to the 12c system.

Provide the WebLogic user and password whenever prompted for.

```
./<12c_OBIEE_HOME>/user_projects/domains/bi/bitools/bin/
migration-tool.sh in <export bundle> <service instance name>
```

For example:

```
./scratch/bi_oradata_01/12.2.1_FMW_infrastructure_OBI/
user_projects/domains/obiee_domain/bitools/bin/migration-
tool.sh in /scratch/migration-tool-test/test_export.jar ssi
```

If the migration is successful, the output is as follows:



For more detailed information about OBIEE data migration from 11g to 12c, refer to <https://docs.oracle.com/middleware/1221/core/BIMIG/GUID-D0867450-1AEF-43DE-8144-7816F7105CB1.htm#BIMIG-GUID-D0867450-1AEF-43DE-8144-7816F7105CB1>

## Copying and Decompressing Install Media

To download and decompress the install media:

1. Download the Oracle Utilities Analytics Dashboards component v2.7.0 (**Oracle Utilities Analytics V2.7.0 Multiplatform.zip**) from the Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).
2. Create a temporary directory, such as c:\OUA\temp or /OUA/temp (referred to <TEMPDIR> below).

This directory must be located outside any current working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.

3. Unzip **Oracle Utilities Analytics V2.7.0 Multiplatform.zip** to <TEMPDIR>.

## Starting the Installer

For an AIX Operating System, set the following environment variable before starting the Oracle Utilities Analytics installation:

```
export IBM_JAVA_OPTIONS="-Xmx2g -XX:PermSize=64m -
XX:MaxPermSize=3200m
```

To start the installer:

1. Navigate to the temporary folder where you downloaded the install. Run the following command from the folder:

```
java -jar <TEMPDIR>/OUA_2.7.0.0.0_generic.jar -logLevel finest
```

**Note:** The minimum JDK required for running the Oracle Utilities Analytics installer is JDK 1.8.

2. On the **Welcome** page, review the information before you begin the installation.
3. Click **Next** to continue with the installation.
4. Complete the installation by following the tasks on the navigation pane.

Each item in the navigation pane represents a specific installer screen that prompts you for the information required to install the software.

## Upgrade Steps

To install the Dashboards component:

1. Run the Oracle Utilities Analytics Installer.
2. On the **Welcome** page, review the available information before you begin the installation.
3. Click **Next** to continue with the installation. The **Installation Location** page appears.
4. Define the **Installation Location** here and click **Next**. The **Select Installation Type** page appears.

**Note:** The specified Oracle home directory must be an empty directory or a directory where the OUA ODI ETL 2.7.0.0.0 component was installed successfully.

5. On the **Select Installation Type** page, select **Dashboards** and click **Next**. Enter the following details in the respective fields and click **Next**.

**Note:** Based on the selected installation type, the options on the left navigation panel change. When you select **Dashboard** as an **Installation Type**, you need

to define **Database and Java Home Details**, **Target Database Connection Details** and **OBIEE Home Details**.

| Field Name           | Description                   | Value                                                 |
|----------------------|-------------------------------|-------------------------------------------------------|
| Database Client Home | Database client home location | Example:<br><br>/u01/app/product/12.1.0/dbhome_1      |
| Java Home            | JDK home location             | JDK 1.8 location<br>Example:<br><br>/u01/jdk_1.8.0_77 |

The **Target Database Connection Details** page appears.

6. Enter the following details in the respective fields and click **Next**.

| Field Name                       | Description                                                                          | Value                                                                |
|----------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Host                             | The host name of the server where the database resides.                              | Oracle Utilities Analytics Database Server                           |
| Port                             | The database port number on the database server used for connecting to the database. | Oracle Utilities Analytics Database Port. The default value is 1521. |
| Service Name                     | The service name for the database                                                    |                                                                      |
| Target Schema Password           | The password for the target schema (DWADM).                                          |                                                                      |
| Confirm Target Schema Password   | Confirm the password for the target schema (DWADM) here.                             |                                                                      |
| Metadata Schema Password         | The password for the metadata schema (MDADM).                                        |                                                                      |
| Confirm Metadata Schema Password | Confirm the password for the metadata (MDADM) schema here.                           |                                                                      |

The **OBIEE Home Details** page appears.

7. Enter the following details in the respective fields and click **Next**.

| Field Name     | Description                                                            | Value                                                                     |
|----------------|------------------------------------------------------------------------|---------------------------------------------------------------------------|
| BI Home        | The location on the disk where OBIEE is installed.                     | Example:<br><br>/u01/Middleware/Oracle_BI1                                |
| BI Domain Home | The domain Home location under the directory where OBIEE is installed. | Example:<br><br>/u01/Middleware/user_projects/domains/bifoundation_domain |

| Field Name           | Description                                                                                                                                                                                                               | Value         |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| WebLogic Host        | The hostname on which WebLogic server for OBIEE is running.                                                                                                                                                               |               |
| WebLogic Port Number | A unique port number within the system that is assigned to the HTTP port.<br><br>This port number is used as a part of the client URL request to connect to the host. It is the OBIEE WebLogic console admin port number. | Example: 7001 |
| WebLogic User        | WebLogic domain login user name.                                                                                                                                                                                          |               |

**Note:** You will be prompted for the Weblogic user's password after installation.

The **Installation Summary** page appears.

- Verify the installation options and click **Install** to begin the installation.

For any changes to the configuration before starting the installation, use the navigation pane and select the topic to edit.

- The **Installation Progress** page appears allowing you to see the progress of the installation. Operations being performed as part of the installation are logged to the terminal from which the installer was run. Detailed logs of the installation are also available in the logs/system directory under the installation location.

To quit before the installation is complete, click **Cancel**. Doing so will result in a partial installation; the portion of the software that was installed on your system before you click **Cancel** will remain on your system, and it needs to be deleted manually.

- On the **Installation Completed** page, click **Finish** to close the installer.

The Dashboards component is installed successfully.

## Deploying Web Catalog

Take the backup of existing BI Publisher reports from the catalog location. After the deployBAR step is completed successfully, copy the BI Publisher reports (for which backup was taken) to the location of the catalog.

To deploy the web catalogs:

- Go to the <DOMAIN\_HOME>/bidata/service\_instances/ssi/metadata/content/catalog/root/shared directory.
- Delete the existing catalogs (if any) that were delivered out-of-the-box with Oracle Utilities Analytics in the previous release.

Ensure any custom catalog related files in this directory are backed up in a separate location before running deployBar.sh/cmd.

If Oracle Utilities Network Management System BI Publisher reports were deployed, they should be retained.

- Login to the Enterprise Manager.



4. Navigate to **Coreapplication > Deployment > Repository** for viewing the catalog location.
5. Go to the <Catalog location>/root/system directory and remove the **spatialmetadata** directory and **spatialmetadata.atr** file.
6. Follow the steps as below for UNIX and Windows respectively:
  - In Unix:
    - a. Navigate to <Install\_Dir>/bin directory.  
`cd <Install_Dir>/bin`
    - b. Add Java 8 to the path variable as shown in example below:  
`export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH`
    - c. Run `ksh ./deployBAR.sh`.
  - In Windows:
    - a. Navigate to <Install\_Dir>/bin directory.  
`cd <Install_Dir>\bin`
    - b. Add Java 8 to the path variable as shown in example below:  
`set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%`
    - c. Run `deployBAR.cmd`.

The Web catalog is successfully deployed.

**Note:** If there are any customizations on rpd, ensure to backup the rpd before executing `deployBAR.sh/deployBAR.cmd` to deploy the catalog. After deploying the catalog follow the instructions in [Deploying Repository \(RPD\) File](#) section to deploy RPD files.

For an AIX operating system, after the `deployBAR.sh/deployBAR.cmd` is completed successfully, execute the following command:

```
cp -r ../writeback/wbtemplates/* $DOMAIN_HOME/bidata/
service_instances/ssi/metadata/content/msgdb/1_en/customMessages
```

## Deploying Repository (RPD) File

If no changes are made to the deployed RPD, then take the RPD file from the following location, where <install\_dir> is the Oracle Utilities Analytics Dashboard Component installation directory:

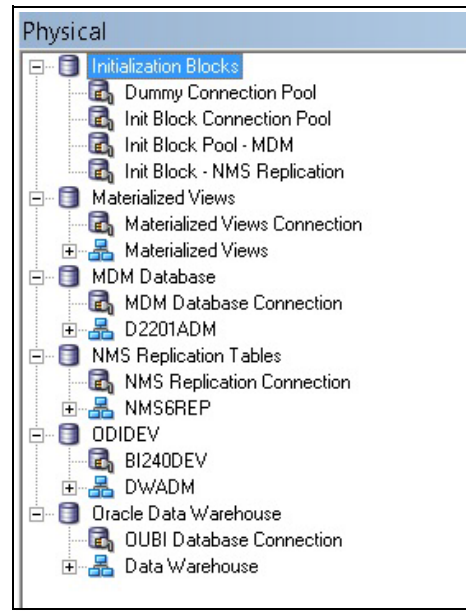
<install\_dir>/Reports/rpd/ UtilitiesBusinessAnalytics.rpd

If it was merged, then take the merged RPD and make the required database changes. Copy this RPD file to the Windows machine on which OBIEE 12.2.1 is installed.

To deploy the RPD file, follow these steps:

1. Ensure OBIEE 12.2.1 is installed on the Windows machine before proceeding.
2. Click **Start > Programs > Oracle Business Intelligence > Administration**.
3. Click **File > Open > Offline...** to open the RPD in offline mode.
4. Provide the RPD password. The default password is “oracle123”.

5. Double-click the **Connection Pools** to edit them.



- In the **Init Block Connection Pool** group, enter the following:  
 Datasource name = BI Database name  
 User name = DWREAD  
 Password = DWREAD User password
- In the **Init Block Pool - MDM** group, provide the following (only for Oracle Utilities Meter Data Management):  
 Datasource name = MDM database name  
 User name = CISUSER  
 Password = CISUSER User password
- In the **Init Block Pool - NMS Replication** group, provide the following (only for Oracle Utilities Network Management System):  
 Datasource name = BI database name  
 User name = DWREAD  
 Password = DWREAD User password
- In the **Materialized Views Connection** group, enter the following:  
 Datasource name = BI Database name  
 User name =DWREAD  
 Password = DWREAD User password
- In the **MDM Database Connection** group, provide the following (only for Oracle Utilities Meter Data Management):  
 Datasource name = MDM database name  
 User name = CISUSER  
 Password = CISUSER User password

- In the **NMS Replication Tables** group, provide the following (only for Oracle Utilities Network Management System):

Datasource name = BI database name

User name = DWREAD

Password = DWREAD User password

**Note:** The default schema name is NMS1REP. If the replication schema name is different, then rename it.

- In the **ODIDEV Connection Pool** group, provide the following:

Datasource name = BI database name

User name = DWUSER

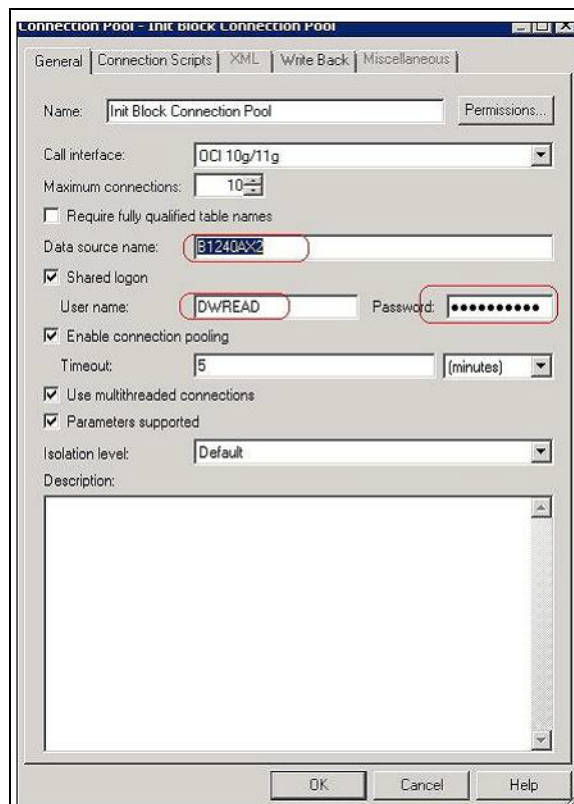
Password = DWUSER User password

- In the **OUBI Database Connection** group, provide the following:

Datasource name = BI database name

User name = DWREAD

Password = DWREAD User password



6. Click **Save**.

**Note:** Click **Yes** when you see the prompt '*Do you wish to check global consistency?*' and ignore any warnings that appear after consistency check is complete.

7. Copy the modified RPD back to the <install dir>/Reports/rpd/UtilitiesBusinessAnalytics.rpd where <install\_dir> is the Oracle Utilities Analytics Dashboard Component installation directory.

8. Login to the server where OBIEE Enterprise Manager is installed.
9. Navigate to **<OBIEE DOMAIN>/bitools/bin**.
10. Run the following command to deploy the RPD:

In Windows:

```
data-model-cmd.cmd uploadrpd -I <OUA
home>\Reports\rpd\UtilitiesBusinessAnalytics.rpd -W <rpd
password, default password is oracle123> -U <Weblogic user name
of OBIEE domain> -P <Weblogic password of OBIEE domain> -SI ssi
```

In Unix:

```
data-model-cmd.sh uploadrpd -I <OUA home>/Reports/rpd/
UtilitiesBusinessAnalytics.rpd -W <rpd password, default
password is oracle123> -U <Weblogic user name of OBIEE domain> -
P <Weblogic password of OBIEE domain> -SI ssi
```

11. Run the following commands from **<OBIEE DOMAIN>/bitools/bin** directory to stop and start the OBIEE domain services respectively.

```
stop.sh/cmd
```

```
start.sh/cmd
```

## Configuring and Deploying the MapViewer

Configuring and deploying the MapViewer involves the following tasks:

- [Configuring the MapViewer](#)
- [Modifying instanceconfig.xml](#)
- [Deploying Custom MapViewer](#)
- [Post-deploying Custom MapViewer](#)

### Configuring the MapViewer

To configure the Mapviewer, follow these steps:

1. Login to the WebLogic console.
2. Create the 'MAP\_DS' datasource.
3. Lock and edit it.
4. Navigate to **Services > Data Sources**.
5. Select **New > Generic Data Source** and provide the following:
  - Name = MAP\_DS
  - JNDI Name = MAP\_DS
  - Database Type = oracle
6. Click **Next**.
7. Enter the following:
  - Database Driver = \*Oracle's Driver (Thin) for Service connections; "Versions:Any"
8. Click **Next**.
9. On the next page, do not change any values. Click **Next**.
10. Enter the following connection properties:

- Database Name: BI Database Name
  - Host Name: Database host
  - Port: Database port
  - Database User Name: dwadm
  - Password: dwadm password
11. Click **Next**.
  12. On the next page, click **Test Configuration**. After the successful test, click **Next** again.
  13. On the **Select Target** page, select AdminServer under **Servers** and bi\_cluster under **Clusters**. Click **Finish**.
  14. Click **Activate Changes**.
  15. Update the mapViewConfig file with the tags mentioned below:  
File location: <Install Dir>  
/user\_projects/domains/<obiee\_domain>/config/fmwconfig/mapviewer/conf  
File: mapViewConfig.xml
  16. If there is a proxy used, insert the list of host names for all the third-party service providers in the security\_config node.  

```
<proxy_enabled_hosts>
elocation.oracle.com
</proxy_enabled_hosts>
```
  17. Add the following ns\_data\_provider node:  

```
<ns_data_provider id="obieeNsdp"
class="com.oracle.utilities.birdseye.BirdseyeNSDP" />
```
  18. Add the current map\_tile\_server with the following map\_tile\_server node:  

```
<map_tile_server>
<tile_storage default_root_path="/mytilecache/" />
</map_tile_server>
```

## Modifying instanceconfig.xml

Ensure you take a backup before updating the instanceconfig.xml file. Run the following commands in UNIX and Windows respectively to go to the directory containing the instanceconfig.xml file.

In Unix:

```
<OBIEE_INSTALL_DIR>/user_projects/domains/<obiee_domain>/config/
fmwconfig/biconfig/OBIPS
```

In Windows:

```
<OBIEE_INSTALL_DIR>user_projects\domains\<obiee_domain>\config\fmw
config\biconfig\OBIPS
```

Perform the following changes to the instanceconfig.xml file:

1. Update the security node with the following values. If the security node is not present, add the following code before </Serverinstance>:  

```
<Security>
<ClientSessionExpireMinutes>210</ClientSessionExpireMinutes>
<HttpOnlyCookies>>false</HttpOnlyCookies>
<CookieDomain />
```

```
<CookiePath>/</CookiePath>
</Security>
```

- Update the following <ServerInstance> element:

```
<LightWriteback>>true</LightWriteback>
```

- Add the following code between the <ServerInstance> </ServerInstance> tags.

```
<Prompts>
<MaxDropDownValues>256</MaxDropDownValues>
<AutoApplyDashboardPromptValues>>true</AutoApplyDashboardPromptValues>
<AutoSearchPromptDialogBox>>true</AutoSearchPromptDialogBox>
<AutoCompletePromptDropDowns>
<SupportAutoComplete>>true</SupportAutoComplete>
<CaseInsensitive>>true</CaseInsensitive>
<MatchingLevel>MatchAll</MatchingLevel>
<ResultsLimit>50</ResultsLimit>
</AutoCompletePromptDropDowns>
</Prompts>
<SpatialMaps>
<MapViewAPIV2Enabled>>false</MapViewAPIV2Enabled>
</SpatialMaps>
```

## Deploying Custom MapViewer

The custom MapViewer is required to integrate weather information in Outage Analytics.

To deploy the custom MapViewer, follow these steps:

- For Unix:
  - Navigate to the <Install\_Dir>/bin directory.
 

```
cd <Install_Dir>/bin
```
  - Add Java 8 to the path variable (as shown in example below).
 

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```
  - Run `ksh ./deploymapviewer.sh`.
  - Enter the WebLogic domain console password.
 

For example: `weblogic123`
- For Windows:
  - Navigate to the <Install\_Dir>/bin directory.
 

```
cd <Install_Dir>\bin
```
  - Add Java 8 to the path variable (as shown in example below).
 

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```
  - Run `deploymapviewer.cmd`.
  - Enter the WebLogic domain console password. For example: `weblogic123`

## Post-deploying Custom MapViewer

Perform the following steps after deploying the custom MapViewer:

- Login to the MapViewer at <http://<Server>:<port>/mapviewer>.
- Update the MapViewer configuration.

Navigate to **MapViewer > Administration > Configuration**.

Login to the Mapviewer at this location: <http://<HOST>:<MANAGERPORT>/mapviewer>

3. Add the content below in the mapViewerConfig.xml file with appropriate values:

```
<map_data_source name="mapconn" jdbc_host="<DB server name>"
jdbc_sid="//<DB Service name>" jdbc_port="1521" jdbc_user="DWADM"
jdbc_password="!<DWADM user password>" jdbc_mode="thin"
number_of_mappers="32" allow_jdbc_theme_based_foi="true"
/>
```

**Note:** The exclamatory mark in the front of the password ensures that the password is encrypted.

4. Click **Save** and then restart.

**Note:** The above step has to be performed each time after running the deploymapviewer command.

## Enabling WriteBack

To enable the Write Back, perform the following steps:

1. Login to Analytics and navigate to **Administration > Manage Privileges > WriteBack > Write Back to Database**.
2. Click **Denied:Authenticated User** and select the **Granted** permission.

## Enabling Auto Complete Feature in OBIEE

To enable the auto complete feature on OBIEE, perform the following steps:

1. Restart the OBIEE Admin server, Managed server, and opmn services.

**Note:** Refer to OBIEE documentation for detailed instructions on how to start and stop admin server, managed server, and opmn services.

2. Login to Analytics.

<http://<Server>:<port>/analytics>

3. Click **WebLogic User** (top-most-right section of the page).
4. From the drop-down menu, select **My Account**.
5. On the **Preferences** tab, set **Prompt Auto Complete** to **ON**.
6. Click **OK**.

# Chapter 7

---

## Upgrading Oracle Utilities Analytics from v2.5.0.0.5

The Oracle Utilities Analytics v2.7.0 release supports the following direct upgrade paths:

- v2.6.0.0.2 to v2.7.0
- v2.5.0.0.5 to v2.7.0

This chapter is applicable **only** to customers upgrading from Oracle Utilities Analytics **v2.5.0.0.5 to v2.7.0**.

**Note:** To upgrade from Oracle Utilities Analytics v2.6.0.0.2, refer to [Chapter 6: Upgrading Oracle Utilities Analytics from v2.6.0.0.2](#) for instructions and details.

To upgrade to Oracle Utilities Analytics v2.7.0, you must first upgrade to Oracle Utilities Analytics v2.5.0.0.5 if on an earlier version. Ensure all pre-requisites (JDK, ODI, and ODI patch 23629220) are followed before beginning the upgrade process.

This chapter describes the procedure to upgrade to Oracle Utilities Analytics v2.7.0, including:

- [Upgrading Oracle Data Integrator Based Oracle Utilities Analytics](#)
- [Upgrading Oracle Warehouse Builder Based Oracle Utilities Analytics](#)
- [Upgrading Oracle Utilities Analytics Administration Tool Component](#)
- [Upgrading Oracle Utilities Analytics Dashboards Component](#)



# Upgrading Oracle Data Integrator Based Oracle Utilities Analytics

This section explains the steps to upgrade Oracle Data Integrator based source applications (Oracle Utilities Customer Care and Billing and Oracle Utilities Operational Device Management). It includes the following:

- [Prerequisites](#)
- [Upgrading Oracle Utilities Analytics Database Component](#)
- [Upgrading Oracle Utilities Analytics Based ELT Component](#)
- [Upgrading Source Applications to be Compatible with v2.7.0](#)

## Prerequisites

Ensure the required JDK 1.8.0(77) and Oracle Data Integrator 12.2.1.0.0 (both infrastructure and ODI) are installed on Oracle Data Integrator server. Also, the target OBIEE applications should be down.

Follow the steps below as part of pre-requisites:

1. Login to the Oracle Utilities Analytics ODI server and start the ODI client.

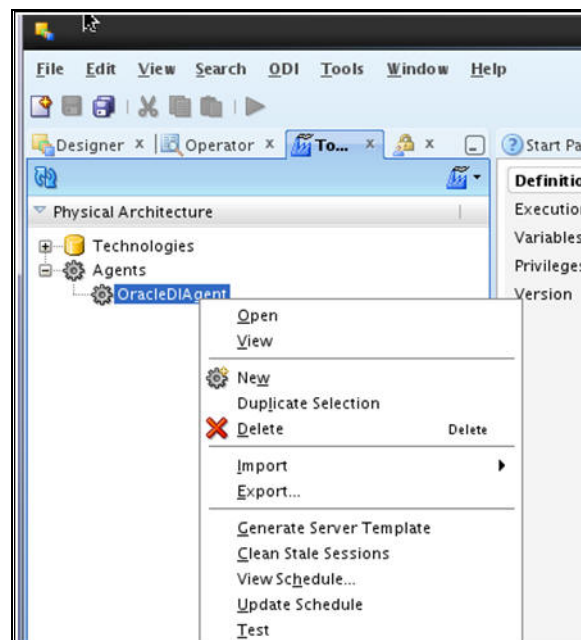
```
cd $ODI_HOME/odi/studio./odi.sh
```

2. Stop BI\_RUN\_ALL by following these steps:

- a. Login to Oracle Database Integrator Studio.
- b. Double click Global/WLS\_AGENT and select **Inactive**.
- c. Save the changes.

3. On the Studio, navigate to the **Topology** tab.

4. Right -click **OracleDIAgent** and select **Update Schedule**.



5. Connect to the Oracle Utilities Analytics database.

Run the query below to check that all jobs are completed.

```
SELECT
*
FROM mdadm.b1_jobs_vw
WHERE status_flg NOT IN ('D', 'E', 'RP');
```

**Note:** No rows should be returned from the above query. If returned, the jobs are not yet complete. You must wait until all the jobs are completed.

6. Stop the Oracle Data Integrator admin and managed servers.
7. Stop the source application servers.

Ensure the source applications are stopped, but the source databases are up and accessible.

8. Sync all the Oracle GoldenGate processes:

- a. Connect to the MDADM schema in Oracle Utilities Analytics database.
- b. Run the following SQL to get the context codes.

```
Select CONTEXT_CD from b1_prod_instance where CONTEXT_CD<>'B1';
```

- c. For each context returned by the query, perform the following steps:

**Note:** Do not delete the extract, replicate GoldenGate processes. Configure the existing sources with same context during the upgrade.

- a. Connect to the source database corresponding to context code as **sys user** and execute the following command:

```
alter system switch logfile
select SEQUENCE# from v$log where STATUS='CURRENT';
```

- b. Note down the result of the query.
- c. Connect to the MDADM schema in Oracle Utilities Analytics database and execute the SQL mentioned below:

```
Select DB_HOST,GG_HOME from b1_gg_cfg
```

where GG\_CFG\_CD='<Context\_code>' to get source GoldenGate server and Oracle GoldenGate home on source server.

- d. Connect to the source GoldenGate server.
- e. Login to the source Oracle GoldenGate prompt.

```
cd <GG_Home>
./ggsci
```

- f. Execute the following command:

```
info extract <Context_codeXXX>,showch
```

For example: info extract CCB1AAX,showch

In the **Recovery Checkpoint** section, sequence should be = or > 1 returned by the query below:

```
select SEQUENCE# from v$log where STATUS='CURRENT'
```

- g. Repeat the check mentioned in the *step f* for each extract process.
- h. Ensure that the pump processes transfer all the changes to the target server. Lag at the **Chkpt** and **Time Since Chkpt** should be zero.

- i. On the Oracle Utilities Analytics database server, ensure the replicat processes apply all changes for the context code.
- Connect to the MDADM schema in Oracle Utilities Analytics database and execute the query below to get the target server and GoldenGate Home details on the target server.

```
select DB_HOST,DB_SID,GG_HOST, GG_HOME from b1_gg_cfg
where GG_CFG_CD='B1';
```

- Connect to the target server and login to the GoldenGate prompt. Execute the following commands:

```
cd <GG_Home >
./ggsci
dblogin userid MDADM,password <MDADM user password> Send
replicat <Context_codeXX>,status
```

The current status will be at EOF.

- j. Check this for each 'replicat' process of the context code.
- k. Ensure all extracts and replicates of all sources are in sync.
- l. On the source database server, stop all the GoldenGate processes as below:

```
cd <GG_Home>
./ggsci
```

Execute the following commands:

```
dblogin userid < GoldenGate Owner >,PASSWORD < GoldenGate
Owner password>
stop <Context_code>* For example:
stop CCB1*
```

Stop the manager processes after all extract processes are stopped.

```
Stop mgr
```

**Note:** Note the source Oracle GoldenGate extracts context\_codes of each source and source GoldenGate Owner info. This information is used while configuring the existing sources with same context during the upgrade.

- m. Rename or backup the existing source GoldenGate Home on the source server.

Remember to note the GoldenGate manager port number and source GoldenGate home before renaming it.

For example:

```
mv <GG_Home> <GG_Home>.bkp
```

- n. On the Oracle Utilities Analytics database server, ensure the replicate processes apply all changes for the context code. After checking the current status and each replicate process for the context code, execute the following commands:

```
Stop <Context_code>*
```

For example: stop CCB1\*

- o. After all source applications changes are in sync in the Oracle Utilities Analytics database, run the following command.

Ensure to run the command after connecting to the target GoldenGate Home prompt.

```
./ggsci
Stop mgr
```

- p. Rename the existing target GoldenGate Home directory.

Note the GoldenGate manager port number and target GoldenGate home before renaming it.

It is recommended to take consistent backup of source and target databases after the source is synchronized with target.

9. Upgrade Oracle Utilities Analytics database to version 12.1.0.2.0.
10. Install Oracle GoldenGate 12.2.0.1.1 on Oracle Utilities Analytics database server. Start the manager process.

Note the GoldenGate home and manager port number. This is applicable only if the source application is using Oracle Data Integrator based ELT.

Install new Oracle Data Integrator 12.2.1 (both infrastructure and ODI softwares) and apply ODI 23629220 patch on Oracle Data Integrator server. The patch is available on My Oracle Support (<http://support.oracle.com>).

To summarize, a successful Oracle Data Integrator installation involves installing the following:

- JDK1.8.0(77)+
- Oracle Fusion Middleware Infrastructure 12.2.1
- ODI 12.2.1
- ODI patch 23629220

## Upgrading Oracle Utilities Analytics Database Component

This section describes the steps included to upgrade the Oracle Utilities Analytics database component:

- [Copying and Decompressing Install Media](#)
- [Creating Users and Tablespaces](#)
- [Installing RELADM Schema](#)
- [Installing MDADM Schema](#)
- [Installing DWADM Schema](#)

Before proceeding with upgrading the Oracle Utilities Analytics Database component, ensure the following are complete:

- Upgrading Oracle Utilities Analytics database to version 12.1.0.2.0.
- Installing Oracle GoldenGate 12.2.0.1.1 on Oracle Utilities Analytics database server.

### Copying and Decompressing Install Media

To copy and decompress the install media, perform these steps:

1. Download Oracle Utilities Analytics v2.7.0 Oracle Database part (**Oracle Utilities Analytics V2.7.0 Oracle Database Multiplatform.zip**) from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).

2. Create a temporary directory (such as c:\OUA\temp for a Windows machine or /OUA/temp for a Linux machine).

This directory (referred to as *<TEMPDIR>* below) must be located outside any current working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation, can be deleted after completing a successful installation.

3. Unzip **Oracle Utilities Analytics V2.7.0 Oracle Database Multiplatform.zip** to *<TEMPDIR>* using any zip utility.

## Creating Users and Tablespaces

To create users and tablespaces follow these steps:

1. Ensure to create users in the database with the following names without giving specific roles (if these do not exist already):

DWADM, DWUSER, DWREAD, MDADM, RELADM, OUA\_MASTER, OUA\_WORK and DWSTAGE

2. Connect as **sys user** and revoke the DBA privilege from the following users (if the DBA privilege has been granted to them):

DWADM,MDADM,RELADM,OUA\_MASTER, OUA\_WORK and DWSTAGE

3. Ensure to create roles with the following names (if these do not exist already).

DW\_USER, DW\_READ, DW\_REPLICATE and DW\_PRIVS\_ROLE

4. Connect as **sys user** and execute the **Usersgrants.sql** in /Scripts/Usersgrants.sql.

This SQL provides the required grants to the created users.

5. Copy the DuplicateRecordCheck.sql file from the BI270\DWADM\Pre-Installation directory to the database server under ../<Temp> directory.

6. Connect to the DWADM schema and execute the ../<Temp>/DuplicateRecordCheck.sql.

**Note:** If the system displays that no rows are selected, then proceed. If the system displays some data, then contact Oracle Support team and do not proceed with the installation. It is recommended to wait until you get the data fix script.

## Installing RELADM Schema

The RELADM schema is a metadata schema that consists of the database objects used for storing the product version and component installation information.

This section describes the RELADM schema initial installation, including:

- [Reviewing Storage.xml file](#)
- [Installation Steps](#)
- [Generating Database Statistics](#)

### Reviewing Storage.xml file

The storage.xml file (that comes with the product and is in location *<TEMPDIR>/BI270/RELADM/Install- Upgrade*) allocates all the base tables and indexes to the default tablespace CISTS\_01.

If you decide to allocate some tables or indexes outside of the default tablespace, then this has to be reflected in the **storage.xml** file by changing the tablespace name from the default value to a custom value.

**Note:** If database does not have CISTS\_01 tablespace or the RELADM user does not have quota on CISTS\_01 tablespace, edit the Storage.xml file to indicate the correct tablespace name on which RELADM has quota.

## Installation Steps

**Note:** Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

In Windows:

1. Add Java 8 to the path variable as shown in the example below:

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
set CLASSPATH=<TEMPDIR>\BI270\RELADM\Jarfiles*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/
<ORACLE SERVICE NAME>,RELADM,<Password of RELADM user>,,,,RELADM -
j
<JDK Home> -f <TEMPDIR>\BI270\RELADM\Jarfiles -v 1 -e true
```

In Unix:

1. Add Java 8 to the path variable as shown in example below:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/BI270/RELADM/Jarfiles/*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/<ORACLE
SERVICE NAME>,\
RELADM,<Password of RELADM user>,,,,RELADM \
-j <JDK Home> -f <TEMPDIR>/BI270/RELADM/Jarfiles -v 1 -e true
```

The utility creates the RELADM schema and system data definitions. If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

## Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects.

Connect as **sys user** and execute the following command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('RELADM');
```

## Installing MDADM Schema

The MDADM schema is a metadata schema that consists of the database objects used for storing the metadata of Oracle Utilities Analytics.

For example: ETL job execution status, target tables for ETL, Oracle GoldenGate configuration details, etc.

This section describes the MDADM schema initial installation, including:

- [Reviewing Storage.xml File](#)
- [Installation Steps](#)
- [Generating Database Statistics](#)

### Reviewing Storage.xml File

The **storage.xml** file (comes with the product and is in location `<TEMPDIR>/BI270/MDADM/Install- Upgrade`) allocates all the base tables and indexes to the default tablespace CISTS\_01. If you decide to allocate some tables or indexes outside of the default tablespace, then this has to be reflected in the **storage.xml file** by changing the tablespace name from the default value to a custom value.

**Note:** If the database does not have CISTS\_01 tablespace or the MDADM user does not have quota on CISTS\_01 tablespace, you must edit the Storage.xml file to indicate the correct tablespace name on which MDADM has quota.

### Installation Steps

To install the MDADM schema, follow these steps:

**Note:** The process prompts you for the MDADM user password. Ensure to run the OraDBI.jar (in the step below) using JDK 8.0.

Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

- In Windows:

1. Add Java 8 to the path variable as shown in the example below:

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
set CLASSPATH=<TEMPDIR>\BI270\MDADM\Jarfiles*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/
<ORACLE SERVICE NAME>,MDADM,<Password of MDADM user>,,,,MDADM -
j
<JDK Home> -f <TEMPDIR>\BI270\MDADM\Jarfiles -v 1 -e true
```

- In Unix:

1. Add Java 8 to the path variable as shown in example below:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/BI270/MDADM/Jarfiles/*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/<ORACLE
SERVICE NAME>,\
MDADM,<Password of MDADM user>,,,,MDADM \
-j <JDK Home> -f <TEMPDIR>/BI270/MDADM/Jarfiles -v 1 -e true
```

The utility creates the MDADM schema and system data definitions.

If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

### Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects.

Connect as **sys user** and execute the following command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('MDADM');
```

### Installing DWADM Schema

The DWADM schema contains star schema objects (such as facts and dimensions) that include entire data in the data warehouse.

This section describes the DWADM schema initial installation, including:

- [Executing Pre-Installation SQL](#)
- [Reviewing Storage.xml File](#)
- [Installation Steps](#)
- [Generating Database Statistics](#)
- [Post-Installation Steps](#)

### Executing Pre-Installation SQL

To execute specific SQL scripts before proceeding with the installation, follow these steps:

1. Copy the following scripts to the database server under ../<Temp> directory.
  - ... \Pre-Installation\PreInstallAddColumns.sql
  - ... \Pre-Installation \PreIndexCreation.sql
2. Change the current directory to ../<Temp>.
3. Connect to the DWADM schema and execute PreInstallAddColumns.sql.
4. Connect to the DWADM schema and execute PreIndexCreation.sql.
5. Copy the following from BI270/DWADM/Pre-Installation/ to the database server under ../<Temp> directory. Execute them while connecting to the schema.
  - CF\_BILLED\_USAGE.sql
  - CF\_CREW\_TASK.sql
  - CF\_CUST\_RECENT\_OUTG.sql
  - CF\_CUST\_RST\_OUTG.sql
6. Copy refresh\_mvs\_where\_mv\_logs\_outofsync.sql script from BI270/DWADM/ Pre-Installation/ to the database server under ../<Temp> directory. Execute it while connecting to the schema.
7. Copy drop\_out\_of\_sync\_mv\_logs.sql script from BI270/DWADM/ Pre-Installation/ to the database server under ../<Temp> directory. Execute it while connecting to the schema.

### Reviewing Storage.xml File

The storage.xml file (comes with the product and is in location <TEMPDIR>/BI270/DWADM/ Install- Upgrade) allocates all the base tables and indexes to the default tablespace CISTS\_01. If you decide to allocate tables or indexes outside of the default tablespace, then this has to be



reflected in the storage.xml file by changing the tablespace name from the default value to a custom value.

**Note:** If the database does not have CISTS\_01 tablespace or the DWADM user does not have quota on CISTS\_01 tablespace, you must edit the Storage.xml file to indicate the correct tablespace name on which DWADM has quota.

## Installation Steps

To install the DWADM schema, follow these steps:

**Note:** The process prompts you for the DWADM user password. Ensure to run the OraDBI.jar (in the step below) using JDK 8.0.

Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

- In Windows:

1. Add Java 8 to the path variable as shown in the example below:

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
set CLASSPATH=<TEMPDIR>\BI270\DWADM\Jarfiles*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/
<ORACLE SERVICE NAME>,DWADM,<Password of DWADM
user>,DWUSER,DWREAD,DW_USER,DW_READ,DWADM -j
<JDK Home> -f <TEMPDIR>\BI270\DWADM\Jarfiles -v 1 -e true
```

- In Unix:

1. Add Java 8 to the path variable as shown in example below:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/BI270/DWADM/Jarfiles/*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/<ORACLE
SERVICE NAME>,\
DWADM,<Password of DWADM
user>,DWUSER,DWREAD,DW_USER,DW_READ,DWADM \
-j <JDK Home> -f <TEMPDIR>/BI270/DWADM/Jarfiles -v 1 -e true
```

The utility creates the DWADM schema and system data definitions.

If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

## Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects.

Connect as **sys user** and execute the command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('DWADM');
```

## Post-Installation Steps

Perform these steps to complete the installation:

1. Connect to the Oracle Utilities Analytics database and execute the following:

```
... \BI270\DWADM\Post-Upgrade\ControlZoneUpdate.sql
```

2. Connect to the Oracle Utilities Analytics database with the system user and execute the script mentioned below:

```
... /BI270\DWADM\Post-Upgrade\DataCorrection2511.sql
```

## Upgrading Oracle Utilities Analytics Based ELT Component

This section describes the steps included to upgrade the Oracle Utilities Analytics based ELT component:

- [Configuring Oracle Data Integrator Repository Creation Utility \(RCU\)](#)
- [Setting up Oracle GoldenGate](#)
- [Copying and Decompressing Install Media](#)
- [Starting the Installer](#)
- [Upgrade Steps](#)
- [Creating WebLogic Domain for Oracle Data Integrator Agent](#)
- [Configuring Source Applications](#)

Before proceeding with upgrading the Oracle Utilities Analytics based ELT component, ensure the following are complete:

- Installing JDK1.8.0(77)+
- Installing Oracle Data Integrator 12.2.1.0.0 (both infrastructure and ODI)
- Applying Oracle Data Integrator patch 23629220

## Configuring Oracle Data Integrator Repository Creation Utility (RCU)

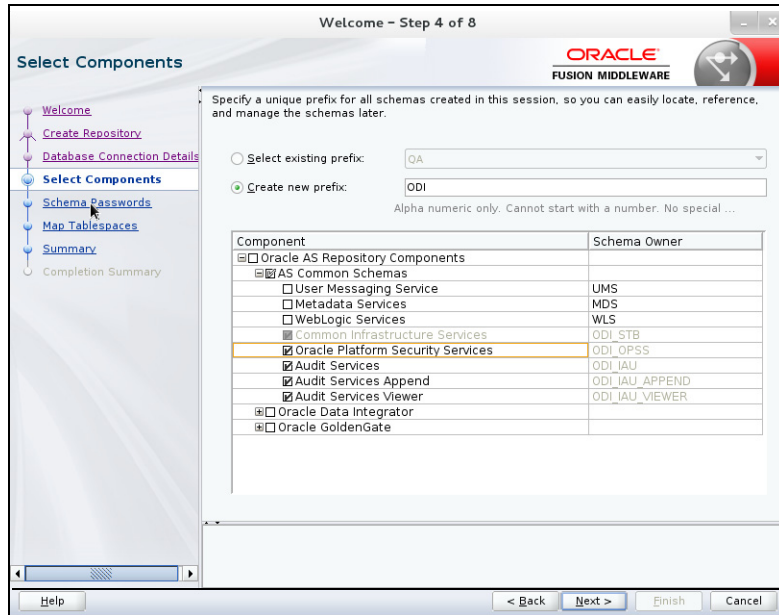
To configure the Oracle Data Integrator Repository Creation Utility (RCU), follow these steps:

1. Ensure RCU for ODI is running and the required schemas are created in the target database.  
ODI\_ORACLE\_HOME is an Oracle Home path used as Oracle Home while installing FMW Infrastructure and Oracle Data Integrator.
2. Set or export JAVA\_HOME variable to the 1.8.0\_77+ installed directory.
3. Go to \$ODI\_ORACLE\_HOME/oracle\_common/bin.
4. Run the RCU utility.

For example:

```
export JAVA_HOME=/scratch/bi_oradata_01/jdk1.8.0_77
cd/scratch/bi_oradata_01/12.2.1_FMW_infrastructure/oracle_common/
bin
./rcu
```

5. On the **Select Components** wizard in RCU, navigate to the **Create Repository** tab and select **System Load and Product Load**. Click **Next**.
6. On the **Database Connection Details** tab, provide the database connection details. Click **Next**.
7. On the **Select Components** tab, select the options as shown in the screen below.  
Unselect the Oracle Data Integrator component. Click **Next**.



8. On the **Schema Passwords** tab, note the passwords given as they are required while creating the Oracle Data Integrator domain.
9. Navigate to the **Complete Summary** tab and click **Finish**.

It is not required to create the Oracle Data Integrator domain at this stage. Create it after running the Oracle Utilities Analytics installer and before running the source configuration tool.

## Setting up Oracle GoldenGate

This section describes the following:

- [Setting up Oracle GoldenGate on Source Database Server](#)
- [Setting up Oracle GoldenGate on Target Database Server](#)
- [Setting Up Oracle GoldenGate Monitor JAgent on Target and Source Database Servers](#)

## Setting up Oracle GoldenGate on Source Database Server

**Note:** Before proceeding, start the source database and ensure it is accessible. Bring down the source application server.

To set up each source instance, follow these steps:

1. Create a directory on the source database server. (For example: ../GoldenGate Home). and install Oracle GoldenGate in that directory. It is Oracle GoldenGate home (OGG\_Home) on the source database server.

**Note:** Note this directory location; it is used during the Oracle Utilities Analytics installation.

2. Install Oracle GoldenGate.

Download Oracle GoldenGate 12.2.0.1.1 from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).

For installation instructions, refer to the respective installation documentation at <http://docs.oracle.com/goldengate/1212/gg-winux/index.html>.

3. Provide the Oracle GoldenGate Home location as the directory location created in the step 1.
4. Open a command terminal or window, and set the source ORACLE\_SID and ORACLE\_HOME variables.
5. Set the LD\_LIBRARY\_PATH as follows:

In Unix:

```
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
```

In Windows:

```
set LD_LIBRARY_PATH=%ORACLE_HOME%\lib;%LD_LIBRARY_PATH%
```

6. In the Command window, change directory to the Oracle GoldenGate home directory, and execute the following command:

In Unix:

```
./ggsci
```

In Windows:

```
ggsci
```

The Oracle GoldenGate prompt is shown.

7. At the Oracle GoldenGate prompt, execute the following commands in the order listed:

- `create SUBDIRS`
- `start mgr` - Starts the Oracle GoldenGate manager process.
- `info all` - Verifies if the manager process is running.
- `exit` - Exits Oracle GoldenGate.

8. Ensure that the source database is in the archivelog mode.
9. Connect to the source database as **sys user** and execute the following statements:

```
alter database add supplemental log data (primary key) columns;
alter system set enable_goldengate_replication=TRUE scope=both;
```

10. In the Command window, navigate to the Oracle GoldenGate home (OGG\_Home) directory.

11. Open the GOBALS file in the directory and add the below command:

```
EnableMonitoring
```

12. Navigate to the Oracle GoldenGate home (OGG\_Home) directory.

13. Connect to the database as **sys user** using SQL\*Plus.

Ensure OGG\_Home to be the current directory while invoking SQL\*Plus.

14. Create a new user.

For example: ODM01SRC

This user is the Oracle GoldenGate owner. Ensure to assign a tablespace to this user that is not assigned to any other user.

**Note:** Ensure to note down the Oracle GoldenGate Owner Username. It is used in the Oracle Utilities Analytics installation.

15. Connect to the source database as **sys user**.

16. Execute the following commands:

**Note:** Ensure to modify the GoldenGate owner placeholder with actual name of the database user created in step 14.

```
grant CREATE SESSION,CONNECT,RESOURCE,ALTER SYSTEM to <GoldenGate Owner>;
grant unlimited tablespace to <GoldenGate owner> with admin option;
EXECUTE dbms_goldengate_auth.grant_admin_privilege('<GoldenGate Owner>', 'capture');
grant unlimited tablespace to <GoldenGate Owner> with admin option;
Revoke dba from <GoldenGate Owner>;
grant create any view to <GoldenGate Owner>; grant select any dictionary to <GoldenGate Owner>; GRANT CREATE ANY DIRECTORY TO <GoldenGate Owner>; GRANT DROP ANY DIRECTORY TO <GoldenGate Owner>; GRANT EXP_FULL_DATABASE TO <GoldenGate Owner>; GRANT IMP_FULL_DATABASE TO <GoldenGate Owner>;
```

17. Connect to the <source application>ADM schema (such as CISADM). Execute the following commands:

For **Oracle Utilities Customer Care and Billing** source database, execute the following grants:

```
Grant select on F1_MST_CONFIG to <GoldenGate owner user created in step 16>
Grant select on F1_EXT_LOOKUP_VAL to <GoldenGate owner user created in step 16>
Grant select on F1_BKT_CONFIG to <GoldenGate owner user created in step 16>
Grant select on F1_BKT_CONFIG_VAL to <GoldenGate owner user created in step 16>
```

For **Oracle Utilities Operational Device Management** source database, execute the following grants:

```
Grant select on F1_MST_CONFIG to <GoldenGate owner user created in step 16>
Grant select on F1_EXT_LOOKUP_VAL to <GoldenGate owner user created in step 16>
```

For **Oracle Utilities Meter Data Management** source database, execute the following grants:

```
Grant select on <application ADM Schema>.F1_MST_CONFIG to <GoldenGate Owner>;
Grant select on <application ADM Schema>.F1_EXT_LOOKUP_VAL to <GoldenGate Owner>;
```

For **Oracle Utilities Work and Asset Management** source database, execute the following grants:

```
Grant select on <application ADM Schema>. F1_EXT_LOOKUP_VAL to <GoldenGate Owner>;
Grant select on <application ADM Schema>.F1_MST_CONFIG to <GoldenGate Owner>;
```

```
Grant select on <application ADM Schema>. F1_BKT_CONFIG to
<GoldenGate Owner>;
Grant select on <application ADM Schema>. F1_BKT_CONFIG_VAL to
<GoldenGate Owner>;
```

**Note:** While executing SQL commands in steps 15, 16, and 17, provide the GoldenGate owner user (if prompted for).

All the scripts mentioned below are located in GoldenGate Home directory and must be executed after connecting to the database as **sys user**.

18. Execute the following commands in the order listed below:

```
@marker_setup.sql
@ddl_setup.sql
@role_setup.sql
```

19. Exit SQL\*Plus.

20. In the Command window, create a directory “diroby” in the OGG\_Home directory.

21. Change directory to the Oracle GoldenGate Home directory, and execute the following:

- a. Steps in [Configuring Encrypting Data Using ENCKEYS Method](#).
- b. Steps in [Generating Shared Secret Password](#).

**Note:** Execute these steps before running the Oracle Utilities Analytics installer. See <http://docs.oracle.com/goldengate/c1221/gg-winux/index.html> for more details.

### Configuring Encrypting Data Using ENCKEYS Method

To configure for encrypting data using the ENCKEYS method, do the following:

1. Execute the following command:

```
cd <OGG_HOME>
KEYGEN key_length n
```

The above command generates the key value based on the value specified in the parameter “n”. The key value has to be copied to ENCKEYS file against a logical name.

2. For each key value generated above, provide a logical name (Logical name should not be the same for two different key values). Enter the logical name space and then key value in the ENCKEYS file.
3. Repeat the step above for each key values generated.
4. Save the file with name ENCKEYS (Upper case only) without any extension.

Example:

```
cd $OGG_HOME
./keygen 128 1
0x8CE55035DD6893205A7BD6773FA8E670
```

5. Open a new ASCII ENCKEYS file if it does not exist for adding a new entry or open an existing ENCKEYS text file to append.
6. Input the Logical name, space and key value generated.

Sample content of file ENCKEYS:

```
CCB1KEY 0x8CE55035DD6893205A7BD6773FA8E670
```

- The source ENCKEYS file entry has to be appended to the intermediate server or target server which would be configured with the source system where target OGG is being configured.

**Note:** It is recommended to name Logical key name after <context\_code>KEY.

For example: If context code is CCB1, it is recommended to name it as CCB1KEY.

### Generating Shared Secret Password

To generate the shared secret password, follow these steps:

- Execute the following command:

```
cd <OGG_HOME>
ggsci
ENCRYPT PASSWORD <GG Owner password> <algorithm> ENCRYPTKEY
<key_name>
```

Example:

```
cd $OGG_HOME
./ggsci
GGSCI (hostname) 1> ENCRYPT PASSWORD CCB01SRC AES128 ENCRYPTKEY
CCB1KEY
Encrypted password:
AADAAAAAAAAAAAAIAVGNHBFLLGFCHBTCVBFJFHUEJGNCFAOAFEOFBALELISFOEIFWGRB
ZHCCMCYGYBDAZH
Algorithm used: AES128
```

- Note the above generated ENCKEYS file logical name/key value, algorithm name used, and the generated encrypted password.

### Setting up Oracle GoldenGate on Target Database Server

To set up Oracle GoldenGate on the target database server, follow these steps:

- Create a directory on the target database server.

For example: ../GoldenGateHome

Oracle GoldenGate should be installed in this directory. It is **Oracle GoldenGate home (OGG\_Home)** on the target Oracle Utilities Analytics database server.

**Note:** Ensure to note the directory location; it will be used in the Oracle Utilities Analytics installation.

- Install Oracle GoldenGate and provide the GoldenGate Home location as the directory location created in the step 1.
- In the Command window, set the target ORACLE\_SID and ORACLE\_HOME variables.

Set LD\_LIBRARY\_PATH using the following commands:

In Unix:

```
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
```

For Windows:

```
set LD_LIBRARY_PATH=%ORACLE_HOME%/lib;%LD_LIBRARY_PATH%
```

- In the Command window, change the directory to the **GoldenGate home** directory and execute the below command:

For Unix:

```
./ggsci
```

For Windows:

```
ggsci
```

The Oracle GoldenGate prompt is shown.

5. At the prompt, execute the following commands in the order listed below:
  - `create SUBDIRS`
  - `start mgr` - Starts the Oracle GoldenGate manager process.
  - `info all` - Verifies if the manager process is running.
  - `exit`
6. Create a directory “diroby” in the OGG\_Home directory.
7. Connect to the target database as **sys user** and execute the below query:
 

```
alter system set enable_goldengate_replication=TRUE scope=both;
```
8. In the Command window, navigate to the Oracle GoldenGate Home (OGG\_Home) directory.
9. Edit the GLOBALS file in the <GG home> directory and add the following command.:
 

```
EnableMonitoring
```
10. Navigate to the Oracle GoldenGate home (OGG\_Home) directory.
11. If the ENCKEYS file does not exist, follow these steps:
  - a. Create and open a new ASCII ENCKEYS file.
  - b. Add the key value/values that are generated on the sources to the ENCKEYS file in target OGG home. This is done for the context codes for which source is configured.

A sample ENCKEYS file in target OGG home is as below:

```
CCB1KEY 0x8CE55035DD6893205A7BD6773FA8E670
```

### Setting Up Oracle GoldenGate Monitor JAgent on Target and Source Database Servers

Set up Oracle GoldenGate Monitor (OGG) JAgent on Oracle Utilities Analytics GoldenGate server and on all the source application GoldenGate servers. The OGG Monitor JAgent is used to automatically copy the generated OGG scripts to both source and target GoldenGate Home directories, and to start the extract and replicate processes on source and target.

To setup OGG Monitor JAgent on both target and source database servers, follow these steps:

1. Ensure Oracle GoldenGate is installed and manager is running.
2. Start the rmiregistry services using the following command:
 

```
rmiregistry 5559 &
```

Ensure to note down the port on which RMI server is started. The port number specified here is 5559. If it is not specified, the default port 1099 will be used.
3. Install Fusion Middleware Infrastructure.
4. Run the OGG Monitor 12.2.1 installer.
  - a. Set Oracle Home to the location where Fusion Middleware Infrastructure was installed in step 2.



- b. Choose installation type as OGG Monitor Agent.
5. Edit the Config.properties file in the <OGG Monitor home>/oggmon/ogg\_agent/cfg\_templates and add/modify the below parameters.
- ```
<ACTUAL>      : jagent.host=localhost
<CHANGE TO>  : jagent.host=<<actual hostname on which OGG is
installed>>

<ACTUAL>      : monitor.jmx.username=cmroot
<CHANGE TO>  : monitor.jmx.username=jmx_src

<ACTUAL>      : jagent.username=root
<CHANGE TO>  : jagent.username=<<OGG software installed OS user>>

<ACTUAL>      : jagent.rmi.port=5559
<CHANGE TO>  : jagent.rmi.port=5557 or any free port other than the
one on which the rmiregistry is started

<ACTUAL>      : agent.type.enabled=OGGMON
<CHANGE TO>  : agent.type.enabled=OEM
<ACTUAL>      : jagent.backward.compatibility=true
<CHANGE TO>  : jagent.backward.compatibility=false
```

6. Add the following parameter:

```
jagent.ssl=false
```

7. Navigate to <OGG Monitor home>/oggmon/ogg_agent directory and run the below command:

In Unix:

```
export JAVA_HOME=<JDK home>
./createMonitorAgentInstance.sh
```

In Windows:

```
set JAVA_HOME=<JDK home>
./createMonitorAgentInstance.bat
```

- a. You will be prompted to enter:

- Oracle GoldenGate Home directory.
- Path to be used for Oracle GoldenGate Monitor Agent instance.

It is recommended to provide a path (such as <OGG Monitor home>/Agents/OGGMonitorInstance).

- A unique name to replace the timestamp in the name of the file used to start GG Monitor agent instance.

Provide a unique name to be used for this Oracle GoldenGate Monitor instance.

- b. Execute the command below from <path used for OGG Monitor instance provided in the step above>/bin.

Example location: <OGG Monitor home>/Agents/OGGMonitorInstance/bin

In Unix:

```
export JAVA_HOME=<JDK home>
./pw_agent_util.sh -jagentonly
```

In Windows:

```
set JAVA_HOME=<JDK home>
pw_agent_util.bat -jagentonly
```

8. Enter the Oracle wallet password.

This password has to be entered as the password for the JAGENT while running the installer (for target gg), and while running the source configuration (for source gg). Ensure to note the password and jagent.rmi.port value (JAgent Port). This information is required in subsequent installation.

9. Create a folder with the Context_code name in <GG Home>/dirdat.

For example: If WAM2 is created for the WAM source, then create a folder with name “WAM2” within the <GG Home>/dirdat/ folder.

10. Navigate to <GG Home>/dirprm and edit jagent.prm file.

Replace COMMAND java with COMMAND <JDK Home>/bin/java.

This ensures that the correct version of java (1.8) is used while starting JAgent.

11. Navigate to OGG_Home directory and run the following command at the Oracle GoldenGate prompt:

```
ggsci
```

12. Start the jAgent process using the following command:

```
start jagent
```

The logs for JAgent are created at the following (example) location.

```
<OGG Monitor home>/Agents/OGGMonitorInstance/logs
```

Copying and Decompressing Install Media

To download and decompress the install media, perform these steps:

1. Download the Oracle Utilities Analytics version 2.7.0 Multiplatform part (**Oracle Utilities Analytics V2.7.0 Multiplatform.zip**) from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).
2. Create a temporary directory, such as c:\OUA\temp or /OUA/temp (referred to <TEMPDIR> below). This directory must be located outside any current working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.
3. Unzip **Oracle Utilities Analytics V2.7.0 Multiplatform.zip** to <TEMPDIR>.

Starting the Installer

For an AIX Operating System, set the following environment variable before starting the Oracle Utilities Analytics installation:

```
export IBM_JAVA_OPTIONS="-Xmx2g -XX:PermSize=64m -XX:MaxPermSize=3200m
```

To start the Oracle Data Integrator Based ELT component, follow these steps:

1. Go to the temporary folder containing the installer.
2. Run the following command from this folder:

```
java -jar <TEMPDIR>/OUA_2.7.0.0.0_generic.jar -logLevel finest
```

Note: The minimum JDK required for running the Oracle Utilities Analytics installer is JDK 1.8.

The **Welcome** page appears.

3. Review this information before you begin the installation. Click **Next** to continue with the installation.
4. Complete the tasks on the navigation pane.

Each item in the navigation pane represents a specific installer screen that prompts you for information required to install the software.

- If you select **Oracle Data Integrator Based ETL** as an **Installation Type**, define the following:
 - Database and Java Home Details
 - Target Database Connection Details
 - Oracle Data Integrator Home and Schema Details
 - Oracle Data Integrator Agent and Repository Details
 - Target GoldenGate Details
 - Target JAgent Details
- If you select **Dashboard** as an **Installation Type**, define the following:
 - Database and Java Home Details
 - Target Database Connection Details
 - OBIEE Home Details
- If you select both **Oracle Data Integrator Based ETL** and **Dashboard** as an **Installation Type**, define the following:
 - Database and Java Home Details
 - Target Database Connection Details
 - Oracle Data Integrator Home and Schema Details
 - Oracle Data Integrator Agent and Repository Details
 - Target GoldenGate Details
 - Target JAgent Details
 - OBIEE Home Details

Upgrade Steps

To install Oracle Data Integrator Based ETL, perform the following steps:

1. Run the Oracle Utilities Analytics Installer. The **Welcome** page appears.

Review the information on the Welcome page before you begin the installation.

2. Click **Next** to continue with the installation.
3. On the **Installation Location** page define an installation location/directory and click **Next**.
4. On the **Select Installation Type** page, select **ODI Based ETL**. Click **Next**.

Note that the options on the left navigation pane change based on the selected installation type.

5. Select **Oracle Data Integrator Based ETL** as the **Installation Type**.
6. Define the following and click **Next**.
 - Database and Java Home Details
 - Target Database Connection Details
 - Oracle Data Integrator Home and Schema Details
 - Oracle Data Integrator Agent and Repository Details
 - Target GoldenGate Details
7. On the **Database and Java Home Details** page, enter the following in the respective fields. Click **Next**.

| Field Name | Description | Value |
|----------------------|------------------------------------|--|
| Database Client Home | The database client home location. | Example:
/u01/app/product/12.1.0.2.0/
dbhome_1 |
| Java Home | The JDK home location. | Provide location of JDK 1.8.

Example: /u01/jdk_1.8.0_77 |

8. On the **Target Database Connection Details** page, enter the following in the respective fields. Click **Next**:

| Field Name | Description | Value |
|----------------------------------|--|--|
| Host | The host name of the server where the database resides. | Oracle Utilities Analytics Database Server |
| Port | The database port number on the database server used for connecting to the database. | Oracle Utilities Analytics Database Port. The default value is 1521. |
| Service Name | The service name for the database. | |
| Target Schema Password | The password for the target schema (DWADM). | |
| Confirm Target Schema Password | Confirm the password for the target schema (DWADM) here. | |
| Metadata Schema Password | The password for the metadata schema (MDADM). | |
| Confirm Metadata Schema Password | Confirm the password for the metadata (MDADM) schema here. | |

9. On the **ODI Home and Schema Details** page, enter the following in the respective fields. Click **Next**:

| Field Name | Description | Value |
|---|---|---|
| ODI Home | The directory where Oracle Data Integrator (ODI) has been installed. | Example:
/u01/
12.2.1_FMW_infrastructure_home |
| Supervisor User | The name of the Oracle Data Integrator Supervisor. | SUPERVISOR |
| Supervisor Password | The password of the Oracle Data Integrator Supervisor. | SUPERVISOR user password |
| Confirm Supervisor Password | Confirm the password of the Supervisor here. | |
| Master Repository Schema Name | Oracle Data Integrator master repository schema name. | OUA_MASTER |
| Master Repository Schema Password | The password of the master repository schema. | OUA_MASTER user's password |
| Confirm Master Repository Schema Password | Confirm the password of the Oracle Data Integrator master repository schema here. | |
| Work Repository Schema Name | Oracle Data Integrator work repository schema name. | OUA_WORK |
| Work Repository Schema Password | The password of the work repository schema. | OUA_WORK user's password |
| Confirm Work Repository Schema Password | Confirm the password of the Oracle Data Integrator work repository schema here. | |

10. On the **ODI Agent and Details** page, enter the following details in the respective fields. Click **Next**:

| Field Name | Description | Value |
|----------------|--|--|
| ODI Agent Host | The host on which Oracle Data Integrator WebLogic domain is created. | Oracle Data Integrator server host name. |
| ODI Agent Port | The port on which Oracle Data Integrator WebLogic agent is configured to run. This is the port of Oracle Data Integrator WebLogic Managed Server Port. | Provide available port and ensure to use the same port while creating Oracle Data Integrator managed server. |

11. On the **Target GoldenGate Details** page, enter the following details in the respective fields. Click **Next**:

| Field Name | Description | Value |
|--------------------------|---|--|
| GoldenGate Host | The host on the Oracle GoldenGate Manager. | |
| GoldenGate Home | This is the Oracle GoldenGate installed location. | Example:
/opt/local/ggs_12.2.0.1.1 |
| Target Database Home | The database home installed location on the target database server.

In case Oracle GoldenGate for target is not installed on the OUA database server, provide oracle client home location on the server on which Oracle GoldenGate is installed. | Example:
/u00/oracle/app/oracle/product/12.1.0.2.0/dbhome_1 |
| GoldenGate Manager Port | The port number on which Oracle GoldenGate Manager is running on the Oracle GoldenGate host. | The default value is 7830 |
| GoldenGate Algorithm | The algorithm configured in Oracle GoldenGate on the target database server. | The default value is BLOWFISH. |
| GoldenGate Encryptkey | The Encrypt Key configured in Oracle GoldenGate on the target database server. | The default value is "DEFAULT". |
| GoldenGate Shared Secret | The shared secret key configured in Oracle GoldenGate on the target database server. | Go to the Oracle GoldenGate prompt and run the command:

encrypt password <password of MDADM user>, encryptkey DEFAULT

Provide the result as the value. |

12. On the **Target JAgent Details** page, enter the following details in the respective fields. Click **Next**.

| Field Name | Description | Value |
|-------------------|---|---------------------------------------|
| JAgent Host | The host of Oracle GoldenGate Monitor JAgent. | |
| JAgent GoldenGate | The Oracle GoldenGate installed location where Oracle GoldenGate Monitor JAgent is running. | Example:
/opt/local/ggs_12.2.0.1.1 |

| Field Name | Description | Value |
|--------------------------------|---|-------|
| JAgent Port | Use the JAgent RMI port which is defined in the config properties file. | |
| JAgent User | The OS user used to configure JAgent. | |
| JAgent Wallet Password | The JAgent Wallet password. | |
| Confirm JAgent Wallet Password | Re-enter JAgent Wallet password to confirm. | |

13. On the **Installation Summary** page, verify the installation options you selected.

14. Click **Install** to begin the installation.

To change any configurations before starting the installation, use the navigation pane and select the topic to edit.

The **Installation Progress** page appears displaying the progress of the installation. Operations being performed as a part of the installation are logged to the terminal from which the installer was run. The detailed logs of the installation are also available in the logs/system directory under the installation location.

To quit before the installation is complete, click **Cancel**. Doing so will result in a partial installation; the portion of the software that was installed on your system before you click **Cancel** will remain on your system, and you will have to remove it manually.

15. On the **Installation Completed** page, click **Finish** to close the installer.

The Oracle Data Integrator based ETL is now installed.

Creating WebLogic Domain for Oracle Data Integrator Agent

Create the WebLogic Domain to bring up the WebLogic Agent (ODI Agent) to complete the steps. In this product release, ODI Domain creation is automated, and creation of both clustered and non-clustered domain is supported.

- [Creating a Non-Clustered Domain](#)
- [Creating a Clustered Domain](#)

Note: The following procedures assume that the pre-requisite Java 8/bin is in the PATH variable.

Creating a Non-Clustered Domain

To create a non-clustered domain, follow these steps:

Note: The password fields' values (RCUSCHEMAPWD,WEBLOGIC_PASSWORD) will be cleared from ODI_CONFIG.properties after executing createDomain.sh or createMachine.sh. Ensure these fields are updated for each invocation of createDomain.sh or createMachine.sh.

1. Navigate to the <OUA Environment>/etc directory and provide the following properties in the ODI_CONFIG.properties file.

| Property | Description |
|----------|------------------|
| | Mandatory fields |

| Property | Description |
|---------------------|---|
| DOMAIN_PATH | In Windows environment, replace “\” with “/” in the domain path.

For example:
C:/odi12.2.1/odi12.2.1_home/user_projects/domains/odi_domain5 |
| RCUPREFIX | Repository prefix created in the Configuring Oracle Data Integrator Repository Creation Utility (RCU) section. |
| RCUSCHEMAPWD | Repository schema password provided in the Configuring Oracle Data Integrator Repository Creation Utility (RCU) section. |
| WEBLOGIC_USERNAME | WebLogic user name for ODI domain |
| WEBLOGIC_PASSWORD | WebLogic password for ODI domain |
| ODI_DBSERVER | ODI database server name (target database server) |
| ODI_DBPORT | ODI database port (target database port) |
| ODI_DBNAME | ODI database name (target database name) |
| ADMIN_PORT | ODI domain admin port |
| ODI_DOMAIN_HOSTNAME | Host name on which the ODI domain is created |
| Optional fields | |
| NONSSL_PORT | If not specified, default port 7001 will be assigned. |
| MANAGED_SERVER_PORT | If not specified, default port 15101 will be assigned. |

- Navigate to the <OUA Environment>/bin directory and invoke the createDomain.sh/cmd script.

Refer to the sections [Starting WebLogic Admin Server](#) and [Starting Managed Server](#) to start the admin server and managed server.

Creating a Clustered Domain

To create a clustered domain, follow the steps below:

Note: The password fields’ values (RCUSCHEMAPWD,WEBLOGIC_PASSWORD) will be cleared from ODI_CONFIG.properties after executing createDomain.sh or createMachine.sh. Ensure these fields are updated for each invocation of createDomain.sh or createMachine.sh.

- Navigate to the <OUA Environment>/etc directory and provide the following properties in the ODI_CONFIG.properties file.

| Property | Description |
|------------------|-------------|
| Mandatory fields | |

| Property | Description |
|---------------------|--|
| DOMAIN_PATH | In Windows environment, replace “\” with “/” in the domain path.

For example: C:/odi12.2.1/odi12.2.1_home/user_projects/domains/odi_domain5 |
| RCUPREFIX | Repository prefix created in the Configuring Oracle Data Integrator Repository Creation Utility (RCU) section. |
| RCUSCHEMAPWD | Repository schema password provided in the Configuring Oracle Data Integrator Repository Creation Utility (RCU) section. |
| WEBLOGIC_USERNAME | WebLogic user name for ODI domain |
| WEBLOGIC_PASSWORD | WebLogic password for ODI domain |
| ODI_DBSERVER | ODI database server name (target database server) |
| ODI_DBPORT | ODI database port (target database port) |
| ODI_DBNAME | ODI database name (target database name) |
| ADMIN_PORT | ODI domain admin port |
| ODI_DOMAIN_HOSTNAME | Host name on which the ODI domain is created |
| CLUSTER_NAME | Additional mandatory field for clustered domain |

2. Navigate to the <OUA Environment>/bin directory and invoke the **createDomain.sh/cmd** script.

This creates an ODI domain with an Admin server and a Managed server (as ‘ODI_server1’) and assigned to the cluster.

Refer to the [Starting WebLogic Admin Server](#) and [Starting Managed Server](#) sections to start the Admin server and Managed server.

To create another managed server and add it to the cluster, follow these steps:

1. Bring up the Admin server.
2. Navigate to the <OUA Environment>/etc directory and provide the following mandatory properties in the ODI_CONFIG.properties file:
 - MANAGED_SERVER_NAME
 - MANAGED_SERVER_PORT
3. Provide the following optional properties in the ODI_CONFIG.properties file:
 - MACHINE_NAME
 - MACHINE_PORT
4. Navigate to <OUA_Environment>/bin and invoke createMachine.sh/cmd.

A new managed server is created with the specified name and assigned to the cluster.

Refer to the sections [Starting WebLogic Admin Server](#) and [Starting Managed Server](#) to start the Admin server and Managed server.

Starting WebLogic Admin Server

To start the WebLogic Admin server, perform the following steps:

1. In the command shell, change the directory to the directory of the WLS Home.

```
<MW_HOME>/user_projects/domains/<ODI_DOMAIN_NAME>/bin
```

2. Execute the `startweblogic` command:

In Unix:

```
nohup ./startWebLogic.sh > startWebLogic.log &
```

In Windows:

```
startWebLogic.cmd
```

Starting Managed Server

To start the `odi_server1` managed server, follow these steps:

1. Change the directory to WLS Home to start `odi_server1`:

In Unix:

```
<MW_HOME>/user_projects/domains/odi_domain/bin
```

```
nohup ./startManagedWebLogic.sh odi_server1 >
StartManagedWebLogic.log &
```

In Windows:

```
StartManagedWeblogic.cmd odi_server1
```

2. In the Oracle Data Integrator Studio, navigate to **Topology > Agents > OracleDIAgent**.
3. Right-click **OracleDIAgent** and click **Test** to test the connectivity of the configured Oracle Data Integrator Java EE agent.

Executing Post-Upgrade Script

To execute the post-upgrade script, follow these steps:

1. Execute `B1_MDFIX_ODM_270` in global context.
2. Login to ODI Client and navigate to **Designer > Load Plans and Scenario** folders.
3. Expand **Framework > Data Fix > B1_MDFIX_ODM_270**.
4. Right-click **B1_MDFIX_ODM_270**, click **Run**, and then select the context as **Global**.
5. Click **OK**.

Creating a Database Directory

Create a database directory '`B1_DATA_DUMP_DIR`' on the target database, as well as on each source database. This directory is used for logging the export import task used during the initial ELT load.

The following sample SQL creates a database directory pointing to the file system path `/scratch/file_data`:

```
CREATE DIRECTORY B1_DATA_DUMP_DIR AS '/scratch/file_data';
```

Configuring Source Applications

This section describes the instructions to be followed to configure source applications.

- [Prerequisites](#)
- [Configuration Steps](#)

Bring down the source application server, and ensure the source applications are stopped but source databases are up and accessible.

Prerequisites

Before running the source configuration tool, ensure Oracle Data Integrator domain is created, and admin and managed servers are running and accessible.

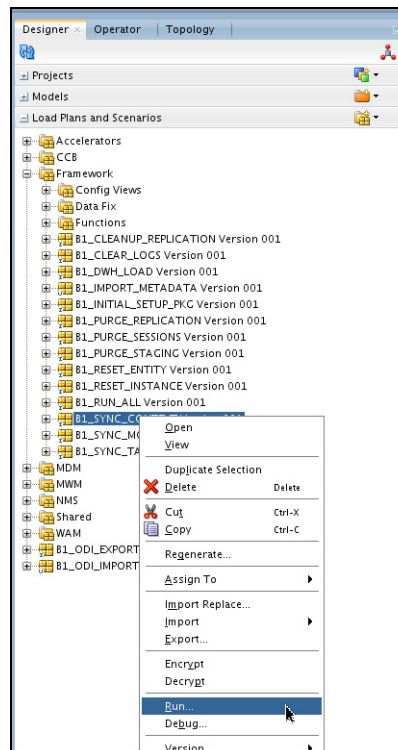
Configuration Steps

To configure the source applications, perform the following steps:

1. Register a source application.

For instructions to register a source, refer to the **Registering a Source** section in **Chapter 5: Configuring Oracle Utilities Analytics** in *Oracle Utilities Analytics Administration Guide*.

2. Ensure to use the same context_codes to configure the existing sources during the upgrade.
3. After running config.sh GUI utility, run B1_SYNC_CONTEXT as follows.
 - a. Login to Oracle Data Integrator Studio.
 - b. Navigate to **Designer > Load Plans and Scenarios > Framework..**
 - c. Right-click **B1_SYNC_CONTEXT** and select **Run**.



4. Select the context related to the source application, <no agent> as logical agent, and then click **OK**.
5. Run the B1_INITIAL_SETUP_PKG package.

Note: It is recommended to run `B1_INITIAL_SETUP_PKG` only once (after all the sources have been configured or after at least one source is configured).

- a. Login to Oracle Data Integrator Studio.
 - b. Navigate to **Designer > Load Plans and Scenarios > Framework**.
 - c. Right-click **B1_INITIAL_SETUP_PKG**, select **GLOBAL** context code, and then select **Run**.
6. Start all Oracle GoldenGate processes on source and target:
- a. Login into each source application GoldenGate server.
 - b. Go to the respective Oracle GoldenGate Home directory.
 - c. Start manager, JAgent, and all respective context extract processes.
 - d. Login to the target (Oracle Utilities Analytics) GoldenGate server.
 - e. Go to the Oracle GoldenGate Home directory.
 - f. Start manager, jagent and all respective context extract processes.

Upgrading Source Applications to be Compatible with v2.7.0

Before proceeding, ensure the source applications are compatible with Oracle Utilities Analytics v2.7.0. Refer to the [Supported Source Application Versions](#) section in [Chapter 3: Planning the Installation](#) for supported source applications' versions.

Ensure the following:

- Source applications' databases must be in archive log mode during their upgrade.
- Oracle GoldenGate processes should be up and running on both source and target during the source applications upgrade.
- Upgrade the Source application system as certified with OUA 2.7.0 but do not upgrade database software version.

After a successful source upgrade, do not release source applications for end users. Ensure the source applications are stopped, but source databases are up and accessible.

1. Login to the Oracle Utilities Analytics GoldenGate server.
2. Go to Oracle GoldenGate Home and run the shell script `restart.sh` from `BI270/Scripts/restart.sh`.

This shell script starts the replicate processes that are stopped due to the DDL changes in source system. Once all the DDL changes are in sync with the replication schema, the shell script is automatically terminated.

Monitor the `restart.sh` execution. Proceed with the next steps only when it is complete.

3. Validate that all columns are in sync.
4. Connect to the MDADM schema of the Oracle Utilities Analytics database and execute the below query.

The query should not return any records.

```
select TABLE_NAME, COLUMN_NAME
  from DBA_TAB_COLUMNS@<CONTEXT_CODE> LINK DTC
 where OWNER = 'SOURCE_APPLICATION_SCHEMA'
 and exists (select 1
             from MDADM.B1_REPLICATION_CFG_VW a
             where a.TABLE_NAME = DTC.TABLE_NAME
```

```

        and CONTEXT_CD = '<CONTEXT_CODE>'
        AND (BASE_REPLICATE_FLG = 'Y' OR CM_REPLICATE_FLG = 'Y'))
    MINUS
    select TABLE_NAME,COLUMN_NAME
    from DBA_TAB_COLUMNS
    where OWNER = '<CONTEXTCODE>REP'
    and COLUMN_NAME not like 'JRN%';

```

Following is an example query for ODM1 context.

```

select TABLE_NAME,COLUMN_NAME
from DBA_TAB_COLUMNS@ODM1_LINK DTC
where OWNER = 'CISADM'
and exists (select 1
            from MDADM.B1_REPLICATION_CFG_VW a
            where a.TABLE_NAME = DTC.TABLE_NAME
            and CONTEXT_CD = 'ODM1'
            AND (BASE_REPLICATE_FLG = 'Y' OR CM_REPLICATE_FLG = 'Y'))
    MINUS
select TABLE_NAME,COLUMN_NAME
from DBA_TAB_COLUMNS
where OWNER = 'ODM1REP'
and COLUMN_NAME not like 'JRN%';

```

5. If no source database software upgrade is required, it is not required to perform any kind of cleanup of Oracle GoldenGate processes.

In this case, do the following:

- Start all Oracle GoldenGate processes on source and target.
- Start the source app server and release the environment.

This indicates that the upgrade processes are complete.

Perform the following steps to cleanup the Oracle GoldenGate processes.

Note: The following procedure is only required when it is required to upgrade the source database software.

1. Connect to the MDADM schema in the Oracle Utilities Analytics database and execute the SQL mentioned below to get all the context codes.

```
Select CONTEXT_CD from b1_prod_instance where CONTEXT_CD<>'B1';
```

2. For each context returned by the query, perform the following steps:

- a. Execute the SQL mentioned below to get source Oracle GoldenGate database server, SID, and Oracle GoldenGate host, home on source server:

```
Select DB_HOST,DB_SID,GG_HOST,GG_HOME,GG_CFG_CD from b1_gg_cfg
where GG_CFG_CD='<Context_code>'
```

- b. Connect to the source database corresponding to context code as **sys user** and execute the following command:

```
alter system switch logfile
select SEQUENCE# from v$Log where STATUS='CURRENT';
```

- c. Note the result of the query mentioned above.

- d. Connect to the source Oracle GoldenGate server and log into the source Oracle GoldenGate prompt.

```
cd <GG_Home>
./ggsci
```

- e. Execute the following command:

```
info extract <Context_codeXXX>,showch
For example, info extract CCB1AAX,showch
```

- f. In the **Recovery Checkpoint** section, sequence should be = or > 1 returned by the following query:

```
select SEQUENCE# from v$Log where STATUS='CURRENT'
```

Repeat the check mentioned in the step e for each extract process.

- f. Ensure that the pump processes transfer all the changes to the target server. Lag at the **Chkpt** and **Time Since Chkpt** should be 0.
- g. On the source database server, drop all the Oracle GoldenGate processes by following these steps:

- a. Execute the following query to get the Oracle GoldenGate Owner name in the source database:

```
select SCHEMA_NAME
from MDADM.B1_CONTEXT_CFG_VW
where LSCHEMA_NAME = 'Journal'
and CONTEXT_CD = '<Context_code>';
```

- b. Login to the source Oracle GoldenGate prompt.

```
cd <GG_Home>
./ggsci
```

- c. Execute the following commands:

```
dblogin userid < GoldenGate Owner >,PASSWORD < GoldenGate
Owner password>
stop <Context_code>*
```

For example:

```
stop CCB1*
delete <Context_code>*
```

For example:

```
delete CCB1*
```

- d. Stop JAgent and stop manager:

```
Stop jagent
Stop mgr
```

Note: Note the source Oracle GoldenGate extracts context_codes of each source and source Oracle GoldenGate Owner info. The existing sources will be configured with same context during the upgrade.

- h. Connect as a **sys user** of the source database server and execute the following command:

```
<GG_Home>/ddl_disable.sql
```

- i. Rename the existing source Oracle GoldenGate Home on the source server.

Note the Oracle GoldenGate manager port number and source Oracle GoldenGate home before renaming it.

For example: mv <GG_Home> <GG_Home>.bkp

- j. On the Oracle Utilities Analytics database server, ensure the replicate processes apply all changes for the context code.

- Connect to the MDADM schema in Oracle Utilities Analytics database. Run the following query to get the target server and Oracle GoldenGate Home details on the target server.

```
select DB_HOST,DB_SID, GG_HOST, GG_HOME from b1_gg_cfg where
GG_CFG_CD='B1';
```

- Connect to the target server and login to the Oracle GoldenGate prompt.
- Execute the following:

```
cd <GG_Home >
./ggsci
Dblogin userid MDADM,password <MDADM user password>
Send replicat <Context_codeXX>,status
```

The current status will be at EOF.

- Check this for each replicate process for the context code and ensure the replicate processes completed writing all the changes.
- After checking the current status and after changes are in sync, for each replicate process for the context code, execute the following:

```
Stop <Context_code>*
```

For example: stop CCB1*

```
Delete <Context_code>*
```

For example: delete CCB1*

3. After all source application's changes are in sync in the Oracle Utilities Analytics database, execute the following command after connecting to the target GoldenGate Home prompt.

```
./ggsci
start mgr
start jagent
```

4. Upgrade source application databases.

- If the source database version is prior to 11.2.0.4, then upgrade to 11.2.0.4 or a later version.
- If the source database version is on 12c version, then 12.1.0.2 is mandatory.

5. Set up Oracle GoldenGate with the newly upgraded database software Oracle Home directory on source.

- a. Create a directory on the source database server.

For example: ../GoldenGate Home.

Oracle GoldenGate should be installed in this directory. This will be **Oracle GoldenGate home (OGG_Home)** on the source database server.

Ensure to note this directory location; it will be used during the Oracle Utilities Analytics installation.

- b. Install Oracle GoldenGate and provide the Home location as the directory location created in the step a.
- c. Open a command terminal or window, and set the source ORACLE_SID and ORACLE_HOME variables.

Set LD_LIBRARY_PATH using the following commands:

In Unix:

```
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
```

In Windows:

```
set LD_LIBRARY_PATH=%ORACLE_HOME%\lib;%LD_LIBRARY_PATH%
```

- d. In the Command window, change the directory to the Oracle GoldenGate Home directory, and execute the command:

In Unix:

```
./ggsci
```

In Windows:

```
ggsci
```

This opens the Oracle GoldenGate prompt.

- a. On the Oracle GoldenGate prompt, execute the following commands:

```
create SUBDIRS
start mgr
info all
Exit
```

- b. Ensure that the source database is in the **archivelog** mode.
- c. Connect to the source database as **sys user** and execute the below statements:

```
alter database add supplemental log data (primary key)
columns;
alter system set enable_goldengate_replication=TRUE
scope=both;
```

- e. Go to the Oracle GoldenGate home (OGG_Home) directory. Connect as **sys user** and execute the following commands.

Note: While executing the SQL commands in the steps l, m and n, provide the Oracle GoldenGate owner user if prompted for. All the scripts mentioned below are located in GoldenGate Home directory and must be executed after connecting as **sys user**.

```
@marker_setup.sql
@ddl_setup.sql
@role_setup.sql
```

- f. Exit the SQL*Plus login and create a directory 'diroby' inside OGG_Home directory.
- g. Change the directory to the Oracle GoldenGate Home directory, and execute the next steps.

6. Configure the encrypting data with the ENCKEYS method.

- a. Execute the following command:

```
cd <OGG_HOME>
KEYGEN key_length n
```

The above command generates the key value based on the value specified in the parameter "n". The key value has to be copied to ENCKEYS file against a logical name.

- b. For each key value generated above, provide a logical name (Logical name should not be the same for two different key values).

Enter the logical name space and then key value in the ENCKEYS file.

- c. Repeat the step above for each key values generated.
- d. Save the file with name ENCKEYS (Upper case only) without any extension.

Example:

```
cd $OGG_HOME
./keygen 128 1
0x8CE55035DD6893205A7BD6773FA8E670
```

- e. Open a new ASCII ENCKEYS file, if it does not exist for adding a new entry or open an existing ENCKEYS text file to append.
- f. Input the logical name, space and key value generated.

Example contents of file ENCKEYS:
CCB1KEY 0x8CE55035DD6893205A7BD6773FA8E670

- g. The source ENCKEYS file entry has to be appended to the intermediate server or target server which would be configured with the source system where target OGG is being configured.

Note: It is recommended to name Logical key name after <context_code>KEY. For example: if context code is CCB1, it is recommended to name CCB1KEY.

7. Generate the shared secret password.

- a. Run the following commands:

```
cd <OGG_HOME>
ggsci
ENCRYPT PASSWORD <GG Owner password> <algorithm> ENCRYPTKEY
<key_name>
```

Example:

```
cd $OGG_HOME
./ggsci
GGSCI (hostname) 1> ENCRYPT PASSWORD CCB01SRC AES128 ENCRYPTKEY
CCB1KEY
Encrypted password:
AADAAAAAAAAAAIAVGNHBFLLGFCHBTCVBFJFHUEJGNCFAOAFEOFBALELISFOEIFW
GRBZHCCMCYGYBDAZH
Algorithm used: AES128
```

- b. Note down the above generated ENCKEYS file logical name/key value, algorithm name used, and the generated encrypted password.

8. Set up Oracle GoldenGate Monitor JAgent on the source database servers. Proceed with the steps below.

Oracle GoldenGate Monitor JAgent should be setup on Oracle Utilities Analytics GoldenGate server and on all the source application GoldenGate servers. The OGG Monitor JAgent will be used to automatically copy generated Oracle GoldenGate scripts to both source and target GoldenGate homes and to start the extract and replicat processes on source and target.

After the Oracle GoldenGate software is installed and the manager is running, configure the Oracle GoldenGate Monitor JAgent.

Follow these steps to setup GoldenGate Monitor JAgent on both target and source servers:

1. Start the rmiregistry services.

Note the port on which RMI server is started. Use the following command:

```
rmiregistry 5559 &
```

Here, port number specified is 5559. If the port number is not specified, the default port 1099 is used.

2. Install Fusion Middleware Infrastructure.
3. Run the Oracle GoldenGate Monitor 12.2.1 installer.

- a. Set Oracle Home to the location where Fusion Middleware Infrastructure was installed.
- b. Choose the **installation type** as **Oracle GoldenGate Monitor Agent**.

- c. Edit the Config.properties file in the <OGG Monitor home>/oggmon/ogg_agent/cfg_templates and add or modify the below parameters.

```
<ACTUAL>: jagent.host=localhost
```

```
<CHANGE TO> : jagent.host=<<actual hostname on which OGG is installed>>
```

```
<ACTUAL>: monitor.jmx.username=cmroot
```

```
<CHANGE TO> : monitor.jmx.username=jmx_src
```

```
<ACTUAL>: jagent.username=root
```

```
<CHANGE TO> : jagent.username=<<OGG software installed OS user>>
```

```
<ACTUAL>: jagent.rmi.port=5559
```

```
<CHANGE TO> : jagent.rmi.port=5557 or any free port other than the one on which the rmiregistry is started
```

```
<ACTUAL>: agent.type.enabled=OGGMON
```

```
<CHANGE TO> : agent.type.enabled=OEM
```

```
<ACTUAL>: jagent.backward.compatibility=true
```

```
<CHANGE TO> : jagent.backward.compatibility=false
```

- d. Add the following parameter:

```
jagent.ssl=false
```

- e. Navigate to <OGG Monitor home>/oggmon/ogg_agent directory and run the below command:

For Unix:

```
export JAVA_HOME=<JDK home>
./createMonitorAgentInstance.sh
```

For Windows:

```
set JAVA_HOME=<JDK home>
./createMonitorAgentInstance.bat
```

- f. Enter the following:

- OGG home directory
- Path to be used for OGG Monitor Agent instance. It is recommended to provide a path, such as <OGG Monitor home>/Agents/ OGGMonitorInstance.

- A unique name to replace the timestamp in the name of the file used to start GG Monitor agent instance.
 - A unique name used for this OGG Monitor instance.
4. Execute the following command from the <path used for OGG Monitor instance provided in the step above>/bin:

Example location <OGG Monitor home>/Agents/OGGMonitorInstance/bin

In Unix:

```
export JAVA_HOME=<JDK home>
./pw_agent_util.sh -jagentonly
```

In Windows:

```
set JAVA_HOME=<JDK home> pw_agent_util.bat -jagentonly
```

5. Enter the Oracle wallet password.

This password has to be entered as the password for the JAGENT while running the installer (for target GG) and while running source configuration (for source GG).

Note the password and jagent.rmi.port value (JAgent Port). This information is required in subsequent installation.

6. Create a folder with the Context_code name in <GG Home>/dirdat.

For example: If WAM2 is the context being created for the WAM source then create a folder with name “WAM2” within the <GG Home>/dirdat/ folder.

7. Create a folder with name ‘<GG Home>/diroby’.
8. Navigate to <GG Home>/dirprm and edit the jagent.prm file.
9. Replace COMMAND java with COMMAND <JDK Home>/bin/java.

This ensures that the correct version of Java (1.8) is used while starting JAgent.

10. Navigate to OGG_Home directory > GoldenGate prompt:

```
ggsci
```

11. Start the jAgent process using the following command:

```
start jagent
```

The logs for JAgent are created at the following (example) location:
<OGG Monitor home>/Agents/OGGMonitorInstance/logs

12. Configure the source applications.
- Bring down the source application server.
 - Ensure the source applications are stopped, but the source databases are up and accessible.
 - Ensure that manager and Jagent processes are running on all the sources and target database systems before executing config.sh.
 - Ensure Oracle Data Integrator (ODI) domain is created, and Admin and managed servers are running before running the source configuration tool.

Perform the steps below to configure the applications:

- a. To register a source, follow the instructions described in the **Registering a Source** section in **Chapter 5: Configuring Oracle Utilities Analytics** in the *Oracle Utilities Analytics Administration Guide*.
- b. Use the same context_codes to configure the existing sources during the upgrade.
- c. After executing config.sh GUI utility, start all the OGG processes on source and target:
 - a. Login to each source application GoldenGate server.
 - b. Go to the respective Oracle GoldenGate Home directory.
 - c. Start manager, JAgent, and all the respective context extract processes.
 - d. Login to the target Oracle Utilities Analytics GoldenGate server.
 - e. Go to the Oracle GoldenGate Home directory.
 - f. Start manager, Jagent, and all the respective context extract processes.
- d. Start the source application server and release the source system environment.

The upgrade process is complete.

Upgrading Oracle Warehouse Builder Based Oracle Utilities Analytics

This section explains the steps to upgrade Oracle Warehouse Builder based source applications (Oracle Utilities Mobile Workforce Management and Oracle Utilities Meter Data Management). It includes the following:

- [Prerequisites](#)
- [Upgrading Oracle Utilities Analytics Database Component](#)
- [Installing RELADM Schema](#)
- [Installing MDADM Schema](#)
- [Installing DWADM Schema](#)

Prerequisites

Bring down the Oracle Warehouse Builder based source application(s) (Oracle Utilities Mobile Workforce Management, Oracle Utilities Meter Data Management, or Oracle Utilities Network Management System) to ensure that users are not accessing them.

To upgrade Oracle Warehouse Builder based source application, follow these steps:

1. Bring down the target applications (OBIEE).
2. Confirm that the source applications and database are not accessible. Proceed with next steps only after confirmation.
3. Generate the final extract from the source application and upload to the warehouse database.
4. Note the time after the final extract files are loaded in the Oracle Utilities Analytics warehouse database in DD-MON-YYYY HH24:MI:SS format.
5. Stop the FPD (File Processor Daemon).
6. Set the Oracle Warehouse Builder environment. Follow the steps below:
 - a. Connect to RELADM schema and execute the following query to get the server and Oracle Warehouse Builder environment directory details where it is set up.

```
select server_name,env_dir from BI_INSTALL_COMPONENTS
where comp_cd='BI_OWB';
cd <OWB environment directory>/etc and open the ENVIRON.INI file.
value of SPLENVIRON variable is the OWB environment name.
```

- b. Note the Oracle Warehouse Builder environment name and ensure it is the correct environment you are trying to upgrade.

```
cd <OWB environment directory>/bin and execute ksh ./
splenviron.sh -e <OWB environment name>
```

```
cd $SPLEBASE/bin
ksh ./stopFileprocessordaeomon.sh.
Please wait for file processor to stop.
```

- c. Verify it by executing the following command:

```
ps -ef|grep File
```

7. Bring down the source application(s) and database.

It is recommended to take sound consistent source and target databases backup.

8. Upgrade the Oracle Utilities Analytics database to 12.1.0.2.0 database version.
 9. Install Oracle GoldenGate 12.2.0.1.1 on the Oracle Utilities Analytics database server and start the manager process.

Note the GoldenGate Home and manager port number. This is applicable only if the source application is using Oracle Data Integrator based ELT.

10. Install new Oracle Data Integrator 12.2.1.0.0 (both infrastructure and ODI) and apply patch 23629220 on the Oracle Data Integrator server.

The patch on 12.2.1.0.0 is available on My Oracle Support (<http://support.oracle.com>).

11. Installing ODI 12.2.1.0.0 with Enterprise edition installation requires JDK1.8.0_77 and Oracle Fusion Middleware infrastructure 12.2.1.0.0 as prerequisite.

To summarize, a successful Oracle Warehouse Builder installation involves installing the following:

- JDK1.8.0(77)
- Oracle Fusion Middleware Infrastructure 12.2.1.0.0
- ODI 12.2.1.0.0
- ODI patch 23629220

Upgrading Oracle Utilities Analytics Database Component

This section describes the steps included to upgrade the Oracle Utilities Analytics database component:

- [Copying and Decompressing Install Media](#)
- [Creating Users and Tablespaces](#)

Before proceeding with upgrading the Oracle Utilities Analytics Database component, ensure the following are complete:

- Upgrading Oracle Utilities Analytics database to version 12.1.0.2.0
- Installing Oracle GoldenGate 12.2.0.1.1 on Oracle Utilities Analytics database server

Copying and Decompressing Install Media

To copy and decompress the install media, perform these steps:

1. Download Oracle Utilities Analytics version 2.7.0 Oracle Database part (**Oracle Utilities Analytics V2.7.0 Oracle Database Multiplatform.zip**) from the Oracle Software Delivery Cloud ([https:// edelivery.oracle.com](https://edelivery.oracle.com)).
2. Create a temporary directory (such as c:\OUA\temp for a Windows machine or /OUA/temp for a Linux machine).

This directory (referred as *<TEMPDIR>* below) must be located outside any current working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation, can be deleted after completing a successful installation.

3. Unzip **Oracle Utilities Analytics V2.7.0 Oracle Database Multiplatform.zip** to *<TEMPDIR>* using any zip utility.

Creating Users and Tablespaces

To create users and tablespaces:

1. Ensure to create users in the database with the following names without giving specific roles (if these do not exist already):

DWADM, DWUSER, DWREAD, MDADM, RELADM, OUA_MASTER, OUA_WORK and DWSTAGE

2. Connect as **sys user** and revoke the DBA privilege from the following users (if the DBA privilege has been granted to them):

DWADM, MDADM, RELADM, OUA_MASTER, OUA_WORK and DWSTAGE

3. Ensure to create roles with the following names (if these do not exist already):

DW_USER, DW_READ, DW_REPLICATE and DW_PRIVS_ROLE

4. Connect as **sys user** and execute the **Usersgrants.sql** in /Scripts/Usersgrants.sql.

This SQL provides the required grants to the created users.

5. Copy the DuplicateRecordCheck.sql file from the BI270\DWADM\Pre-Installation directory to the database server under ../<Temp> directory.
6. Connect to the DWADM schema and execute the ../<Temp>/DuplicateRecordCheck.sql.

Note: If the system displays that no rows are selected, then proceed. If the system displays some data, then contact Oracle Support team and do not proceed with the installation. It is recommended to wait until you get the data fix script.

Installing RELADM Schema

The RELADM schema is a metadata schema that consists of the database objects used for storing the product version and component installation information.

This section describes the RELADM schema initial installation, including:

- [Reviewing Storage.xml file](#)
- [Installation Steps](#)
- [Generating Database Statistics](#)

Reviewing Storage.xml file

The storage.xml file (that comes with the product and is in location *<TEMPDIR>/BI270/RELADM/Install- Upgrade*) allocates all the base tables and indexes to the default tablespace CISTS_01.

If you decide to allocate some tables or indexes outside of the default tablespace, then this has to be reflected in the **storage.xml** file by changing the tablespace name from the default value to a custom value.

Note: If database does not have CISTS_01 tablespace or the RELADM user does not have quota on CISTS_01 tablespace, edit the Storage.xml file to indicate the correct tablespace name on which RELADM has quota.

Installation Steps

Note: Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

In **Windows** environment, do the following:

1. Add Java 8 to the path variable as shown in the example below:

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
set CLASSPATH=<TEMPDIR>\BI270\RELADM\Jarfiles\*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/
<ORACLE SERVICE NAME>,RELADM,<Password of RELADM user>,,,,RELADM -
j
<JDK Home> -f <TEMPDIR>\BI270\RELADM\Jarfiles -v 1 -e true
```

In **Unix** environment, do the following:

1. Add Java 8 to the path variable as shown in example below:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/BI270/RELADM/Jarfiles/*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/<ORACLE
SERVICE NAME>,\
RELADM,<Password of RELADM user>,,,,RELADM \
-j <JDK Home> -f <TEMPDIR>/BI270/RELADM/Jarfiles -v 1 -e true
```

The utility creates the RELADM schema and system data definitions. If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects:

Connect as **sys user** and execute the following command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('RELADM');
```

Installing MDADM Schema

The MDADM schema is a metadata schema that consists of the database objects used for storing the metadata of Oracle Utilities Analytics.

For example: ETL job execution status, target tables for ETL, Oracle GoldenGate configuration details, etc.

This section describes the MDADM schema initial installation, including:

- [Reviewing Storage.xml file](#)
- [Installation Steps](#)
- [Generating Database Statistics](#)

Reviewing Storage.xml File

The **storage.xml** file (comes with the product and is in location `<TEMPDIR>/BI270/MDADM/Install- Upgrade`) allocates all the base tables and indexes to the default tablespace CISTS_01. If you decide to allocate some tables or indexes outside of the default tablespace, then this has to be reflected in the **storage.xml file** by changing the tablespace name from the default value to a custom value.

Note: If the database does not have CISTS_01 tablespace or the MDADM user does not have quota on CISTS_01 tablespace, you must edit the Storage.xml file to indicate the correct tablespace name on which MDADM has quota.

Installation Steps

To install the MDADM schema, follow these steps:

Note: The process prompts you for the MDADM user password. Ensure to run the OraDBI.jar (in the step below) using JDK 8.0.

Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

- In Windows:

1. Add Java 8 to the path variable as shown in the example below:

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
set CLASSPATH=<TEMPDIR>\BI270\MDADM\Jarfiles\*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/
<ORACLE SERVICE NAME>,MDADM,<Password of MDADM user>,,,,MDADM -
j
<JDK Home> -f <TEMPDIR>\BI270\MDADM\Jarfiles -v 1 -e true
```

- In Unix:

1. Add Java 8 to the path variable as shown in example below:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/BI270/MDADM/Jarfiles/*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI \
-d jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/<ORACLE
SERVICE NAME>,\
```



```
RELADM,<Password of RELADM user>,,,,,RELADM \
-j <JDK Home> -f <TEMPDIR>/BI270/RELADM/Jarfiles -v 1 -e true
```

The utility creates the MDADM schema and system data definitions.

If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects:

Connect as **sys user** and execute the following command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS('MDADM');
```

Installing DWADM Schema

The DWADM schema contains star schema objects (such as facts and dimensions) that include entire data in the data warehouse.

This section describes the DWADM schema initial installation, including:

- [Executing Pre-Installation SQL](#)
- [Reviewing Storage.xml File](#)
- [Installation Steps](#)
- [Generating Database Statistics](#)
- [Post-Installation Steps](#)

Executing Pre-Installation SQL

To execute specific SQL scripts before proceeding with the installation, follow these steps:

1. Copy the following scripts to the database server under ../<Temp> directory.
 - ... \Pre-Installation \PreInstallAddColumns.sql
 - ... \Pre-Installation \PreIndexCreation.sql
2. Change the current directory to ../<Temp>.
3. Connect to the DWADM schema and execute PreInstallAddColumns.sql.
4. Connect to the DWADM schema and execute PreIndexCreation.sql.
5. In the DWADM schema execute the following anonymous block.

```
set serveroutput on;
set timing on; BEGIN
-- Drop All Staging External Tables FOR i IN (SELECT uet.table_name
FROM USER_EXTERNAL_TABLES uet where uet.table_name
like 'STG%_EXT')
LOOP
EXECUTE IMMEDIATE 'drop table '|| i.table_name ||' CASCADE
CONSTRAINTS ';
END LOOP;
END;
/
```

6. Copy the following from BI270/DWADM/Pre-Installation/ to the database server under ../<Temp> directory. Execute them while connecting to the schema.
 - CF_BILLED_USAGE.sql
 - CF_CREW_TASK.sql

- CF_CUST_RECENT_OUTG.sql
 - CF_CUST_RST_OUTG.sql
7. Copy refresh_mvvs_where_mv_logs_outofsync.sql script from BI270/DWADM/ Pre-Installation/ to the database server under ../<Temp> directory. Execute it while connecting to the schema.
 8. Copy drop_out_of_sync_mv_logs.sql script from BI270/DWADM/ Pre-Installation/ to the database server under ../<Temp> directory. Execute it while connecting to the schema.

Reviewing Storage.xml File

The storage.xml file (comes with the product and is in location <TEMPDIR>/BI270/DWADM/ Install- Upgrade) allocates all the base tables and indexes to the default tablespace CISTS_01. If you decide to allocate tables or indexes outside of the default tablespace, then this has to be reflected in the storage.xml file by changing the tablespace name from the default value to a custom value.

Note: If the database does not have CISTS_01 tablespace or the DWADM user does not have quota on CISTS_01 tablespace, you must edit the Storage.xml file to indicate the correct tablespace name on which DWADM has quota.

Installation Steps

To install the DWADM schema, follow these steps:

Note: The process prompts you for the DWADM user password. Ensure to run the OraDBI.jar (in the step below) using JDK 8.0.

Ensure to copy/paste the commands into Notepad. Check for any special characters and extra spaces. If any, delete them and enter the respective characters manually. This helps to avoid any errors at run time.

- In Windows:

1. Add Java 8 to the path variable as shown in the example below:

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
set CLASSPATH=<TEMPDIR>\BI270\DWADM\Jarfiles\*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE PORT>/
<ORACLE SERVICE NAME>,DWADM,<Password of DWADM user>,,,,,DWADM -
j
<JDK Home> -f <TEMPDIR>\BI270\DWADM\Jarfiles -v 1 -e true
```

- In Unix:

1. Add Java 8 to the path variable as shown in example below:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

2. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<TEMPDIR>/BI270/DWADM/Jarfiles/*
```

3. Run OraDBI.jar as shown below:

```
java com.oracle.ouaf.oem.install.OraDBI \
```

```
-d jdbc:oracle:thin:@<DATABASE_SERVER>:<DATABASE_PORT>/<ORACLE
SERVICE_NAME>,\
RELADM,<Password of RELADM user>,,,,,RELADM \
-j <JDK Home> -f <TEMPDIR>/BI270/RELADM/Jarfiles -v 1 -e true
```

The utility creates the DWADM schema and system data definitions.

If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

Generating Database Statistics

During the installation process, new database objects may be added to the target database. Before using the database, generate the statistics for these new objects.

Connect as **sys user** and execute the command:

```
execute DBMS_STATS.GATHER_SCHEMA_STATS ('DWADM');
```

Post-Installation Steps

Perform these steps to complete the installation:

1. Connect to the Oracle Utilities Analytics database and execute the following:

```
... \BI270\DWADM\Post-Upgrade\ControlZoneUpdate.sql
```

2. Connect to the Oracle Utilities Analytics database with the system user and execute the script mentioned below:

```
.../BI270\DWADM\Post-Upgrade\DataCorrection2511.sql
```

Upgrading Oracle Utilities Analytics Based ELT Component

This section describes the steps included to upgrade the Oracle Utilities Analytics based ELT component:

- [Configuring ODI Repository Creation Utility \(RCU\)](#)
- [Setting up Oracle GoldenGate](#)
- [Copying and Decompressing Install Media](#)
- [Starting the Installer](#)
- [Upgrade Steps](#)

Before proceeding with upgrading the Oracle Utilities Analytics based ELT component, ensure the following are complete:

- Installing JDK1.8.0_7
- Installing Oracle Data Integrator 12.2.1.0.0 (both infrastructure and ODI)
- Applying Oracle Data Integrator patch 23629220

Configuring ODI Repository Creation Utility (RCU)

To configure the Oracle Data Integrator Repository Creation Utility (RCU), follow these steps:

1. Ensure RCU for Oracle Data Integrator is running and the required schemas are created in the target database.

ODI_ORACLE_HOME is an Oracle Home path which was used as Oracle Home while installing ODI Infrastructure installation and Oracle Data Integrator (ODI) installation.

2. Set or export JAVA_HOME variable to the 1.8.0_77+ installed directory.
3. Go to \$ODI_ORACLE_HOME/oracle_common/bin.

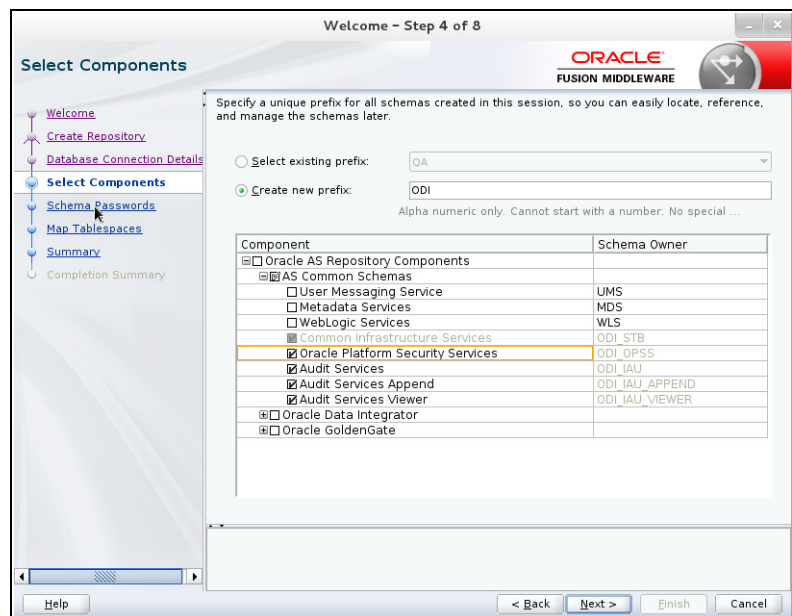
- Run the RCU utility.

For example:

```
export JAVA_HOME=/scratch/bi_oradata_01/jdk1.8.0_77
cd/scratch/bi_oradata_01/12.2.1_FMW_infrastructure/oracle_common/
bin
./rcu
```

- On the **Select Components** wizard in RCU, navigate to the **Create Repository** tab and select **System Load and Product Load**. Click **Next**.
- On the **Database Connection Details** tab, provide the database connection details. Click **Next**.
- On the **Select Components** tab, select the options as shown in the screen below.

Unselect the Oracle Data Integrator component. Click **Next**.



- On the **Schema Passwords** tab, note the passwords given as they are required while creating the Oracle Data Integrator domain.
- Navigate to the **Complete Summary** tab and click **Finish**.

It is not required to create the Oracle Data Integrator domain at this stage. Create it after running the Oracle Utilities Analytics installer and before running the source configuration tool.

Setting up Oracle GoldenGate

This section describes the following:

- [Setting up Oracle GoldenGate on Source Database Server](#)
- [Setting up Oracle GoldenGate on Target Database Server](#)
- [Setting Up Oracle GoldenGate Monitor JAgent on Target and Source Database Servers](#)

Setting up Oracle GoldenGate on Source Database Server

Note: Before proceeding, start the source database and ensure it is accessible. Bring down the source application server.

To set up each source instance, follow these steps:

1. Create a directory on the source database server (For example: ../GoldenGate Home) and install Oracle GoldenGate in that directory. It is Oracle GoldenGate home (OGG_Home) on the source database server.

Note: Note this directory location; it is used during the Oracle Utilities Analytics installation.

2. Install Oracle GoldenGate.

Download Oracle GoldenGate 12.2.0.1.1 from Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).

For installation instructions, refer to the respective installation documentation at <http://docs.oracle.com/goldengate/1212/gg-winux/index.html>.

3. Provide the Oracle GoldenGate Home location as the directory location created in the step 1.
4. Open a command terminal or window, and set the source ORACLE_SID and ORACLE_HOME variables.
5. Set the LD_LIBRARY_PATH as follows:

In Unix:

```
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
```

In Windows:

```
set LD_LIBRARY_PATH=%ORACLE_HOME%\lib;%LD_LIBRARY_PATH%
```

6. In the Command window, change directory to the Oracle GoldenGate home directory, and execute the following command:

In Unix:

```
./ggsci
```

In Windows:

```
ggsci
```

The Oracle GoldenGate prompt is shown.

7. At the Oracle GoldenGate prompt, execute the following commands in the order listed:

- create SUBDIRS
- start mgr - Starts the Oracle GoldenGate manager process.
- info all - Verifies if the manager process is running.
- exit - Exits Oracle GoldenGate.

8. Ensure that the source database is in the archivelog mode.

9. Connect to the source database as **sys user** and execute the following statements:

```
alter database add supplemental log data (primary key) columns;
alter system set enable_goldengate_replication=TRUE scope=both;
```

10. In the Command window, navigate to the Oracle GoldenGate home (OGG_Home) directory.

11. Open the GOBALS file in the directory and add the below command:

```
EnableMonitoring
```

12. Navigate to the Oracle GoldenGate home (OGG_Home) directory.

13. Connect to the database as **sys user** using SQL*Plus.

Ensure OGG_Home to be the current directory while invoking SQL*Plus.

14. Create a new user.

For example: ODM01SRC

This user is the Oracle GoldenGate owner. Ensure to assign a tablespace to this user that is not assigned to any other user.

Note: Ensure to note down the Oracle GoldenGate Owner Username. It is used in the Oracle Utilities Analytics installation.

15. Connect to the source database as **sys user**.

16. Execute the following commands:

Note: Ensure to modify the GoldenGate owner placeholder with actual name of the database user created in step 14.

```
grant CREATE SESSION,CONNECT,RESOURCE,ALTER SYSTEM to <GoldenGate
Owner>;
grant unlimited tablespace to <GoldenGate owner> with admin option;
EXECUTE dbms_goldengate_auth.grant_admin_privilege('<GoldenGate
Owner>', 'capture');
grant unlimited tablespace to <GoldenGate Owner> with admin option;
Revoke dba from <GoldenGate Owner>;
grant create any view to <GoldenGate Owner>; grant select any
dictionary to <GoldenGate Owner>; GRANT CREATE ANY DIRECTORY TO
<GoldenGate Owner>; GRANT DROP ANY DIRECTORY TO <GoldenGate Owner>;
GRANT EXP_FULL_DATABASE TO <GoldenGate Owner>; GRANT
IMP_FULL_DATABASE TO <GoldenGate Owner>;
```

17. Connect to the <source application>ADM schema (such as CISADM). Execute the following commands:

For **Oracle Utilities Customer Care and Billing** source database, execute the following grants:

```
Grant select on F1_MST_CONFIG to <GoldenGate owner user created in
step 16>
Grant select on F1_EXT_LOOKUP_VAL to <GoldenGate owner user created
in step 16>
Grant select on F1_BKT_CONFIG to <GoldenGate owner user created in
step 16>
Grant select on F1_BKT_CONFIG_VAL to <GoldenGate owner user created
in step 16>
```

For **Oracle Utilities Operational Device Management** source database, execute the following grants:

```
Grant select on F1_MST_CONFIG to <GoldenGate owner user created in
step 16>
Grant select on F1_EXT_LOOKUP_VAL to <GoldenGate owner user created
in step 16>
```

For **Oracle Utilities Meter Data Management** source database, execute the following grants:

```
Grant select on <application ADM Schema>.F1_MST_CONFIG to
<GoldenGate Owner>;
Grant select on <application ADM Schema>.F1_EXT_LOOKUP_VAL to
<GoldenGate Owner>;
```

For **Oracle Utilities Work and Asset Management** source database, execute the following grants:

```
Grant select on <application ADM Schema>. F1_EXT_LOOKUP_VAL to
<GoldenGate Owner>;
Grant select on <application ADM Schema>.F1_MST_CONFIG to
<GoldenGate Owner>;
Grant select on <application ADM Schema>. F1_BKT_CONFIG to
<GoldenGate Owner>;
Grant select on <application ADM Schema>. F1_BKT_CONFIG_VAL to
<GoldenGate Owner>;
```

Note: While executing SQL commands in steps 15, 16, and 17, provide the GoldenGate owner user (if prompted for).

All the scripts mentioned below are located in GoldenGate Home directory and must be executed after connecting to the database as **sys user**.

18. Execute the following commands in the order listed below:

```
@marker_setup.sql
@ddl_setup.sql
@role_setup.sql
```

19. Exit SQL*Plus.
20. In the Command window, create a directory “diroby” in the OGG_Home directory.
21. Change directory to the Oracle GoldenGate Home directory, and execute the following:
- Steps in [Configuration for Encrypting Data Using ENCKEYS Method](#).
 - Steps in [Generating Shared Secret Password](#).

Note: Execute these steps before running the Oracle Utilities Analytics installer. See <http://docs.oracle.com/goldengate/c1221/gg-winux/index.html> for more details.

Configuration for Encrypting Data Using ENCKEYS Method

To configure for encrypting data using the ENCKEYS method, follow these steps:

- a. Execute the following command:

```
cd <OGG_HOME>
KEYGEN key_length n
```

The above command generates the key value based on the value specified in the parameter “n”. The key value has to be copied to ENCKEYS file against a logical name.

- For each key value generated above, provide a logical name (Logical name should not be the same for two different key values). Enter the logical name space and then key value in the ENCKEYS file.
- Repeat the step ‘b’ for each key values generated.
- Save the file with name ENCKEYS (Upper case only) without any extension.

Example:

```
cd $OGG_HOME
./keygen 128 1
0x8CE55035DD6893205A7BD6773FA8E670
```

- e. Open a new ASCII ENCKEYS file if it does not exist for adding a new entry or open an existing ENCKEYS text file to append.
- f. Input the Logical name, space and key value generated.

Example contents of file ENCKEYS:
CCB1KEY 0x8CE55035DD6893205A7BD6773FA8E670

- g. The source ENCKEYS file entry has to be appended to the intermediate server or target server which would be configured with the source system where target OGG is being configured.

Note: It is recommended to name Logical key name after <context_code>KEY. For example: if context code is CCB1, it is recommended to name CCB1KEY.

Generating Shared Secret Password

To generate the shared secret password, follow these steps:

1. Execute the following command:

```
cd <OGG_HOME>
ggsci
ENCRYPT PASSWORD <GG Owner password> <algorithm> ENCRYPTKEY
<key_name>
```

Example:

```
cd $OGG_HOME
./ggsci
GGSCI (hostname) 1> ENCRYPT PASSWORD CCB01SRC AES128 ENCRYPTKEY
CCB1KEY
Encrypted password:
AADAAAAAAAAAAAAIAVGNHBFLLGFCHBTCVBFJFHUEJGNCFAOAFEOFBALELISFOEIFWGRB
ZHCCMCYGYBDAZH
Algorithm used: AES128
```

2. Note the above generated ENCKEYS file logical name/key value, algorithm name used, and the generated encrypted password.

Setting up Oracle GoldenGate on Target Database Server

To set up Oracle GoldenGate on the target database server, follow these steps:

1. Create a directory on the target database server.

For example: ../GoldenGateHome

Oracle GoldenGate should be installed in this directory. It is **Oracle GoldenGate home (OGG_Home)** on the target Oracle Utilities Analytics database server.

Note: Ensure to note the directory location; it will be used in the Oracle Utilities Analytics installation.

2. Install Oracle GoldenGate and provide the GoldenGate Home location as the directory location created in the step 1.
3. In the Command window, set the target ORACLE_SID and ORACLE_HOME variables.

Set LD_LIBRARY_PATH using the following commands:

In Unix:

```
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
```

In Windows:


```
set LD_LIBRARY_PATH=%ORACLE_HOME%/lib:%LD_LIBRARY_PATH%
```

4. In the Command window, change the directory to the **GoldenGate home** directory and execute the below command:

In Unix:

```
./ggsci
```

In Windows:

```
ggsci
```

The Oracle GoldenGate prompt is shown.

5. At the prompt, execute the following commands in the order listed below:
 - `create SUBDIRS`
 - `start mgr` - Starts the Oracle GoldenGate manager process.
 - `info all` - Verifies if the manager process is running.
 - `exit`
6. Create a directory “diroby” in the OGG_Home directory.
7. Connect to the target database as **sys user** and execute the below query:


```
alter system set enable_goldengate_replication=TRUE scope=both;
```
8. In the Command window, navigate to the Oracle GoldenGate Home (OGG_Home) directory.
9. Edit the GLOBALS file in the <GG home> directory and add the following command.:


```
EnableMonitoring
```
10. Navigate to the Oracle GoldenGate home (OGG_Home) directory.
11. If the ENCKEYS file does not exist, follow these steps:
 - a. Create and open a new ASCII ENCKEYS file.
 - b. Add the key value/values that are generated on the sources to the ENCKEYS file in target OGG home. This is done for the context codes for which source is configured.

A sample ENCKEYS file in target OGG home is as below:

```
CCB1KEY 0x8CE55035DD6893205A7BD6773FA8E670
```

Setting up Oracle GoldenGate Monitor JAgent on Target and Source Database Servers

Set up Oracle GoldenGate Monitor JAgent on Oracle Utilities Analytics GoldenGate server and on all the source application GoldenGate servers.

The Oracle GoldenGate Monitor JAgent is used to automatically copy the generated Oracle GoldenGate scripts to both source and target GoldenGate Home directories, and to start the extract and replicate processes on source and target.

To setup Oracle GoldenGate Monitor JAgent on both target and source database servers, follow these steps:

1. Ensure Oracle GoldenGate is installed and manager is running.
2. Start the rmiregistry services using the following command:

```
rmiregistry 5559 &
```

Ensure to note down the port on which RMI server is started. The port number specified here is 5559. If it is not specified, the default port 1099 will be used.

3. Install Fusion Middleware Infrastructure.
4. Run the OGG Monitor 12.2.1 installer.
 - a. Set Oracle Home to the location where Fusion Middleware Infrastructure was installed in step 2.
 - b. Choose installation type as OGG Monitor Agent.
5. Edit the Config.properties file in the <OGG Monitor home>/oggmon/ogg_agent/cfg_templates and add/modify the below parameters.

```

<ACTUAL>      : jagent.host=localhost
<CHANGE TO>  : jagent.host=<<actual hostname on which OGG is
installed>>

<ACTUAL>      : monitor.jmx.username=cmroot
<CHANGE TO>  : monitor.jmx.username=jmx_src

<ACTUAL>      : jagent.username=root
<CHANGE TO>  : jagent.username=<<OGG software installed OS user>>

<ACTUAL>      : jagent.rmi.port=5559
<CHANGE TO>  : jagent.rmi.port=5557 or any free port other than the
one on which the rmiregistry is started

<ACTUAL>      : agent.type.enabled=OGGMON
<CHANGE TO>  : agent.type.enabled=OEM
<ACTUAL>      : jagent.backward.compatibility=true
<CHANGE TO>  : jagent.backward.compatibility=false

```

6. Add the following parameter:


```
jagent.ssl=false
```
7. Navigate to <OGG Monitor home>/oggmon/ogg_agent directory and run the below command:

In Unix:

```
export JAVA_HOME=<JDK home>
./createMonitorAgentInstance.sh
```

In Windows:

```
set JAVA_HOME=<JDK home>
./createMonitorAgentInstance.bat
```

- a. Enter the following:
 - Oracle GoldenGate Home directory.
 - Path to be used for Oracle GoldenGate Monitor Agent instance.

It is recommended to provide a path (such as <OGG Monitor home>/Agents/OGGMonitorInstance).

 - A unique name to replace the timestamp in the name of the file used to start GG Monitor agent instance.

Provide a unique name to be used for this Oracle GoldenGate Monitor instance.
- b. Execute the command below from <path used for OGG Monitor instance provided in the step above>/bin.

Example location: <OGG Monitor home>/Agents/OGGMonitorInstance/bin

In Unix:

```
export JAVA_HOME=<JDK home>
./pw_agent_util.sh -jagentonly
```

In Windows:

```
set JAVA_HOME=<JDK home>
pw_agent_util.bat -jagentonly
```

8. Enter the Oracle wallet password.

This password has to be entered as the password for the JAGENT while running the installer (for target GoldenGate), and while running the source configuration (for source GoldenGate).

Ensure to note the password and jagent.rmi.port value (JAgent Port). This information is required in subsequent installation.

9. Create a folder with the Context_code name in <GG Home>/dirdat.

For example: If WAM2 is created for the WAM source, then create a folder with name “WAM2” within the <GG Home>/dirdat/ folder.

10. Navigate to <GG Home>/dirprm and edit jagent.prm file.

Replace COMMAND java with COMMAND <JDK Home>/bin/java.

This ensures that the correct version of java (1.8) is used while starting JAgent.

11. Navigate to OGG_Home directory and run the following command at the Oracle GoldenGate prompt:

```
ggsci
```

12. Start the jAgent process using the following command:

```
start jagent
```

The logs for JAgent are created at the following (example) location.

```
<OGG Monitor home>/Agents/OGGMonitorInstance/logs
```

Copying and Decompressing Install Media

To download and decompress the install media, perform these steps:

1. Download the Oracle Utilities Analytics version 2.7.0 Multiplatform part (**Oracle Utilities Analytics V2.7.0 Multiplatform.zip**) from the Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).
2. Create a temporary directory, such as c:\OUA\temp or /OUA/temp (referred to <TEMPDIR> below).

This directory must be located outside any current working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.

3. Unzip **Oracle Utilities Analytics V2.7.0 Multiplatform.zip** to <TEMPDIR>.

Starting the Installer

For an AIX Operating System, set the following environment variable before starting the Oracle Utilities Analytics installation:

```
export IBM_JAVA_OPTIONS="-Xmx2g -XX:PermSize=64m -
XX:MaxPermSize=3200m
```

To start the Oracle Data Integrator Based ETL component, follow these steps:

1. Go to the temporary folder containing the installer.
2. Run the following command from this folder:

```
java -jar <TEMPDIR>/OUA_2.7.0.0.0_generic.jar -logLevel finest
```

Note: The minimum JDK required for running the Oracle Utilities Analytics installer is JDK 1.8.

The **Welcome** page appears.

3. Review the information before you begin the installation. Click **Next** to continue with the installation.
4. Complete the tasks on the navigation pane.

Each item in the navigation pane represents a specific installer screen that prompts you for information required to install the software.

Note: If you are running the installer multiple times on a server, check for a file named ENVIRON.INI in /tmp (in Unix) and C:\spl\temp (in Windows). If the file exists, delete the file before invoking the installer.

Upgrade Steps

To install Oracle Data Integrator Based ETL, perform the following steps:

1. Run the Oracle Utilities Analytics Installer. The **Welcome** page appears.

Review the information on the Welcome page before you begin the installation.

2. Click **Next** to continue with the installation.
3. On the **Installation Location** page define an installation location/directory and click **Next**.
4. On the **Select Installation Type** page, select **ODI Based ETL**. Click **Next**.

Note that the options on the left navigation pane change based on the selected installation type.

5. Select **Oracle Data Integrator Based ETL** as the **Installation Type**.
6. Define the following and click **Next**.
 - Database and Java Home Details
 - Target Database Connection Details
 - Oracle Data Integrator Home and Schema Details
 - Oracle Data Integrator Agent and Repository Details
 - Target GoldenGate Details

7. On the **Database and Java Home Details** page, enter the following in the respective fields. Click **Next**.

| Field Name | Description | Value |
|----------------------|------------------------------------|--|
| Database Client Home | The database client home location. | Example:
/u01/app/product/12.1.0.2.0/
dbhome_1 |
| Java Home | The JDK home location. | Provide location of JDK 1.8.

Example: /u01/jdk_1.8.0_77 |

8. On the **Target Database Connection Details** page, enter the following in the respective fields. Click **Next**:

| Field Name | Description | Value |
|----------------------------------|--|--|
| Host | The host name of the server where the database resides. | Oracle Utilities Analytics Database Server |
| Port | The database port number on the database server used for connecting to the database. | Oracle Utilities Analytics Database Port. The default value is 1521. |
| Service Name | The service name for the database. | |
| Target Schema Password | The password for the target schema (DWADM). | |
| Confirm Target Schema Password | Confirm the password for the target schema (DWADM) here. | |
| Metadata Schema Password | The password for the metadata schema (MDADM). | |
| Confirm Metadata Schema Password | Confirm the password for the metadata (MDADM) schema here. | |

9. On the **ODI Home and Schema Details** page, enter the following in the respective fields. Click **Next**:

| Field Name | Description | Value |
|-----------------------------|--|---|
| ODI Home | The directory where Oracle Data Integrator (ODI) has been installed. | Example:
/u01/
12.2.1_FMW_infrastructure_home |
| Supervisor User | The name of the Oracle Data Integrator Supervisor. | SUPERVISOR |
| Supervisor Password | The password of the Oracle Data Integrator Supervisor. | SUPERVISOR user password |
| Confirm Supervisor Password | Confirm the password of the Supervisor here. | |

| Field Name | Description | Value |
|---|---|----------------------------|
| Master Repository Schema Name | Oracle Data Integrator master repository schema name. | OUA_MASTER |
| Master Repository Schema Password | The password of the master repository schema. | OUA_MASTER user's password |
| Confirm Master Repository Schema Password | Confirm the password of the Oracle Data Integrator master repository schema here. | |
| Work Repository Schema Name | Oracle Data Integrator work repository schema name. | OUA_WORK |
| Work Repository Schema Password | The password of the work repository schema. | OUA_WORK user's password |
| Confirm Work Repository Schema Password | Confirm the password of the Oracle Data Integrator work repository schema here. | |

10. On the **ODI Agent and Details** page, enter the following details in the respective fields.
Click **Next**:

| Field Name | Description | Value |
|----------------|--|--|
| ODI Agent Host | The host on which Oracle Data Integrator WebLogic domain is created. | Oracle Data Integrator server host name. |
| ODI Agent Port | The port on which Oracle Data Integrator WebLogic agent is configured to run. This is the port of Oracle Data Integrator WebLogic Managed Server Port. | Provide available port and ensure to use the same port while creating Oracle Data Integrator managed server. |

11. On the **Target GoldenGate Details** page, enter the following details in the respective fields.
Click **Next**:

| Field Name | Description | Value |
|-----------------|---|---------------------------------------|
| GoldenGate Host | The host on the Oracle GoldenGate Manager. | |
| GoldenGate Home | This is the Oracle GoldenGate installed location. | Example:
/opt/local/ggs_12.2.0.1.1 |

| Field Name | Description | Value |
|--------------------------|---|---|
| Target Database Home | The database home installed location on the target database server.

In case Oracle GoldenGate for target is not installed on the OUA database server, provide oracle client home location on the server on which Oracle GoldenGate is installed. | Example:
/u00/oracle/app/oracle/product/12.1.0.2.0/dbhome_1 |
| GoldenGate Manager Port | The port number on which Oracle GoldenGate Manager is running on the Oracle GoldenGate host. | The default value is 7830. |
| GoldenGate Algorithm | The algorithm configured in Oracle GoldenGate on the target database server. | The default value is BLOWFISH. |
| GoldenGate Encryptkey | The Encrypt Key configured in Oracle GoldenGate on the target database server. | The default value is "DEFAULT". |
| GoldenGate Shared Secret | The shared secret key configured in Oracle GoldenGate on the target database server. | Go to the Oracle GoldenGate prompt and run the command:

<pre>encrypt password <password of MDADM user>, encryptkey DEFAULT</pre>
Provide the result as the value. |

12. On the **Target JAgent Details** page, enter the following details in the respective fields. Click **Next**.

| Field Name | Description | Value |
|------------------------|---|---------------------------------------|
| JAgent Host | The host of Oracle GoldenGate Monitor JAgent. | |
| JAgent GoldenGate | The Oracle GoldenGate installed location where Oracle GoldenGate Monitor JAgent is running. | Example:
/opt/local/ggs_12.2.0.1.1 |
| JAgent Port | Use the JAgent RMI port which is defined in the config properties file. | |
| JAgent User | The OS user used to configure JAgent. | |
| JAgent Wallet Password | The JAgent Wallet password. | |

| Field Name | Description | Value |
|--------------------------------|---|-------|
| Confirm JAgent Wallet Password | Re-enter JAgent Wallet password to confirm. | |

13. On the **Installation Summary** page, verify the installation options you selected.

14. Click **Install** to begin the installation.

To change any configurations before starting the installation, use the navigation pane and select the topic to edit.

The **Installation Progress** page appears displaying the progress of the installation. Operations being performed as a part of the installation are logged to the terminal from which the installer was run. The detailed logs of the installation are also available in the logs/system directory under the installation location.

To quit before the installation is complete, click **Cancel**. Doing so will result in a partial installation; the portion of the software that was installed on your system before you click **Cancel** will remain on your system, and you will have to remove it manually.

15. On the **Installation Completed** page, click **Finish** to close the installer.

The Oracle Data Integrator based ETL is now installed.

Creating WebLogic Domain for Oracle Data Integrator Agent

Create the WebLogic Domain to bring up the WebLogic Agent (ODI Agent) to complete the steps. In this product release, ODI Domain creation is automated, and creation of both clustered and non-clustered domain is supported.

- [Creating a Non-Clustered Domain](#)
- [Creating a Clustered Domain](#)

Note: The following procedures assume that the pre-requisite Java 8/bin is in the PATH variable.

Creating a Non-Clustered Domain

To create a non-clustered domain, follow these steps:

Note: The password fields' values (RCUSCHEMAPWD,WEBLOGIC_PASSWORD) will be cleared from ODI_CONFIG.properties after executing createDomain.sh or createMachine.sh. Ensure these fields are updated for each invocation of createDomain.sh or createMachine.sh.

1. Navigate to the <OUA Environment>/etc directory and provide the following properties in the ODI_CONFIG.properties file.

| Property | Description |
|------------------|---|
| Mandatory fields | |
| DOMAIN_PATH | In Windows environment, replace “\” with “/” in the domain path.

For example:
C:/odi12.2.1/odi12.2.1_home/user_projects/domains/odi_domain5 |

| Property | Description |
|---------------------|---|
| RCUPREFIX | Repository prefix created in the Configuring ODI Repository Creation Utility (RCU) section. |
| RCUSCHEMAPWD | Repository schema password provided in the Configuring ODI Repository Creation Utility (RCU) section. |
| WEBLOGIC_USERNAME | WebLogic user name for ODI domain |
| WEBLOGIC_PASSWORD | WebLogic password for ODI domain |
| ODI_DBSERVER | ODI database server name (target database server) |
| ODI_DBPORT | ODI database port (target database port) |
| ODI_DBNAME | ODI database name (target database name) |
| ADMIN_PORT | ODI domain admin port |
| ODI_DOMAIN_HOSTNAME | Host name on which the ODI domain is created |
| Optional fields | |
| NONSSL_PORT | If not specified, default port 7001 will be assigned. |
| MANAGED_SERVER_PORT | If not specified, default port 15101 will be assigned. |

- Navigate to the <OUA Environment>/bin directory and invoke the createDomain.sh/cmd script.

Refer to the sections [Starting WebLogic Admin Server](#) and [Starting Managed Server](#) to start the admin server and managed server.

Creating a Clustered Domain

To create a clustered domain, follow the steps below:

Note: The password fields' values (RCUSCHEMAPWD, WEBLOGIC_PASSWORD) will be cleared from ODI_CONFIG.properties after executing createDomain.sh or createMachine.sh. Ensure these fields are updated for each invocation of createDomain.sh or createMachine.sh.

- Navigate to the <OUA Environment>/etc directory and provide the following properties in the ODI_CONFIG.properties file.

| Property | Description |
|------------------|--|
| Mandatory fields | |
| DOMAIN_PATH | In Windows environment, replace “\” with “/” in the domain path.

For example: C:/odi12.2.1/odi12.2.1_home/user_projects/domains/odi_domain5 |

| Property | Description |
|---------------------|---|
| RCUPREFIX | Repository prefix created in the Configuring ODI Repository Creation Utility (RCU) section. |
| RCUSCHEMAPWD | Repository schema password provided in the Configuring ODI Repository Creation Utility (RCU) section. |
| WEBLOGIC_USERNAME | WebLogic user name for ODI domain |
| WEBLOGIC_PASSWORD | WebLogic password for ODI domain |
| ODI_DBSERVER | ODI database server name (target database server) |
| ODI_DBPORT | ODI database port (target database port) |
| ODI_DBNAME | ODI database name (target database name) |
| ADMIN_PORT | ODI domain admin port |
| ODI_DOMAIN_HOSTNAME | Host name on which the ODI domain is created |
| CLUSTER_NAME | Additional mandatory field for clustered domain |

2. Navigate to the <OUA Environment>/bin directory and invoke the **createDomain.sh/cmd** script.

This creates an ODI domain with an Admin server and a Managed server (as 'ODI_server1') and assigned to the cluster.

Refer to the [Starting WebLogic Admin Server](#) and [Starting Managed Server \(odi_server1\)](#) sections to start the Admin server and Managed server.

To create another managed server and add it to the cluster, follow these steps:

1. Bring up the Admin server.
2. Navigate to the <OUA Environment>/etc directory and provide the following mandatory properties in the ODI_CONFIG.properties file:
 - MANAGED_SERVER_NAME
 - MANAGED_SERVER_PORT
3. Provide the following optional properties in the ODI_CONFIG.properties file:
 - MACHINE_NAME
 - MACHINE_PORT
4. Navigate to <OUA_Environment>/bin and invoke createMachine.sh/cmd.

A new managed server is created with the specified name and assigned to the cluster.

Refer to the sections [Starting WebLogic Admin Server](#) and [Starting Managed Server \(odi_server1\)](#) to start the Admin server and Managed server.

Starting WebLogic Admin Server

To start the WebLogic Admin server, perform the following steps:

1. In the command shell, change the directory to the directory of the WLS Home.

```
<MW_HOME>/user_projects/domains/<ODI_DOMAIN_NAME>/bin
```

2. Execute the startweblogic command:

In Unix:

```
nohup ./startWebLogic.sh > startWebLogic.log &
```

In Windows:

```
startWebLogic.cmd
```

Starting Managed Server (odi_server1)

To start the odi_server1 managed server, follow these steps:

1. Change the directory to WLS Home to start odi_server1:

In Unix:

```
<MW_HOME>/user_projects/domains/<ODI_DOMAIN_NAME>/bin
```

```
nohup ./startManagedWebLogic.sh odi_server1 >
StartManagedWeblogic.log &
```

In Windows:

```
StartManagedWeblogic.cmd odi_server1
```

2. In the Oracle Data Integrator Studio, navigate to **Topology > Agents > OracleDIAgent**.
3. Right-click **OracleDIAgent** and click **Test** to test the connectivity of the configured Oracle Data Integrator Java EE agent.

Executing Post-Upgrade Script

To execute the post-upgrade script, follow these steps:

1. Execute B1_MDFIX_ODM_270 in global context.
2. Login to ODI Client and navigate to **Designer > Load Plans and Scenario** folders.
3. Expand **Framework > Data Fix > B1_MDFIX_ODM_270**.
4. Right-click **B1_MDFIX_ODM_270**, click **Run**, and then select the context as **Global**.
5. Click **OK**.

Creating a Database Directory

Create a database directory 'B1_DATA_DUMP_DIR' on the target database, as well as on each source database. This directory is used for logging the export import task used during the initial ELT load.

The following sample SQL creates a database directory pointing to the file system path /scratch/file_data:

```
CREATE DIRECTORY B1_DATA_DUMP_DIR AS '/scratch/file_data';
```

Configuring Source Applications

This section describes the instructions to be followed to configure source applications.

- [Prerequisites](#)
- [Configuration Steps](#)

Bring down the source application server, and ensure the source applications are stopped but source databases are up and accessible.

Prerequisites

Before running the source configuration tool, ensure Oracle Data Integrator domain is created, and admin and managed servers are running and accessible.

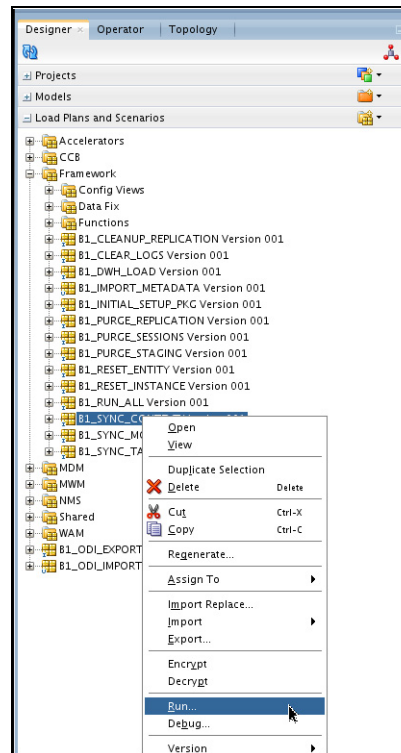
Configuration Steps

To configure the source applications, perform the following steps:

1. Register a source application.

For instructions to register a source, refer to the **Registering a Source** section in **Chapter 5: Configuring Oracle Utilities Analytics** in *Oracle Utilities Analytics Administration Guide*.

2. Ensure to use the same context_codes to configure the existing sources during the upgrade.
3. After running config.sh GUI utility, run B1_SYNC_CONTEXT as follows.
 - a. Login to Oracle Data Integrator Studio.
 - b. Navigate to **Designer > Load Plans and Scenarios > Framework..**
 - c. Right-click **B1_SYNC_CONTEXT** and select **Run**.



4. Select the context related to the source application, <no agent> as logical agent, and then click **OK**.
5. Run the B1_INITIAL_SETUP_PKG package.

Note: It is recommended to run B1_INITIAL_SETUP_PKG only once (after all the sources have been configured or after at least one source is configured).

- a. Login to Oracle Data Integrator Studio.
- b. Navigate to **Designer > Load Plans and Scenarios > Framework**.

- c. Right-click **B1_INITIAL_SETUP_PKG**, select **GLOBAL** context code, and then select **Run**.
6. Execute data fix B1_DATAFIX_270 in Global context.
 - a. Login to Oracle Data Integrator Studio.
 - b. Go to Designer, and navigate to **Load Plans and Scenarios > Framework > Data Fix**.
 - c. Run B1_DATAFIX_270 in Global context.
7. Start all Oracle GoldenGate processes on source and target:
 - a. Login into each source application GoldenGate server.
 - b. Go to the respective Oracle GoldenGate Home directory.
 - c. Start manager, JAgent, and all respective context extract processes.
 - d. Login to the target (Oracle Utilities Analytics) GoldenGate server.
 - e. Go to the Oracle GoldenGate Home directory.
 - f. Start manager, jagent and all respective context extract processes.
8. Start the source application server.
 - a. Login to each source application.
 - b. Start the application and ensure it is up and accessible.
9. Update the slice_start_dttm in B1_JOB_CONFIG table for the product based on the time noted in Step 3.

That time is when the final extract from the source application is generated and uploaded to the warehouse database.

Refer to the **Upgrading Oracle Utilities Analytics** chapter in *Oracle Utilities Analytics Administration Guide* for upgrade statement and for a specific source application.

Upgrading Oracle Utilities Analytics Administration Tool Component

The procedure to upgrade the Oracle Utilities Analytics Administration Tool component from v2.5.0.0.5 is same as that of the upgrade from v2.6.0.0.2.

For instructions, refer to [Upgrading Oracle Utilities Analytics Administration Tool Component](#) section in [Chapter 6: Upgrading Oracle Utilities Analytics from v2.5.0.0.5](#).

Upgrading Oracle Utilities Analytics Dashboards Component

The procedure to upgrade the Oracle Utilities Analytics Dashboards component from v2.5.0.0.5 is same as that of the upgrade from v2.6.0.0.2.

For instructions, refer to [Upgrading Oracle Utilities Analytics Dashboards Component](#) section in [Chapter 6: Upgrading Oracle Utilities Analytics from v2.5.0.0.5](#).

Chapter 8

Installing Demo Database

This chapter provides instructions to install the demo database.

Note: The demo installation does not support ETL functionality. The **ETL Job Control** dashboard accesses Oracle Data Integrator tables, and the demo dump does not have Oracle Data Integrator objects. Hence, the ETL dashboard is not supported in the demo installation.

- [Installing Oracle Utilities Analytics Demo Database Component](#)
- [Installing Oracle Utilities Analytics Dashboards Component](#)

Installing Oracle Utilities Analytics Demo Database Component

This section describes how to install the demo database component of Oracle Utilities Analytics, including:

- [Copying and Decompressing Install Media](#)
- [Creating Database and Importing the Dump File](#)
- [Configuring Security](#)
- [Configuring Spatial Data](#)

Copying and Decompressing Install Media

To copy and decompress install media, follow these steps:

1. Download Oracle Utilities Analytics v2.7.0 Oracle Demo Data part from the **Oracle Utilities Analytics v2.7.0 Demo Data.zip** file.

Download the zip from Oracle Software Delivery Cloud ([https:// edelivery.oracle.com](https://edelivery.oracle.com)).

2. Create a temporary directory. For example:

In Windows:
c:\OUA\temp

In Linux:
/OUA/temp

This directory (referred as <TEMPDIR>) should be located outside any current working Oracle Utilities application environment. After a successful installation, delete all files in this directory that are part of the installation.

- Unzip **Oracle Utilities Analytics V2.7.0 Demo Data.zip** to <TEMPDIR> using any zip utility.

The installation media is decompressed successfully. Proceed with creating the database.

Creating Database and Importing the Dump File

This section describes how to create the demo database with AL32UTF8 character set using the database creation tool (cdxdba.plx for UNIX or CDXDDBA.exe for Windows). It includes the following:

- [UNIX Database Creation Utility](#)
- [Windows Database Creation Utility](#)
- [Importing Demo Data Manually](#)
- [Post-Import Tasks](#)

Ensure that Oracle Database Server Enterprise Edition 12.1.0.2.0 is already installed on the machine to create the database.

The UNIX and Windows database creation utilities create an empty database with AL32UTF8 character set, and at least one tablespace for storing the application objects before running the installation. The default name of the application tablespace is CISTS_01.

If the following error messages occur while importing the demo data; it is recommended to ignore them.

```
ORA-31684: Object type USER:"MDADM" already exists
ORA-31684: Object type USER:"RELADM" already exists
ORA-31684: Object type USER:"DWADM" already exists
ORA-39083: Object type OBJECT_GRANT failed to create with error:
ORA-01917: user or role 'CCB1REP' does not exist
Failing sql is:
GRANT EXECUTE ON "MDADM"."B1_TEXT_ARRAY" TO "CCB1REP"
ORA-39083: Object type OBJECT_GRANT failed to create with error:
ORA-01917: user or role 'CCB1REP' does not exist
Failing sql is:
GRANT SELECT ON "MDADM"."B1_PROD_INSTANCE" TO "CCB1REP"
Job "SYSTEM"."SYS_IMPORT_SCHEMA_01" completed with 5 error(s)
ORA-39083: Object type INDEX failed to create with error:
ORA-31625: Schema DWSTAGE is needed to import this object, but
is unaccessible
ORA-01435: user does not exist
```

Ignore any errors related to spatial indexes.

UNIX Database Creation Utility

The files are located in BI270/DatabaseCreation/Unix to create the database.

To create the database using UNIX database creating utility, follow these steps:

- FTP the content of the **Database Creation** folder to a temporary directory on the UNIX server.
- To create the database, set the ORACLE_HOME and the ORACLE_BASE variables.

```
set PATH to include ORACLE_HOME/perl/bin
set LD_LIBRARY_PATH to ORACLE_HOME/lib
```

- Run the cdxdba.plx utility by executing the following command:

```
perl cdxdba.plx
```

4. Provide the following parameter values when the script prompts:

Instance name (DEMO): DEMO

ORACLE_BASE: The directory where the setup files for the database will be created (/orasw/app/oracle):

ORACLE_HOME: The folder where the current version of Oracle software is installed (/orasw/app/oracle/product/):

ORACLE_DATA: The directory where the data files for the database will be created (/db05/oradata):

Character set for the database (AL32UTF8):

5. Enter the values based on the settings of your database server. You can also accept the default values displayed if they match your database server settings. You will be prompted to confirm the settings and select Y or N to create the database.

```
ORACLE_SID: DEMO
ORACLE_HOME: /orasw/app/oracle/product/
ORACLE_BASE: /orasw/app/oracle
ORACLE_DATA: /db05/oradata
Character Set: AL32UTF8
Do you want to continue (Y/N)?
```

6. When the database has been created, you will be prompted with the following questions:

Do you want to import a demo database dump into this database (Y/N)?

Select Y to import the Demo Install data.

For the demo installation use the dump file exp_demo.dmp.

Do you want to import a demo database dump into this database (Y/N)? Y

Enter the name of the dump file (exp_demo.dmp):

Enter the name of the dump file directory (data_pump_dir):

Enter the name of the log file (exp_demo.log):

Note: The **dump_dir** must exist in the created database before continuing with the import. You should also copy the **exp_demo.dmp** file to the **dump_dir**. Uncompress the **exp_demo.dmp.gz** file first to extract the **exp_demo.dmp** file. This file is in **..\BI270\Demo** directory.

Update the **oratab** file for the new database, and then check the connectivity to this database from another server and from your desktop after updating local **tnsnames.ora** file.

Windows Database Creation Utility

The files are located in **..\BI270\DatabaseCreation\Windows**. You should be logged in as a user who is a member of local **ORA_DBA** group on that server. The **ORA_DBA** group should have “Administrator” privileges assigned to it.

1. To create a database, run the utility **CDXDBA.exe** located in the Windows folder from command prompt. The utility displays the following options:

E - Export a schema from the database

R - Refresh a schema with a database dump

C - Create/Recreate a local database

H - See help for the command line options

Q - Quit

2. Select the option C to create an empty database on your machine and provide the below inputs:
 - a. Provide the instance name (DEMO): <DB Name> For example, BIDE MO.
 - b. Enter the character set of the database (AL32UTF8): AL32UTF8.
 - c. Enter ORACLE_BASE: The directory where the setup files for the database will be created (c:\oracle) : <Oracle_Base>.

For example: C:\app\oracle
 - d. Enter ORACLE_HOME: The folder where the current version of Oracle software is installed (c:\oracle\product\11.1.0.6\Db_1):<Oracle_Home>.

For example: c:\app\oracle\db_home
 - e. Enter ORACLE_DATA: The directory where the data files for the database will be created (C:\app\oracle\oradata):<Directory where data files will be created>.
6. Once the database has been created, select the R - Refresh a schema option with a database dump file to load the demo install data.
 - a. Select option: R
 - b. Enter the instance name (DEMO): <DB name>
 - c. Is it a LOCAL database (exists on the same machine) (Y/N): < provide Y or N>
 - d. Enter the name of the Oracle account that owns that application schema (spladm): DWADM
 - e. Enter the password for DWADM (spladm): DWADM
 - f. Enter the character set of the database (AL32UTF8): AL32UTF8
 - g. Enter the name of data pump directory (DATA_PUMP_DIR): DATA_PUMP_DIR
 - h. Enter the name of the dump file (expDWADM.dmp):exp_demo.dmp
 - i. Enter the name of the log file (impDWADM.log):exp_demo.log
 - j. The option R causes the utility to drop all the objects from the schema and import the schema from a database dump file.

For demo installation, use the **exp_demo.dmp** dump file.

Note: The **dump_dir** must exist in the database created above before continuing with the import. You should also copy the **exp_demo.dmp** file to the **dump_dir**. Uncompress the **exp_demo.dmp.gz** file to extract the **exp_demo.dmp** file. This file is in the ..\BI270\Demo directory.

Check the connectivity to this database from another server and from your desktop after updating the local **tnsnames.ora** file.

Importing Demo Data Manually

The demo data can also be imported by following the steps below after successful database creation (using DBCA or cdxdba.plx).

If the database is created using DBCA, run the users.sql under BI270/DatabaseCreation/Unix directory after replacing tablespace name as required. Run this command from the database server.

Note: Ensure to change the tablespace_name to the tablespace name on which DWADM, RELADM, and MDADM have the quota. If DWADM, RELADM, and MDADM users have quota on cists_01 tablespace, then exclude whole remap_tablespace clause from the command.

1. Set the correct ORACLE_SID and ORACLE_HOME first, and then run below command to import demo dump.

```
impdp directory= dump_dir dumpfile= exp_demo.dmp logfile=
exp_demo.log schemas=DWADM,RELADM,MDADM
remap_tablespace=cists_01:<tablespace_name>
```

2. Provide the system as the user and system user's password when prompted.

Post-Import Tasks

Connect to MDADM schema, and execute the following commands:

```
create public synonym B1_TARGET_ENTITY for B1_TARGET_ENTITY;
create public synonym B1_PROD_INSTANCE for B1_PROD_INSTANCE;
create public synonym B1_JOB_CONFIG for B1_JOB_CONFIG;

grant select on B1_TARGET_ENTITY to public;
grant select on B1_PROD_INSTANCE to public;
grant select on B1_JOB_CONFIG to public;
```

Configuring Security

The security scripts have to be executed after the initial load and the Materialized views are created for the given source product instance.

To configure the security, perform the following steps:

1. In the Oracle Utilities Analytics database component installation package, navigate to the ..\BI270\DWADM folder.
2. Run OraGenSec

In **Windows** environment:

- a. Add Java 8 to path variable as shown in example below:

```
set PATH= C:\Java\jdk1.8.0_121\bin;%PATH%
```

- b. Set classpath pointing to OraDBI.jar and all dependency jars.

```
set CLASSPATH=<Path to BI270>\BI270\DWADM\Jarfiles\*
```

- c. Run OraGenSec as shown below:

```
java com.oracle.ouaf.oem.install.OraGenSec -l oragensec.log -d
DWADM,DWADM,jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE
PORT>/<ORACLE SERVICE NAME> -a A -r DW_READ,DW_USER -u
DWREAD,DWUSER
```

In **Unix** environment:

- a. Add Java 8 to path variable as shown in example below:

```
export PATH=/scratch/software/jdk1.8.0_121/bin:$PATH
```

- b. Set classpath pointing to OraDBI.jar and all dependency jars.

```
export CLASSPATH=<Path to BI270>/BI270/DWADM/Jarfiles/*
```

- c. Run OraGenSec as shown below:

```
java com.oracle.ouaf.oem.install.OraGenSec -l oragensec.log -d
DWADM,DWADM,jdbc:oracle:thin:@<DATABASE SERVER>:<DATABASE
PORT>/<ORACLE SERVICE NAME> -a A -r DW_READ,DW_USER -u
DWREAD,DWUSER
```

Configuring Spatial Data

This section describes how to load spatial metadata in the USER_SDO* tables for Oracle Utilities Analytics.

Use the following procedure to load spatial metadata in the target database:

1. Create the **dump_dir** directory in the database and copy the **user_sdo.dmp** file from ../BI270/Spatial-Metadata folder to that location.

2. Import the released spatial tables to the target database using the following command:

```
impdp directory=dump_dir dumpfile=user_sdo.dmp logfile=
impdp_user_sdo.log schemas=DWADM
remap_tablespace=cists_01:<tablespace_name>
```

Note: Run this command from database server. Ensure to change the tablespace_name to tablespace name on which DWADM has the quota. If DWADM user have quota on cists_01 tablespace, then exclude whole remap_tablespace clause from command.

3. Review the **impdp_user_sdo.log** file to ensure the tables are imported successfully.
4. After importing the tables, run the following SQL scripts from the ../BI270/Spatial-Metadata folder:

```
- sqlplus dwadm/<dwadm user password>@database-name @copy_spatial_metadata.sql
- sqlplus dwadm/<dwadm user password>@database-name @clean_sdo_release_tbls.sql
```

5. Review the log files.

Installing Oracle Utilities Analytics Dashboards Component

Note: Ensure that the same Operating System (OS) user to install the prerequisite software is used to install the Oracle Utilities Analytics Dashboards component as well.

The Oracle Utilities Analytics Dashboards component is installed on the Oracle Utilities Analytics application server. This section describes how to install the dashboards component of Oracle Utilities Analytics.

- [Creating and Configuring an OBIEE Domain](#)
- [Copying and Decompressing Install Media](#)
- [Starting the Installer](#)
- [Installation Steps](#)
- [Deploying Web Catalog](#)
- [Deploying the Repository \(RPD\) File](#)
- [Configuring and Deploying the MapViewer](#)
- [Updating MapViewer Configuration](#)
- [Enabling WriteBack](#)
- [Enabling Auto Complete Feature in OBIEE](#)

Creating and Configuring an OBIEE Domain

To create and configure an OBIEE domain, follow the steps below. This is a prerequisite to install the Oracle Utilities Analytics Dashboards component.

1. Run RCU to create the necessary schemas.
 - a. Navigate to <FMW infrastructure home>/oracle_common/bin. Example location:
`cd /u01/12.2.1.9_Infrastructure/oracle_common/bin`
 - b. Run below command and follow the instructions in the wizard:
`./rcu`

Note: Select AS Common Schemas and Oracle Business Intelligence components in the **Select Components** panel.
2. Run the OBIEE configuration assistant to create an OBIEE domain.
 - a. Navigate to <FMW infrastructure home>/bi/bin
 Example location:
`cd /u01/12.2.1_Infrastructure/bi/bin`
 - b. Run below command and follow the instructions in the wizard:
 In Unix:
`./config.sh`

 In Windows:
`./config.cmd`
 - c. On the **Database Details** panel, choose “Use existing schemas” and provide connection details (prefix of the RCU run in step 1).
 - d. On the **Initial Application** panel, select “Oracle sample application (SampleAppLite).
Note: Ensure the BI domain path, WebLogic user name and password are noted down. They should be provided as inputs when the Oracle Utilities Analytics Dashboards component installer is run.
3. After the successful creation of OBIEE domain, start the OBIEE Admin server.
4. Login into the Admin console.
 - a. On the **Environment** tab, navigate to the coherence clusters.
 - b. Click **defaultCoherenceCluster** and then select the **Configuration** tab.

 Ensure the port mentioned in the **Cluster Listen Port** field is not in use. If needed, change it to another port that is not in use.
 - c. Click **Save** to save the port changes (if any).
 - d. Start the OBIEE Managed server.
5. After starting the OBIEE domain services successfully, navigate to the <OBIEE domain>/config/fmwconfig directory.
 - a. Open jps-config.xml.
 - b. Under the <serviceInstance name=”idstore.ldap” provider=”idstore.ldap.provider”> element, add the property element as below:

```
<property
name="oracle.security.jps.ldap.policystore.refresh.interval"
value="6000000"/>
```

The OBIEE domain is successfully created and configured.

Copying and Decompressing Install Media

To download and decompress the install media, follow these steps:

1. Download the Oracle Utilities Analytics Dashboards component v2.7.0 (**Oracle Utilities Analytics V2.7.0 Multiplatform.zip**) from the Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).
2. Create a temporary directory, such as c:\OUA\temp or /OUA/temp (referred to <TEMPDIR> below).

This directory must be located outside any current working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.

3. Unzip **Oracle Utilities Analytics V2.7.0 Multiplatform.zip** to <TEMPDIR>.

Starting the Installer

For an AIX Operating System, set the following environment variable before starting the Oracle Utilities Analytics installation:

```
export IBM_JAVA_OPTIONS="-Xmx2g -XX:PermSize=64m -
XX:MaxPermSize=3200m
```

To start the installer, do the following:

1. Navigate to the temporary folder where you downloaded the install. Run the following command from the folder:

```
java -jar <TEMPDIR>/OUA_2.7.0.0.0_generic.jar -logLevel finest
```

Note: The minimum JDK required for running the Oracle Utilities Analytics installer is JDK 1.8.

2. On the **Welcome** page, review the information before you begin the installation.
3. Click **Next** to continue with the installation.
4. Complete the installation by following the tasks on the navigation pane.

Each item in the navigation pane represents a specific installer screen that prompts you for the information required to install the software.

Installation Steps

To install the Dashboards component, follow these steps:

1. Run the Oracle Utilities Analytics Installer.
2. On the **Welcome** page, review the available information before you begin the installation.
3. Click **Next** to continue with the installation. The **Installation Location** page appears.
4. Define the **Installation Location** here and click **Next**. The **Select Installation Type** page appears.

Note: The specified Oracle home directory must be an empty directory or a directory where the OUA ODI ETL 2.7.0.0.0 component was installed successfully.

- In the **Select Installation Type** page, select **Dashboards** and click **Next**.

Note: Based on the selected installation type, the options on the left navigation panel change. When you select **Dashboard** as an **Installation Type**, you need to define **Database and Java Home Details**, **Target Database Connection Details** and **OBIEE Home Details**.

The **Database and Java Home Details** page appears.

- Enter the following details in the respective fields and click **Next**.

| Field Name | Description | Value |
|----------------------|-------------------------------|---|
| Database Client Home | Database client home location | Example:

/u01/app/product/12.1.0/dbhome_1 |
| Java Home | JDK home location | JDK 1.8 location
Example:

/u01/jdk_1.8.0_77 |

The **Target Database Connection Details** page appears.

- Enter the following details in the respective fields and click **Next**.

| Field Name | Description | Value |
|----------------------------------|--|--|
| Host | The host name of the server where the database resides. | Oracle Utilities Analytics Database Server |
| Port | The database port number on the database server used for connecting to the database. | Oracle Utilities Analytics Database Port. The default value is 1521. |
| Service Name | The service name for the database | |
| Target Schema Password | The password for the target schema (DWADM). | |
| Confirm Target Schema Password | Confirm the password for the target schema (DWADM) here. | |
| Metadata Schema Password | The password for the metadata schema (MDADM). | |
| Confirm Metadata Schema Password | Confirm the password for the metadata (MDADM) schema here. | |

The **OBIEE Home Details** page appears.

8. Enter the following details in the respective fields and click **Next**.

| Field Name | Description | Value |
|----------------------|---|--|
| BI Home | The location on the disk where OBIEE is installed. | Example:

/u01/ Middleware/Oracle_BI1 |
| BI Domain Home | The domain Home location under the directory where OBIEE is installed. | Example:

/u01/ Middleware/
user_projects/domains/
bifoundation_domain |
| Weblogic Host | The hostname on which WebLogic server for OBIEE is running. | |
| Weblogic Port Number | A unique port number within the system that is assigned to the HTTP port.

This port number is used as a part of the client URL request to connect to the host. It is the OBIEE WebLogic console admin port number. | Example: 7001 |
| Weblogic User | WebLogic domain login user name. | |

Note: You will be prompted for the Weblogic user's password after installation.

The **Installation Summary** page appears.

9. Verify the installation options and click **Install** to begin the installation.
- For any changes to the configuration before starting the installation, use the navigation pane and select the topic to edit.
10. The **Installation Progress** page appears allowing you to see the progress of the installation. Operations being performed as part of the installation are logged to the terminal from which the installer was run. Detailed logs of the installation are also available in the logs/system directory under the installation location.
- To quit before the installation is complete, click **Cancel**. Doing so will result in a partial installation; the portion of the software that was installed on your system before you click **Cancel** will remain on your system, and it needs to be deleted manually.
11. On the **Installation Completed** page, click **Finish** to close the installer.
- The Dashboards component is now installed successfully.

Deploying Web Catalog

Take the backup of existing BI Publisher reports from the catalog location. After the deployBAR step is completed successfully, copy the BI Publisher reports (for which backup was taken) to the location of the catalog.

To deploy the web catalog, follow these steps:

- Go to the <DOMAIN_HOME>/bidata/service_instances/ssi/metadata/content/catalog/root/shared directory.

2. Delete the existing catalogs (if any) that were delivered out-of-the-box with Oracle Utilities Analytics in the previous release.

Ensure any custom catalog related files in this directory are backed up in a separate location before running `deployBar.sh/cmd`.

If Oracle Utilities Network Management System BI Publisher reports were deployed they should be retained.

3. Follow the steps as below for UNIX and Windows respectively:

- **In Unix:**

- a. Navigate to `<Install_Dir>/bin` directory.

```
cd <Install_Dir>/bin
```

- b. Add Java 8 to the path variable as shown in example below:

```
export PATH=/scratch/software/jdk1.8.0_77/bin:$PATH
```

- c. Run `ksh ./deployBAR.sh`.

- **In Windows:**

- a. Navigate to `<Install_Dir>/bin` directory.

```
cd <Install_Dir>\bin
```

- b. Add Java 8 to the path variable as shown in example below:

```
set PATH= C:\Java\jdk1.8.0_77\bin;%PATH%
```

- c. Run `deployBAR.cmd`.

The Web catalog is successfully deployed.

For an AIX operating system, after the `deployBAR.sh/deployBAR.cmd` is completed successfully, execute the following command:

```
cp -r ../writeback/wbtemplates/* $DOMAIN_HOME/bidata/  
service_instances/ssi/metadata/content/msgdb/l_en/customMessages
```

Deploying the Repository (RPD) File

If no changes are made to the deployed RPD, then take the RPD file from the following location, where `<install_dir>` is the Oracle Utilities Analytics Dashboard Component installation directory:

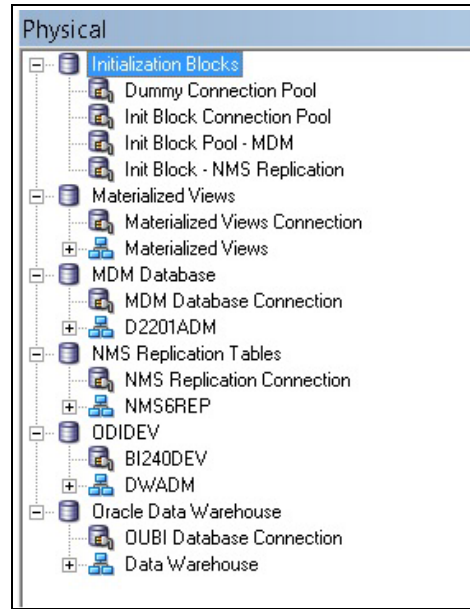
```
<install_dir>/Reports/rpd/ UtilitiesBusinessAnalytics.rpd
```

If it was merged, then take the merged RPD and make the required database changes. Copy this RPD file to the Windows machine on which OBIEE 12.2.1 is installed.

To deploy the RPD file, follow these steps:

1. Ensure OBIEE 12.2.1 is installed on the Windows machine before proceeding.
2. Click **Start > Programs > Oracle Business Intelligence > Administration**.
3. Click **File > Open > Offline...** to open the RPD in offline mode.
4. Provide the RPD password. The default password is “oracle123”.

5. Double-click the **Connection Pools** to edit them.



- In the **Init Block Connection Pool** group, enter the following:
 Datasource name = BI Database name
 User name = DWREAD
 Password = DWREAD User password
- In the **Init Block Pool - MDM** group, provide the following (only for Oracle Utilities Meter Data Management):
 Datasource name = MDM database name
 User name = CISUSER
 Password = CISUSER User password
- In the **Init Block Pool - NMS Replication** group, provide the following (only for Oracle Utilities Network Management System):
 Datasource name = BI database name
 User name = DWREAD
 Password = DWREAD User password
Note: The schema name is NMS1REP by default. Rename it if the replication schema name is different.
- In the **Materialized Views Connection** group, enter the following:
 Datasource name = BI Database name
 User name =DWREAD
 Password = DWREAD User password
- In the **MDM Database Connection** group, provide the following (only for Oracle Utilities Meter Data Management):
 Datasource name = MDM database name
 User name = CISUSER
 Password = CISUSER User password

- In the **NMS Replication Tables** group, provide the following (only for Oracle Utilities Network Management System):

Datasource name = BI database name

User name = DWREAD

Password = DWREAD User password

Note: The default schema name is NMS1REP. If the replication schema name is different, then rename.

- In the **ODIDEV Connection Pool** group, provide the following:

Datasource name = BI database name

User name = DWUSER

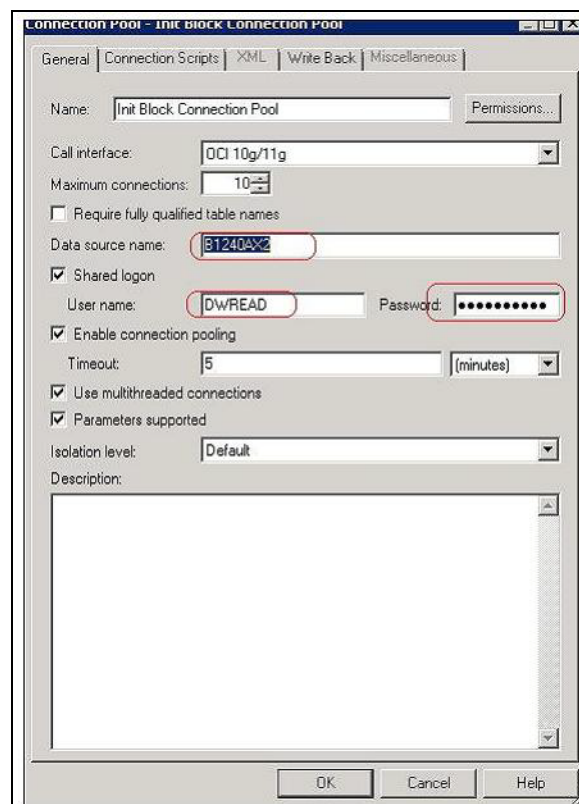
Password = DWUSER User password

- In the **OUBI Database Connection** group, provide the following:

Datasource name = BI database name

User name = DWREAD

Password = DWREAD User password



6. Click **Save**.

Note: Click **Yes** when you see the prompt '*Do you wish to check global consistency?*' and ignore any warnings that appear after consistency check is complete.

7. Copy the modified RPD back to the <install dir>/Reports/rpd/UtilitiesBusinessAnalytics.rpd where <install_dir> is the Oracle Utilities Analytics Dashboard Component installation directory.

8. Login to the server where OBIEE Enterprise Manager is installed.
9. Navigate to **<OBIEE DOMAIN>/bitools/bin**.
10. Run the following command to deploy the RPD:

In Windows:

```
data-model-cmd.cmd uploadrpd -I <OUA
home>\Reports\rpd\UtilitiesBusinessAnalytics.rpd -W <rpd
password, default password is oracle123> -U <Weblogic user name
of OBIEE domain> -P <Weblogic password of OBIEE domain> -SI ssi
```

In Unix:

```
data-model-cmd.sh uploadrpd -I <OUA home>/Reports/rpd/
UtilitiesBusinessAnalytics.rpd -W <rpd password, default
password is oracle123> -U <Weblogic user name of OBIEE domain> -
P <Weblogic password of OBIEE domain> -SI ssi
```

11. Run the following commands from **<OBIEE DOMAIN>/bitools/bin** directory to stop and start the OBIEE domain services respectively.

```
stop.sh/cmd
```

```
start.sh/cmd
```

Configuring and Deploying the MapViewer

Configuring and deploying the MapViewer involves the following tasks:

- [Configuring the MapViewer](#)
- [Modifying instanceconfig.xml](#)

Configuring the MapViewer

To configure the Mapviewer, follow these steps:

1. Login to the WebLogic console.
2. Create the 'MAP_DS' datasource.
3. Lock and edit it.
4. Navigate to **Services > Data Sources**.
5. Select **New > Generic Data Source** and provide the following:
 - Name = MAP_DS
 - JNDI Name = MAP_DS
 - Database Type = oracle
6. Click **Next**.
7. Enter the following:
 - Database Driver = *Oracle's Driver (Thin) for Service connections; Versions:Any
8. Click **Next**.
9. On the next page, do not change any values. Click **Next**.
10. Enter the following connection properties:
 - Database Name: BI Database Name
 - Host Name: Database host

- Port: Database port
 - Database User Name: dwadm
 - Password: dwadm password
11. Click **Next**.
 12. On the next page, click **Test Configuration**. After the successful test, click **Next** again.
 13. On the **Select Target** page, select AdminServer under **Servers** and bi_cluster under **Clusters**. Click **Finish**.
 14. Click **Activate Changes**.
 15. Update the mapViewConfig file with the tags mentioned below:
File location: <Install Dir>
/user_projects/domains/<obiee_domain>/config/fmwconfig/mapviewer/conf
File: mapViewConfig.xml
 16. If there is a proxy used, insert the list of host names for all the third-party service providers in the security_config node.

```
<proxy_enabled_hosts>
elocation.oracle.com
</proxy_enabled_hosts>
```
 17. Add the following ns_data_provider node:

```
<ns_data_provider id="obieeNsdp"
class="com.oracle.utilities.birdseye.BirdseyeNSDP" />
```
 18. Add the current map_tile_server with the following map_tile_server node:

```
<map_tile_server>
<tile_storage default_root_path="/mytilecache/" />
</map_tile_server>
```

Modifying instanceconfig.xml

Ensure you take a backup before updating the instanceconfig.xml file. Run the following commands in UNIX and Windows respectively to go to the directory containing the instanceconfig.xml file.

In Unix:

```
<OBIEE_INSTALL_DIR>/user_projects/domains/<obiee_domain>/config/
fmwconfig/biconfig/OBIPS
```

In Windows:

```
<OBIEE_INSTALL_DIR>user_projects\domains\<obiee_domain>\config\fmw
config\biconfig\OBIPS
```

Perform the following changes to the instanceconfig.xml file:

1. Update the security node with the following values. If the security node is not present, add the following code before </Serverinstance>:

```
<Security>
<ClientSessionExpireMinutes>210</ClientSessionExpireMinutes>
<HttpOnlyCookies>>false</HttpOnlyCookies>
<CookieDomain />
<CookiePath>/</CookiePath>
</Security>
```

2. Update the following <ServerInstance> element:


```
<LightWriteback>true</LightWriteback>
```
3. Add the following code between the <ServerInstance> </ServerInstance> tags.


```
<Prompts>
<MaxDropDownValues>256</MaxDropDownValues>
<AutoApplyDashboardPromptValues>true</AutoApplyDashboardPromptValues>
<AutoSearchPromptDialogBox>true</AutoSearchPromptDialogBox>
<AutoCompletePromptDropDowns>
<SupportAutoComplete>true</SupportAutoComplete>
<CaseInsensitive>true</CaseInsensitive>
<MatchingLevel>MatchAll</MatchingLevel>
<ResultsLimit>50</ResultsLimit>
</AutoCompletePromptDropDowns>
</Prompts>
<SpatialMaps>
<MapViewerAPIV2Enabled>>false</MapViewerAPIV2Enabled>
</SpatialMaps>
```

Updating MapViewer Configuration

To update the MapViewer configuration, follow these steps:

1. Login to MapViewer.

<http://<Server>:<port>/mapviewer>
2. To update the MapViewer configuration, navigate to MapViewer > Administration > Configuration. Login to the Mapviewer at this location:

<http://<HOST>:<MANAGERPORT>/mapviewer>

3. Add the below code in the mapViewerConfig.xml with the appropriate values:

```
<map_data_source name="mapconn"
jdbc_host="<DB server name>"
jdbc_sid="//<DB Service name>"
jdbc_port="1521"
jdbc_user="DWADM"
jdbc_password="!<DWADM user password>"
jdbc_mode="thin"
number_of_mappers="32"
allow_jdbc_theme_based_foi="true"
/>
```

4. Click **Save**, and then restart.

Enabling WriteBack

To enable the Write Back, perform the following steps:

1. Login to Analytics and navigate to **Administration > Manage Privileges > WriteBack > Write Back to Database**.
2. Click **Denied:Authenticated User** and select the **Granted** permission.

Enabling Auto Complete Feature in OBIEE

To enable the auto complete feature in OBIEE:

1. Restart the OBIEE Admin server, Managed server, and opmn services.

Note: Refer to OBIEE documentation for detailed instructions on how to start and stop admin server, managed server, and opmn services.

2. Login to Oracle Utilities Analytics.

<http://<Server>:<port>/analytics>

3. Click **WebLogic User** (top-most-right section of the page).
4. From the drop-down menu, select **My Account**.
5. On the **Preferences** tab, set **Prompt Auto Complete** to **ON**.
4. Click **OK**.

Chapter 9

Configuring Spatial Data

This chapter contains information on how to setup spatial data for the Oracle Business Intelligence Enterprise Edition dashboards in Oracle Utilities Analytics and how to set up the spatial data. The mapping between the spatial columns and the dimensional columns, such as City, State from the Address dimension is defined in the spatial metadata catalog, which is available as a part of the Web Catalog component in Oracle Utilities Analytics. Using the spatial data and the map metadata, users can view the star schema data in on the map reports delivered out-of-the-box as part of Oracle Utilities Analytics.

This chapter has the following sections:

- [Acquiring the Spatial Data](#)
- [Installing Spatial Data](#)
- [Importing Spatial Data into Oracle Utilities Analytics Spatial Data Tables](#)
- [Loading the Oracle Utilities Specific Themes](#)

Acquiring the Spatial Data

Oracle Utilities Analytics does not include any spatial data. The spatial data can be loaded from the various third party vendors. Some of the spatial data vendors who partner with Oracle can be found in the below Oracle Technology Network page:

<http://www.oracle.com/technetwork/database/options/spatialandgraph/community/partners/spatial-partners-095101.html>

Some of these vendors might require you to purchase a separate license for the spatial data. You need to get in touch with the vendor directly for the same. After this, you would be able to download a spatial data dump from the spatial data vendor.

Installing Spatial Data

The spatial data acquired from a third party vendor can be in various formats. Typical vendors provide shape files (.shp) or a database dump for download. The exact spatial data model varies from vary to vendor and there is no generic format to this. Hence, the documentation that comes along with the spatial data is of utmost importance. This is required to identify what type of spatial data is available in which table.

The first task is to import the data in the shape file into the DWADM schema. A database dump can be imported by the standard oracle impdp command. A shape file can also contain the spatial data tables along with the data that can be imported by Oracle MapBuilder.

Follow the steps mentioned below for this:

1. Unzip or decompress the .zip file (Typically, the shape file is zipped for data compression) to a temp directory.

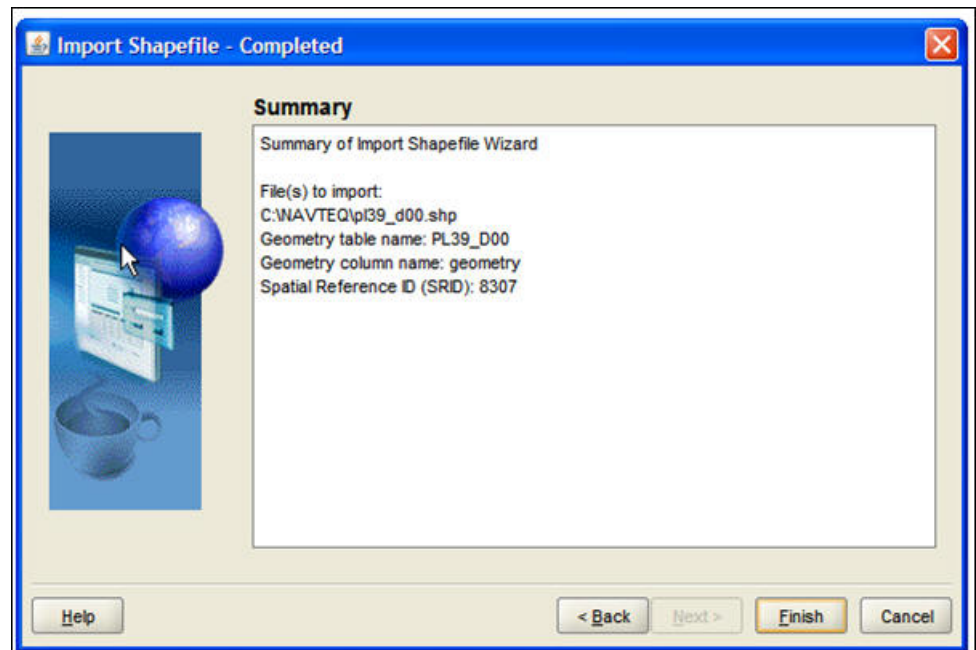
For example: C:\Spatial

2. Download the standalone MapBuilder application from this site:
<http://www.oracle.com/technetwork/middleware/mapviewer/downloads/index-100641.html>

3. Start the **MapBuilder**. On windows, run this to start: **java -jar mapbuilder.jar**

Note: Refer to the MapViewer documentation for detailed instructions on installing and running MapBuilder from this site: <http://www.oracle.com/technetwork/middleware/mapviewer/documentation/index.html>

4. Create a connection to the DWADM schema in the Oracle Utilities Analytics Data Warehouse database by navigating to **File > New Connection**.
5. Navigate to **Tools > Import Shapefile**, and click **Next**.
6. Click the **Shapefile**.
7. Browse to the **C:\Spatial** directory, select the **.shp** file, and click **Open**.
8. Click **Next**.
9. Ensure the **Create Predefined Theme** box is unchecked, and click **Next**.
10. Review the summary information and click **Finish**. A sample screenshot is shown below.



Importing Spatial Data into Oracle Utilities Analytics Spatial Data Tables

Once the spatial data tables from an third party vendor have been imported into the DWADM schema, the next step is to import the spatial data needed by Oracle Utilities Analytics into certain specific tables. This step to import a certain subset of the data into a standardized set of Oracle Utilities Analytics tables is for decoupling. This decoupling helps the Oracle Business Intelligence Enterprise Edition map reports and other Oracle Business Intelligence Enterprise Edition map

configuration to remain oblivious to the variations in the spatial data schema coming from various vendors. This way you need not touch any of the spatial metadata catalog or modify any of the map reports being delivered out-of-the-box.

Oracle Utilities Analytics needs the administrative boundary type of spatial data at four levels - State, City, County and Postal Code. All map reports in Oracle Utilities Analytics are using one of these levels. Since the spatial data model varies from vendor to vendor, further details provided in this section is based on a sample spatial data from a specific vendor.

The following sections describe how the import the data based on a sample spatial data dump provided by HERE maps (formerly NAVTEQ). This sample data set contains administrative boundary data for the OHIO city in the US country. The sample data set from the Oracle partner can be downloaded from the Oracle Utilities Analytic's OTN (Oracle Technology Network) page:

<http://www.oracle.com/technetwork/database/options/spatialandgraph/downloads/spatial-partners-data-087203.html>

However, the steps can be used with a little variation to setup the spatial data for Oracle Utilities Analytics for any city from any country. The extent of the changes need to be done varies based on the vendor used to purchase the spatial data. Read through the documentation of the spatial data model provided by the vendor to understand what type of data lies in what table.

Below table provides a simple mapping based on the HERE maps sample data.

Spatial Data Level	Table in Navteq Sample Data	Additional Filters	Oracle Utilities Analytics Spatial Data Table
State	WOM_AREA	Feature Type = 90996 ISO Country Code = 'USA'	Q1_STATES54004
City	PL39_d00	Q1_CITY54004	lsad_trans = 'city', 'village'
County	CO39_D00		Q1_COUNTY54004
Postal Code	ZT39_D00		Q1_USZIP54004

Apart from these four levels, there are also some standard themes and styles that need to be imported.

Below sub-sections contain the SQL statements to create and populate the various spatial data tables for Oracle Utilities Analytics. The prerequisite is that spatial data has been purchased by you and the spatial data dump has been imported into the DWADM schema. It is assumed that the eLocation website is being used as the base map in the Oracle Business Intelligence Enterprise Edition mapviewer setup, for which the SRID (Spatial Reference System Identifier) is 54004. The SRID is a unique value used to identify the coordinate system used in a Geographic Information System (GIS) application. If some other base map is used, then the transform parameter in the insert statements should specify the SRID of the base map being used.

Importing Theme Related Spatial Data into Oracle Utilities Analytics

The sdo_ tables are standard tables expected to be present in the spatial data from any vendor.

```
INSERT INTO user_sdo_maps SELECT * FROM sdo_maps;
INSERT INTO user_sdo_themes SELECT * FROM sdo_themes;
INSERT INTO user_sdo_styles SELECT * FROM sdo_styles;
INSERT INTO user_sdo_cached_maps SELECT * FROM sdo_cached_maps;
```

Importing State Spatial Data into Oracle Utilities Analytics

In Oracle Utilities Analytics, the table Q1_STATES54004 is used to store the state related administrative boundary. Create the table based on the DDL below and insert the values from one of the spatial data tables obtained from the vendor.

```
CREATE TABLE Q1_STATES54004
(
    feature_id      NUMBER,
    feature_name    VARCHAR2(255),
    area_id         NUMBER,
    name_langcode   VARCHAR2(35),
    feature_type    VARCHAR2(30),
    country_code_3  VARCHAR2(5),
    geometry        SDO_GEOMETRY,
    carto_id        NUMBER(10,0)
);

INSERT INTO Q1_STATES54004_SDX
SELECT NULL, name, NULL, lang_code, feature_type,
ISO_COUNTRY_CODE, sdo_cs.transform(geometry, 54004), carto_id
FROM WOM_AREA WHERE feature_type = 909996 AND iso_country_code =
'ISO';
```

Note: Customize the table name WOM_AREA, the feature type value and the ISO country code as per the spatial data model obtained by you. The below insert statement is to define the Q1_ table as a spatial table and update the spatial metadata view to reflect the dimensional information for the areas. The parameters for the insert statement are table name, geometry column name, and X and Y boundaries (the latitude and the longitude) based on the data and the tolerance value.

```
INSERT INTO user_sdo_geom_metadata VALUES
('Q1_STATES54004', 'GEOMETRY',
MDSYS.SDO_DIM_ARRAY(MDSYS.SDO_DIM_ELEMENT('X', -
20500000, 20500000, 0.0005), MDSYS.SDO_DIM_ELEMENT('X', -
50000000, 19000000, 0.0005)), 54004 );

CREATE INDEX Q1_STATES54004_SDX ON Q1_STATES54004 (geometry)
indextype IS MDSYS.SPATIAL_INDEX;
```

Importing City Spatial Data into Oracle Utilities Analytics

In Oracle Utilities Analytics, the table Q1_CITY54004 is used to store the city related administrative boundary. Create the table based on the DDL below and insert the values from one of the spatial data tables obtained from the vendor.

```
CREATE TABLE Q1_CITY54004 AS
SELECT upper(name) FEATURE_NAME, sdo_cs.transform(geometry, 54004)
geometry, 'OHIO' state FROM pl39_d00 WHERE lsad_trans IN ('city',
'village');
```

Note: Customize the table name pl39_d00 and additional filters as per the spatial data model obtained by you. Map the state name dynamically for the current city record in the spatial data. The below insert statement is to define the Q1_ table as a spatial table and update the spatial metadata view to reflect the dimensional information for the areas. The parameters for the insert statement are table name, geometry column name, and X and Y boundaries (the latitude and the longitude) based on the data and the tolerance value.

```

INSERT INTO user_sdo_geom_metadata VALUES
('Q1_CITY54004', 'GEOMETRY',
MDSYS.SDO_DIM_ARRAY(MDSYS.SDO_DIM_ELEMENT('X', -
20500000, 20500000, 0.0005), MDSYS.SDO_DIM_ELEMENT('Y', -
50000000, 19000000, 0.0005)), 54004 );

CREATE INDEX Q1_CITY54004_sdx ON Q1_CITY54004 (geometry) indextype
IS MDSYS.SPATIAL_INDEX;

UPDATE Q1_CITY54004 SET geometry =
SDO_UTIL.RECTIFY_GEOMETRY(geometry, .05);
    
```

Importing County Spatial Data into Oracle Utilities Analytics

In Oracle Utilities Analytics, the table Q1_COUNTY54004 is used to store the county related administrative boundary. Create the table based on the DDL below and insert the values from one of the spatial data tables obtained from the vendor.

```

CREATE TABLE Q1_COUNTY54004 AS
SELECT name FEATURE_NAME, sdo_cs.transform(geometry, 54004)
geometry, 'OHIO' state FROM CO39_D00;
    
```

Note: Customize the table name CO39_D00 as per the available spatial data model. The below insert statement is to define the Q1_ table as a spatial table and update the spatial metadata view to reflect the dimensional information for the areas. The parameters for the insert statement are table name, geometry column name, and X and Y boundaries (the latitude and the longitude) based on the data and the tolerance value.

```

INSERT INTO user_sdo_geom_metadata VALUES
('Q1_COUNTY54004', 'GEOMETRY',
MDSYS.SDO_DIM_ARRAY(MDSYS.SDO_DIM_ELEMENT('X', -
20500000, 20500000, 0.0005), MDSYS.SDO_DIM_ELEMENT('Y', -
50000000, 19000000, 0.0005)), 54004 );

CREATE INDEX Q1_COUNTY54004_sdx ON q1_county54004 (geometry)
indextype IS MDSYS.SPATIAL_INDEX;

UPDATE Q1_COUNTY54004 SET geometry =
SDO_UTIL.RECTIFY_GEOMETRY(geometry, .05);
    
```

Importing Postal Code Spatial Data into Oracle Utilities Analytics

In Oracle Utilities Analytics, the table Q1_USZIP54004 is used to store the county related administrative boundary. Create the table based on the DDL below and insert the values from one of the spatial data tables obtained from the vendor.

```

CREATE TABLE Q1_USZIP54004 AS
SELECT zcta ZCTA5CE, sdo_cs.transform(geometry, 54004) geom. FROM
ZT39_D00;
    
```

Note: Customize the table name ZT39_D00 as per the available spatial data model. The below insert statement is to define the Q1_ table as a spatial table and update the spatial metadata view to reflect the dimensional information for the areas. The parameters for the insert statement are table name, geometry column name, and X and Y boundaries (the latitude and the longitude) based on the data and the tolerance value.

```

INSERT INTO user_sdo_geom_metadata VALUES
('Q1_USZIP54004', 'GEOM',
MDSYS.SDO_DIM_ARRAY(MDSYS.SDO_DIM_ELEMENT('X', -
20500000, 20500000, 0.0005), MDSYS.SDO_DIM_ELEMENT('Y', -
50000000, 19000000, 0.0005)), 54004 );

CREATE INDEX Q1_USZIP54004_SDX ON Q1_USZIP54004 (geom) indextype
IS MDSYS.SPATIAL_INDEX;

UPDATE Q1_USZIP54004 SET geom = SDO_UTIL.RECTIFY_GEOMETRY(geom,
.05);
    
```

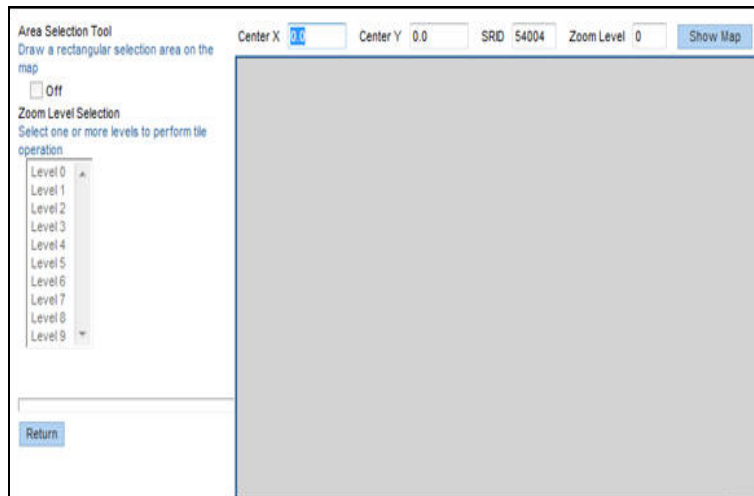
Improving Performance by Prefetching the Map Tiles

Rendering map tiles dynamically can affect system performance. To avoid this, you may consider prefetching tiles by issuing an admin request to MapViewer on a non-production server or when the server is not under load. When MapViewer receives a prefetching request, it issues many concurrent map tile requests to itself, which are basically XML map requests, and stores them in the cache. This improves the system's performance as the images are readily available.

Follow the following procedure to prefetch map tiles. These instructions are for MapViewer 11.1.1.9.1 version. If you are using a different version, refer to the MapViewer documentation for instructions.

1. In the **MapViewer** console, click **Admin** in the top-right corner of the page and log into the Admin Console page.
2. In the **Admin Console** page, click **Management > Manage Map Tile Layers**.
3. Select the required online map tile and click **View map/Manage Tiles**.

The **Prefetching** wizard opens:



4. Enter the X, Y coordinates of the center of the map, the SRID and zoom level, and click **Show Map**.

To prefetch map images, enter the latitude and longitude values. You need to know the latitude and longitude values of the center of the location in interest. The SRID is a unique value used to identify the coordinate system used in a GIS application.

The X and Y axis used in the following example is for Ohio:

Center X	<input type="text" value="-9211578.9"/>	Center Y	<input type="text" value="4887077.75"/>	SRID	<input type="text" value="54004"/>	Zoom Level	<input type="text" value="5"/>	<input type="button" value="Show Map"/>
----------	---	----------	---	------	------------------------------------	------------	--------------------------------	---

- When you see the map, turn on the **Area Selection** tool and select the area on the map for which you want to prefetch the tiles.
- Select one or more zoom-levels for which you want to prefetch the tiles.

Loading the Oracle Utilities Specific Themes

This section describes how to load spatial metadata in the USER_SDO* tables for Oracle Utilities Analytics.

Use the following procedure to load spatial metadata in the target database:

- Create the **dump_dir** directory in the database and copy the **user_sdo.dmp** file from ../BI270/Spatial-Metadata folder to that location.
- Import the released spatial tables to the target database using the following command:

```
impdp directory=dump_dir dumpfile=user_sdo.dmp logfile=
impdp_user_sdo.log schemas=DWADM
remap_tablespace=cists_01:<tablespace_name>
```

Note: Run this command from database server.

Note: Make sure to change the tablespace_name to tablespace name on which DWADM has the quota. If DWADM user have quota on cists_01 tablespace, then exclude whole remap_tablespace clause from command.

- Review the **impdp_user_sdo.log** file to ensure the tables are imported successfully.
- After importing the tables, run the following SQL scripts from the ../BI270/Spatial-Metadata folder:
 - sqlplus dwadm/<dwadm user password>@database-name @copy_spatial_metadata.sql
 - sqlplus dwadm/<dwadm user password>@database-name @clean_sdo_release_tbls.sql
- Review the log files.

Additional Setup for Oracle Utilities Outage Analytics

The Outage Analytics product within Oracle Utilities Analytics needs some additional spatial data setup. The reason is that Outage Analytics alone uses point information from spatial data for plotting outage event related information on maps. This section should be skipped if NMS is not one of the source systems for Oracle Utilities Analytics.

The very first step is to replicate the DIAGRAM_OBJECTS table into the Oracle Utilities Analytics database. However, a suitable mechanism needs to be built to refresh this table with the latest data from Oracle Utilities Network Management System whenever there are changes in the source system.

Once this is done, then after replicating the DIAGRAM_OBJECTS table, the following steps set the Oracle Utilities Analytics dashboards up to use the data in this replicated table.

- Create the required spatial metadata:

```
INSERT INTO user_sdo_geom_metadata
VALUES ('DIAGRAM_OBJECTS','LL_GEOMETRY',
MDSYS.SDO_DIM_ARRAY (
SDO_DIM_ELEMENT ('X', -20037508, 20037508, .05),
```

```
SDO_DIM_ELEMENT ('Y', -45884542, 45884542, .05)
), 54004);
```

2. Ensure that the spatial index is created on the LL_GEOMETRY column. The LL_GEOMETRY column by default stores spatial data using SRID 54004, so this works without changes with the eLocation base map:

```
create index Q1_DIAGRAM_OBJECTS_SDX
on diagram_objects (ll_geometry)
indtype is mdsys.spatial_index;
```

Once DIAGRAM_OBJECTS table is replicated to the Oracle Utilities Analytics database, follow the below steps to create Q1_DIAGRAM_OBJECTS_54004 table:

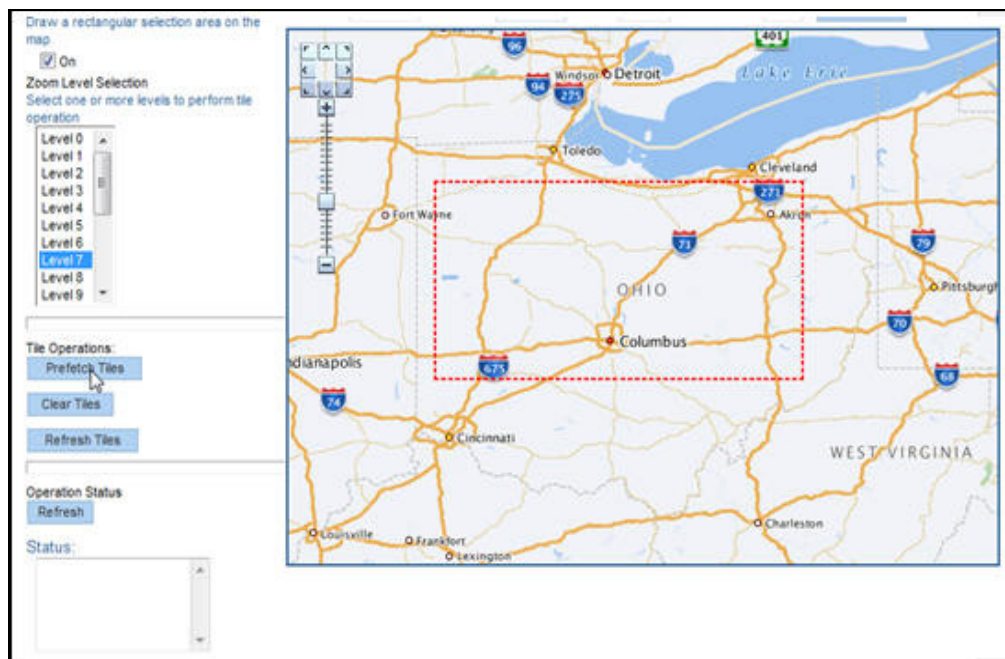
1. Connect to the DWADM schema of Oracle Utilities Analytics database and execute the following:

```
CREATE TABLE Q1_DIAGRAM_OBJECTS_54004 as select * from
DIAGRAM_OBJECTS;
```

2. INSERT INTO user_sdo_geom_metadata:

```
VALUES ('Q1_DIAGRAM_OBJECTS_54004','LL_GEOMETRY',
MDSYS.SDO_DIM_ARRAY (
SDO_DIM_ELEMENT ('X', -20037508, 20037508, .05),
SDO_DIM_ELEMENT ('Y', -45884542, 45884542, .05)
), 54004);
```

3. CREATE INDEX Q1_DIAGRAM_OBJECTS_SDX_54004 on Q1_DIAGRAM_OBJECTS_54004 (ll_geometry) indextype is mdsys.spatial_index;
4. Under **Tile Operations**, click on **Prefetch Tiles**. Here is a snapshot of the area selection and the tile operation.



This process takes some time, depending upon the hardware configuration of the system and the amount of data to be prefetched. To check the current status of the operation, click **Refresh** under the **Operation Status**. The status will change to “Finished” when the operation is done.

Chapter 10

Installing NMS BI Publisher Reports

This section describes the steps to be performed while installing the Oracle Utilities Analytics NMS IEEE outage reports:

1. Unzip the IEEE outage reports contained in **OUA NMS BI Publisher reports.zip** from the installation media to a temporary directory (ex. TEMPDIR) on the server where Oracle BI Publisher is installed.
2. Log into Oracle BI Publisher (<http://<BI Publisher server name>:9704/xmlpserver/>) as the Administrator from a browser that has access to the TEMPDIR folder from the step 1.
3. Set up a database connection as follows:
 - a. Navigate to **Oracle BI Publisher Administration > Data Sources > JDBC Connection**.
 - b. Click **Add Data Source**.
 - c. In the **Data Source Name** field, enter *NMS BI Publisher* or a name of your choice.
 - d. Set the **Driver Type** to Oracle 12c.
 - e. Set the **Database Driver Class** to `oracle.jdbc.OracleDriver`.
 - f. Set the **Connection string**
`to;jdbc:oracle:thin:@<yourmachine>:<Port>:<ORACLE_SID>`
Note: The database connection referring to OUA have to be setup here.
 - g. Set the **username** and **password** to match your Oracle Utilities Analytics database login values.
Note: The username should be “MDADM” and the password corresponding to this user.
 - h. Click **Test Connection** and verify that it is properly configured.
 - i. Click **Apply**.
4. From the **BI Publisher Catalog** page, select **Shared Folders** from the folders tree.
5. On top of the folders section, click the **New** drop-down list and select **Folder** from the list.
6. Enter *NMS IEEE Reports* as the folder name (or a name of your choice), then click **Create**. The new folder is added. You may have to click **Refresh** button to update the Folders list.
7. Select the *NMS IEEE Reports* folder in the folder list.
Under the **NMS IEEE Reports** folder, create another new folder named **NMS IEEE Data Models**.

8. Select the **NMS IEEE Data Models** directory, and then click **Upload** in the **Tasks** section on the bottom left.
 - a. Browse to the directory where the NMS IEEE BI Publisher reports exist (TEMPDIR from step 1).
 - b. Locate all of the data model files and upload them to the **NMS IEEE Data Models** directory. These files contain an extension of .xdmz and include the following files:
 - CELID DataModel.xdmz
 - CEMI Data Model.xdmz
 - DailyTroubleReport.xdmz
 - DeviceOutageHistory.xdmz
 - Feeder Impact on System Metrics.xdmz
 - IEEE Benchmarking Model.xdmz
 - IEEE_TMED_Calculations.xdmz
 - IEEEIndiceCalculations.xdmz
 - RecurringDeviceOutages.xdmz
9. Select the **NMS IEEE Reports** directory, and then click **Upload** in the **Tasks** section on the bottom left.
 - a. Browse to the directory where the OUA NMS IEEE BI Publisher reports exist (TEMPDIR from step 1).
 - b. Locate all of the report files and upload them to the **NMS IEEE Reports** directory. These files contain an extension of .xdoz and include the following files:
 - CELID DataModel.xdoz
 - CEMI Data Model.xdoz
 - DailyTroubleReport.xdoz
 - DeviceOutageHistory.xdoz
 - Feeder Impact on System Metrics.xdoz
 - IEEE Benchmarking Model.xdoz
 - IEEE_TMED_Calculations.xdoz
 - IEEEIndiceCalculations.xdoz
 - RecurringDeviceOutages.xdoz
10. Assign the appropriate JDBC connection to the imported data models.
 - a. Click **Catalog**.
 - b. Select the **NMS IEEE Data Models** directory, and then select the CriticalCustomerOutages.xdmz data model.
 - c. Click **Data Model** on the top left.
 - d. In the **Properties** frame on the right, make sure that **Default Data Source** points to the data source you created earlier. This defaults to **NMS BI Publisher**.
 - e. You must perform this step for all of the data models under the NMS IEEE Data Models directory.
11. Assign the appropriate data model to all the NMS IEEE Reports.
 - a. Click **Catalog**.

- b. Select the **NMS IEEE Reports** directory. Click **Edit** for the **CriticalCustomerOutages** report.
- c. At the top-left of the page, click **Search**.
- d. Browse and select the appropriate data model file (will match the name of the report with an extension of .xdmz).
- e. Save the current report by clicking **Save** on the top-right of the page.

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