Oracle® Revenue Management and Billing Analytics

Version 2.2.1.0.0

Installation Guide

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ORACLE

Oracle Revenue Management and Billing Analytics Installation Guide
E53516-01

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Preface

About This Document

This guide helps you install and configure Oracle Revenue Management and Billing Extractors, Schema and Oracle Revenue Management and Billing Analytics Dashboards. Unless otherwise stated, this guide refers to these two products together as Oracle Revenue Management and Billing Analytics (ORMBA). If any topic is specific to only one of the products, it will be specifically mentioned.

Intended Audience

This document is intended for the following audience:

- Administrators
- Development Team
- Consulting Team
- Implementation Team

Organization of the Document

The information in this document is organized into the following sections:

Section No.	Section Name	Description
Section 1	About Oracle Revenue Management and Billing Analytics	Provides an overview of Oracle Revenue Management and Billing Analytics
Section 2	Before you begin	Details the source and target system requirements
Section 3	Preparing for Installation	Explains how to prepare source and target systems for installation
Section 4	ORMBA Database Component Installation	Includes procedure to create database schemas, installing ORMBA schema and post installation checks
Section 5	ORMBA Admin Tool Installation	Details the installation process of Admin Tool Component
Section 6	ORMBA ETL Component Installation	Details the installation process of ETL component
Section 7	ORMBA Dashboard Installation	Details the installation process of Dashboard Component
Section 8	ORMBA Modeling Configuration	Details the configuration of Modeling Component
Section 9	ORMBA Spatial Analysis Configuration	Details the configuration of Spatial analysis

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Related Documents

You can refer to the following documents for more information:

Document	Description
Oracle Revenue Management and Billing Analytics Security Guide	Describes how to configure security for Oracle Revenue Management and Billing Extractors and Schema, and Oracle Revenue Management and Billing Analytics

Change Log

Revision	Last Update	Updated Section	Comments
1.1	October 2016	All	Restructured the document
1.2	February 2017		Included information related to Mandatory Service Pack + changes to address documentation bugs
1.3	February 2017		Included information related to optional service pack + other minor updates

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1. About Oracle Revenue Management and Billing Analytics

Oracle Revenue Management and Billing Analytics comprises of two modules:

- **Oracle Revenue Management and Billing (ORMB) Extractors and Schema:** It loads data from the source application to the data warehouse and provides out-of-the-box extraction and transformation of data. Oracle GoldenGate (OGG) and Oracle Data Integrator (ODI) perform the extraction, transformation and load (ETL) processes.
- **Oracle Revenue Management and Billing Dashboards**: It provides out-of-the-box reports based on Oracle Business Intelligence Enterprise Edition (OBIEE).

Oracle Revenue Management and Billing Analytics installation involves installation of the following components:

- Star Schema Definitions
- Extract, Transform and Load (ETL) process built on Oracle Data Integrator (ODI)
- ORMBA Admin Tool
- Pre-built Analytics Dashboards based on Oracle Business Intelligence Enterprise Edition (OBIEE)
- (Optional) Modeling or Simulation feature

1.1 ORMBA Architecture

The following figure graphically represents the logical architecture of Oracle Revenue Management and Billing Analytics:

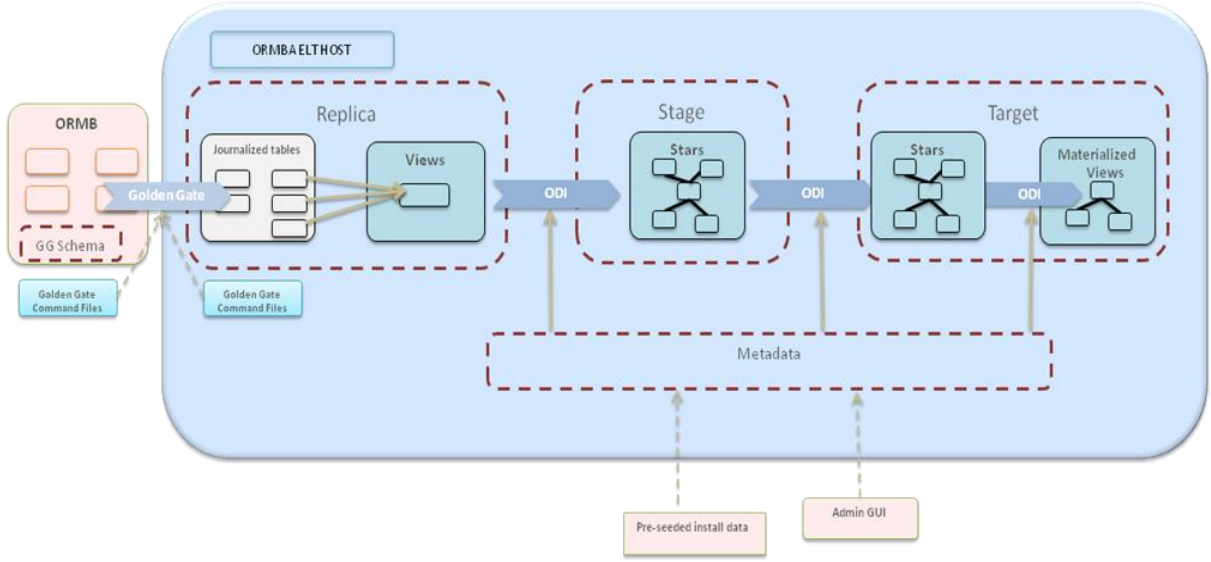

Figure 1: Logical Architecture

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The following figure graphically represents a typical high-level architecture of Oracle Revenue Management and Billing Analytics:

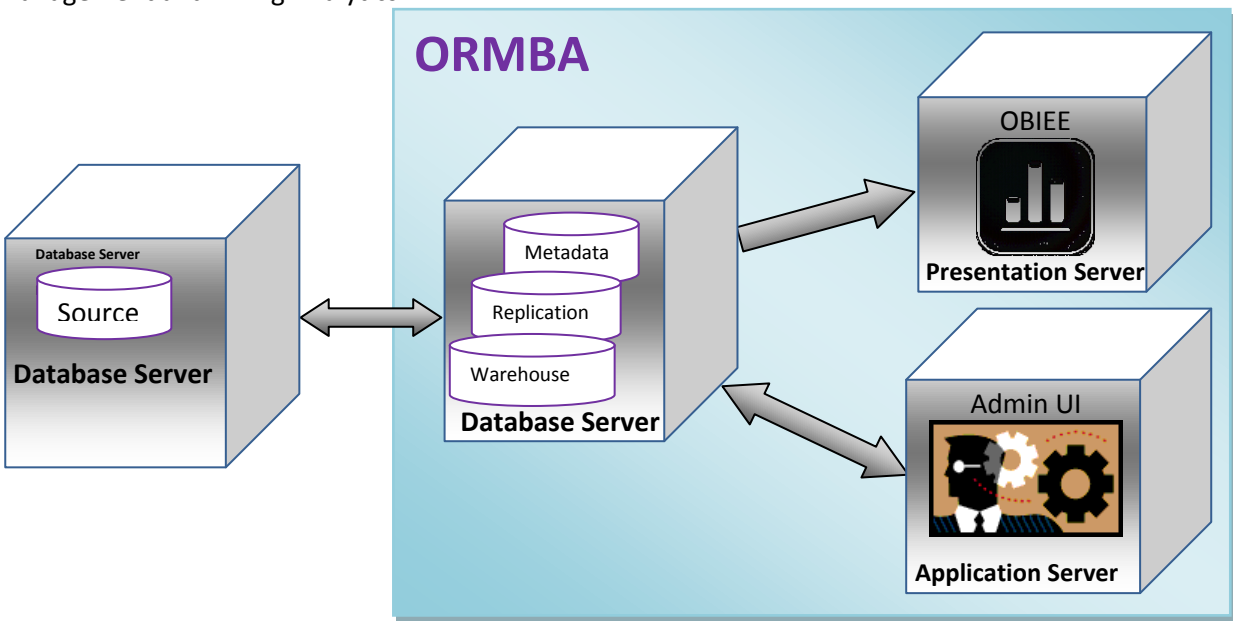

Figure 2: High Level Architecture

You can see a more detailed architectural diagram below:

Note: We recommend a physical architecture as illustrated in the above image, but it is not mandatory to follow this. You can have any one of the following architecture:

1. ORMB application server, ORMBA application server and ORMBA presentation server in one box
2. ORMBA application server and ORMBA presentation server in one box
3. ORMB application server and ORMBA application server in one box

The database server for ORMB and ORMBA can reside together in a single box, or in two separate boxes; but not with the application server or presentation server.

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2. Before You Begin

This section gives you an overview of the infrastructure requirements needed for ORMBA installation. The download and installation of the prerequisite software is covered in subsequent sections. The topics included in this section are:

- Source System Requirements
- Note: You need to install Oracle FMW only if you have purchased Golden Gate Management Pack license and is using Golden Gate Monitor.
- Target System Requirements

Note: All images / screen captures in this document are indicative and not exact.

2.1 Source System Requirements

2.1.1 ORMB

Oracle Revenue Management and Billing (ORMB) is the standard source system for ORMB Analytics and the following versions are supported:

Source System	Version
Oracle Revenue Management and Billing (ORMB)	2.5.0.3.0
	2.5.0.2.0
	2.5.0.1.0

Note: If your source system version is ORMB 2.5.0.1.0, you need to apply patch 25509440 from My Oracle Support.

2.1.2 Database

The source system database should be compatible with the ORMB installation. The recommended Oracle Database version is **12.1.0.2.0.**

2.1.3 Prerequisite Software List

Before beginning the installation, please ensure that you have purchased the following list of software for the source system:

Prerequisite Software	Version
Java Development Kit	1.7.0_71
Oracle GoldenGate	12.1.2.1.0
Oracle GoldenGate Management Pack (Optional)	12.1.3.0.0
Oracle Fusion Middleware Infrastructure (Optional)	12.1.3.0.0

Note: You need to install Oracle FMW only if you have purchased Golden Gate Management Pack license and is using Golden Gate Monitor.

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2.2 Target System Requirements

2.2.1 Operating System

ORMBA supports the following operating systems in the target:

- Oracle Linux 7.1 (64-bit) x86 -64
- RedHat Linux 7.1 Enterprise Edition (64-bit) x86-64

2.2.2 Database

The ORMB Analytics requires the following database configuration:

- Oracle Database Server Enterprise Edition 12.1.0.2.0 (with partitioning)

Optional – While purchasing the 12c database, you need to opt for the additional option - Oracle Spatial and Graph, if you prefer to use the ORMBA Spatial Analysis feature.

Note: Oracle Revenue Management and Billing Analytics Version 2.2.1.0.0 is supported on Oracle Unbreakable Enterprise Kernel. Oracle Revenue Management and Billing Analytics Version 2.2.1.0.0 is supported on Oracle VM 2.2.2. Refer to the knowledge base article ID 249212.1 on My Oracle Support for Oracle's Support Policy on VM Ware.

2.2.3 Prerequisite Software List

Software	Version
Java Development Kit	1.7.0_71
Oracle Fusion Middleware Infrastructure	12.1.3.0.0 (For Extractors and Schema)
	12.2.1.0.0 (For Dashboards)
Oracle Data Integrator	12.1.3.0.0
Oracle GoldenGate	12.1.2.1.0
Oracle GoldenGate Management Pack (Optional)	12.1.3.0.0
Oracle Business Intelligence Enterprise Edition	12.2.1.0.0

2.2.4 Web Browser Support

ORMBA Admin Tool	• Internet Explorer 11 • Firefox 45+
ORMBA Dashboards & Reports	• Internet Explorer 11 • Firefox 45+
ORMBA Mobile Application	• Android Lollipop • iOS 8.3+

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3. Preparing for Installation

We recommend you to prepare the infrastructure by downloading and installing the required prerequisite software, before proceeding with ORMBA installation. As a pointer, perform the following tasks while preparing for installation:

- Deciding the Implementation Strategy
- Installing Prerequisite Software – Source
- Installing Prerequisite Software – Target
- Downloading ORMBA Media Pack
- Creating Repositories
- Creating Weblogic Domains

3.1 Deciding the Implementation Strategy

3.1.1 Deciding Data Transfer Mode

While transferring historical data from source to replication for the first time, ORMBA uses the DBMS Data Pump feature, instead of Oracle GoldenGate. The Data Pump feature exports the dump of source system tables from source system and imports to ORMBA Replication schema. For transferring data dump between source and target systems, you can use either Network Link or FTP.

- **Network Link**: Choose this option for data transfer if there is sufficient network bandwidth for transfer of huge volumes of data. This is the default and recommended option.
- **FTP**: You can choose this option if Network Link option is not feasible due to insufficient network bandwidth. For example, when your source and target systems are located in two geographic locations choose this option.

Before you proceed with ORMBA installation, decide if the data transfer from source to replication is to be done via Network Link or FTP. Once you decide the mode of data transfer, update the same in ormba.properties file as explained in section 6.2 of this document.

Note: If the data transfer mode of initial load is FTP, you need to create ORMBA_DIR in the source and target database as explained in sections 3.1.2 and 3.3.1.

3.1.2 Setting Up Source System Database

Before proceeding with prerequisite software installation, ensure that ORMB database is up and running. The ORMB database can be single-tenant or multi-tenant.

Set the following database parameters in the source database by executing the respective commands on the container database (CDB), prior to ORMBA installation:

- Enable Supplemental Logging

  ALTER DATABASE ADD SUPPLEMENTAL LOG DATA;
- Enable Force Logging Mode

  ALTER DATABASE FORCE LOGGING;
- Ensure that you specify primary key constraint in all database tables
- Enable Golden Gate replication parameter

  ALTER SYSTEM SET ENABLE_GOLDENGATE_REPLICATION = TRUE SCOPE=BOTH;

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- (Optional) If the data transfer mode of initial load is FTP, create ORMBA_DIR in the source pluggable database. To do this, log on to the pluggable database of source system as SYS user and execute the following statement:

  CREATE DIRECTORY ORMBA_DIR AS <PATH>;

3.2 Installing Prerequisite Software – Source

This section explains the prerequisite software required on the Source system. You can find the list of prerequisite software and their corresponding versions in a previous section (2.1.3) of this document.

Note: Please proceed with the installation of prerequisite software only after completing the source system (ORMB) installation on the source system database.

Some of the software are available in the Oracle Software Delivery Cloud, while the others are available on Oracle Technology Network. The following matrix shows the portal where each of the prerequisite software is available for download:

Software	Version	Download from
Java Development Kit	1.7.0_71	Oracle Technology Network
Oracle GoldenGate	12.1.2.1.0	Oracle Software Delivery Cloud
(Optional) Oracle GoldenGate Management Pack	12.1.3.0.0	Oracle Software Delivery Cloud
(Optional) Oracle Fusion Middleware Infrastructure	12.1.3.0.0	Oracle Technology Network

Note: You need to install Oracle FMW only if you have purchased Golden Gate Management Pack license and is using Golden Gate Monitor.

3.2.1 Java Development Kit

To download Java Development Kit, you need to search for **Java SE Development Kit 7u71** (Linux x64) in Oracle Technology Network.

3.2.2 Setting Up Oracle Golden Gate (OGG)

Data Replication in ORMBA is implemented via Oracle GoldenGate (OGG). You need to install OGG on both source and target environments.

To download Oracle Golden Gate, you need to search in Oracle Software Delivery Cloud. By default, the latest version of software will be available in the download queue. If the queue does not list the required version, click **Search Alternate Release** link.

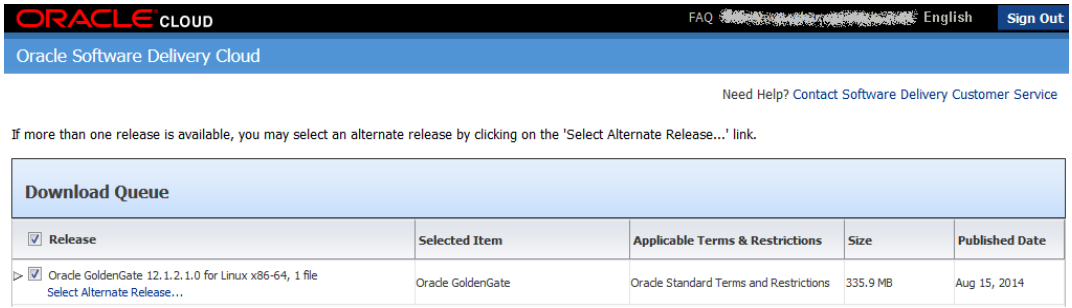

Figure 3: Downloading OGG

After downloading the software on the source system, you need to set up Golden Gate on the database server. Setting up Golden Gate involves the following steps:

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1. Create GG user in Container DB and grant required privileges
2. Create GG user in Pluggable DB and grant required privileges
3. Verify GG installation

Each of these steps is explained in detail below:

3.2.2.1 GG user creation in Container DB

Where: Container DB of source system

1. Go to Oracle GoldenGate Home (OGG_HOME) where OGG is installed and connect to the container database as SYS user using SQL *Plus.
2. Create a golden gate user and grant the required privileges by executing the following commands:

   GRANT CREATE SESSION TO <GOLDEN GATE USER NAME>;
   GRANT CONNECT TO < GOLDEN GATE USER NAME>;
   GRANT RESOURCE TO < GOLDEN GATE USER NAME>;
   GRANT ALTER ANY TABLE TO < GOLDEN GATE USER NAME>;
   GRANT ALTER SYSTEM TO < GOLDEN GATE USER NAME>;
   GRANT SELECT ANY TRANSACTION TO < GOLDEN GATE USER NAME>;
   EXEC DBMS_GOLDENGATE_AUTH.GRANT_ADMIN_PRIVILEGE (GRANTEE=>'< GOLDEN GATE USER NAME>',PRIVILEGE_TYPE=>'CAPTURE',GRANT_SELECT_PRIVILEGES=>TRUE, DO_GRANTS=>TRUE);
   GRANT UNLIMITED TABLESPACE TO < GOLDEN GATE USER NAME>;
   GRANT SELECT ANY DICTIONARY TO < GOLDEN GATE USER NAME>;

Note: If the source database is single tenant, skip the above steps and proceed with step 2 onwards.

3.2.2.2 GG user creation in Pluggable DB

Where: Pluggable DB of source system

1. Switch to Pluggable Database of source system as SYS user using SQL *Plus.
2. Create a new table space for the new user.
3. Create a new user named RMB01SRC and assign the newly created table space to RMB01SRC.
4. Grant the required privileges to RMB01SRC user by executing the following commands:

   GRANT CONNECT, RESOURCE TO RMB01SRC;
   GRANT ALTER SESSION TO RMB01SRC;
   GRANT CREATE TABLE TO RMB01SRC;
   GRANT ALTER ANY TABLE TO RMB01SRC;
   GRANT FLASHBACK ANY TABLE TO RMB01SRC;
   GRANT SELECT ANY DICTIONARY TO RMB01SRC;
   GRANT SELECT ANY TABLE TO RMB01SRC;
   GRANT EXECUTE ON DBMS_FLASHBACK TO RMB01SRC;
   GRANT EXECUTE ON UTL_FILE TO RMB01SRC;
   GRANT EXP_FULL_DATABASE TO RMB01SRC;
   GRANT IMP_FULL_DATABASE TO RMB01SRC;
5. Execute the following commands:

   @marker_setup.sql
   @role_setup.sql

   Note: While executing the above scripts, you will be prompted to “Enter Oracle GoldenGate schema name”. Enter **RMB01SRC** as the response.

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6. Exit SQL*Plus.

3.2.2.3 Verify GG Installation

Where: Source database server

1. Log on to the source database server and navigate to OGG_HOME.
2. Log on to GG client using the command:

   ./ggsci
3. Execute the command **info all** to check if MANAGER is in RUNNING mode.

3.2.3 OGG Execution Mode

You can execute GoldenGate in either ONLINE or OFFLINE mode. In ONLINE mode, the configuration scripts are automatically copied to source and target machines, whereas in OFFLINE mode, you need to do this manually.

- To run GoldenGate in ONLINE mode, you need to:
  - Install Oracle GoldenGate Management Pack in both source and target machines
  - JAGENT should be up and running.
  - Edit the ormba.properties file to include ormba.replication.gg.mode.online = **TRUE** during ETL installation (explained in section 6.2).
  - Execute the script **createGoldenGateTopology.sh** during ETL installation (as explained in section 6.3.3).
- To run GoldenGate in OFFLINE mode, you need to:
  - Edit the ormba.properties file to include ormba.replication.gg.mode.online = **FALSE** during ETL installation **(**as explained in section 6.2).
  - Skip the execution of **createGoldenGateTopology.sh** during ETL installation **(**as explained in section 6.3.3).
  - After executing the importData.sh, check the GG script path and follow the manual instructions in readme.txt file available within each model folder, which involves manually copying the generated GoldenGate scripts to both source and target machines.

3.2.4 (Optional) Oracle Golden Gate Management Pack

If you have opted for Oracle Golden Gate Monitoring feature, you need to download and install Oracle Golden Gate Management Pack in both source and target.

Note: Oracle Fusion Middleware Infrastructure is required for Management Pack installation. To download Oracle Fusion Middleware Infrastructure, navigate to Oracle Technology Network and accept the license agreement. Under Oracle ADF Downloads, select **12.1.3.0** in the Application Development Runtime field and click Download File.

To download OGG management pack, log on to Oracle Software Delivery Cloud and search for '**Management Pack for Oracle GoldenGate'** product, corresponding to platform **Linux x86-64**. By default, the latest version of software will be available in the download queue. If the queue does not list the required version, click **Search Alternate Release** link.

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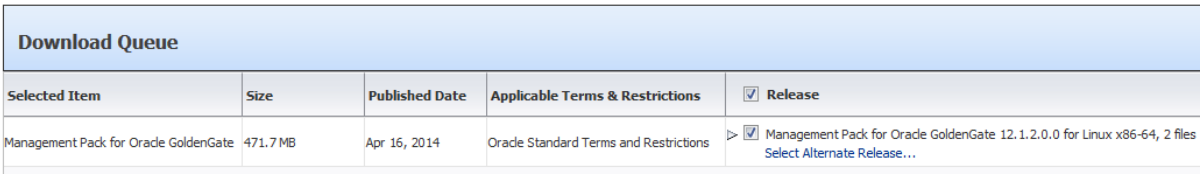

Figure 4: Downloading OGG Management Pack

3.3 Installing Prerequisite Software – Target

This section explains how to download and install the prerequisite software required for ORMBA installation, if not already done.

Some of the software are available in the Oracle Software Delivery Cloud (eDelivery), while the others are available on Oracle Technology Network (OTN).

The following matrix shows the portal where each of the prerequisite software is available for download:

Software	Version	Download from
Java Development Kit	1.7.0_71 (For Extractors and Schema)	OTN
	1.8.0_121 (For Dashboards)	
Oracle Fusion Middleware Infrastructure	12.1.3.0.0 (For Extractors and Schema)	OTN
	12.2.1.0.0 (For Dashboards)	
Oracle Data Integrator	12.1.3.0.0	eDelivery
Oracle GoldenGate	12.1.2.1.0	eDelivery
Oracle GoldenGate Management Pack (Optional)	12.1.3.0.0	eDelivery
Oracle Business Intelligence Enterprise Edition	12.2.1.0.0	OTN

Note: You should have sufficient experience in installing Oracle applications and software to handle the installation of the above-mentioned prerequisite software.

3.3.1 Installing and Setting Up Target System Database

You need to download and install Oracle Database Enterprise Edition 12.1.0.2.0 on the target database server. Ensure the following points during database installation:

- Create a pluggable database exclusively for ORMBA.

Note: Refer to the ORMB Analytics Admin Guide to perform the recommended database settings on the pluggable database.

- If you are using Network Link as the Data Transfer Mode (as explained in section 3.1.1), check if there are Oracle key words available in the service names of target database. If included, rename the service names and restart the database. For example, if the service name is pdborcl.in.oracle.com, rename it to exclude the keyword “in”.

While setting up the target system database, perform the following tasks:

- Execute the statements below on the target pluggable database to set database parameters:

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ALTER SYSTEM SET DEFERRED_SEGMENT_CREATION=TRUE SCOPE=BOTH;
ALTER SYSTEM SET "_PARTITION_LARGE_EXTENTS"=FALSE SCOPE=BOTH;
ALTER SYSTEM SET RECYCLEBIN = OFF DEFERRED;

Note: You need to set the parameter **_PARTITION_LARGE_EXTENTS** to FALSE only if you have space constraints.

- Create ORMBA_DIR in the target pluggable database by logging on as SYS user, using the following statement:

  CREATE DIRECTORY ORMBA_DIR AS <PATH>;

- Enable Golden Gate replication parameter in the container database using the statement:

  ALTER SYSTEM SET ENABLE_GOLDENGATE_REPLICATION = TRUE SCOPE=BOTH;

3.3.2 Installing Java Development Kit (JDK)

To install Java Development Kit for Extractors and Schema, follow the instructions below:

1. Navigate to Oracle Technology Network and open the Java SE 7 Archive Downloads page.
2. In the Downloads tab, search for **Java SE Development Kit 7u71**.
3. Accept the license agreement and download the file corresponding to **Linux x64**.

After downloading the file, you can proceed with the installation of JDK in the application server following the documentation here.

To install Java Development Kit for Dashboards, follow the instructions below:

1. Navigate to Oracle Technology Network and open the Java SE Development Kit 8 Downloads page.
2. Download the file corresponding to **Linux x64**.

After downloading the file, you can proceed with the installation of JDK in the presentation server following the documentation here.

3.3.3 Installing Fusion Middleware (FMW)

To download Oracle Fusion Middleware Infrastructure for Extractors and Schema, follow the instructions below:

1. Navigate to Oracle Technology Network and open the Downloads for Oracle ADF page.
2. Accept the license agreement.
3. Under Oracle ADF Downloads section, select **12.1.3.0.0** in the Application Development Runtime drop-down list.
4. Click **Download File**.

After downloading the file, you can proceed with the installation of FMW infrastructure software on the application server. Detailed installation instructions are available here.

To download Oracle Fusion Middleware Infrastructure for Dashboards, follow the instructions below:

1. Navigate to Oracle Technology Network and open the Downloads for Oracle ADF page.
2. Accept the license agreement.
3. Under Oracle ADF Downloads section, select **12.2.1.0.0** in the Application Development Runtime drop-down list.

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4. Click **Download File**.

After downloading the file, you can proceed with the installation of FMW infrastructure software on the presentation server. Detailed installation instructions are available here.

3.3.4 Installing Oracle Data Integrator (ODI)

To download Oracle Data Integrator, follow the instructions below:

1. Navigate to Oracle Software Delivery Cloud.
2. Search for release **12.1.3.0.0** of ODI for Linux x86-64 platform as shown in the image below:

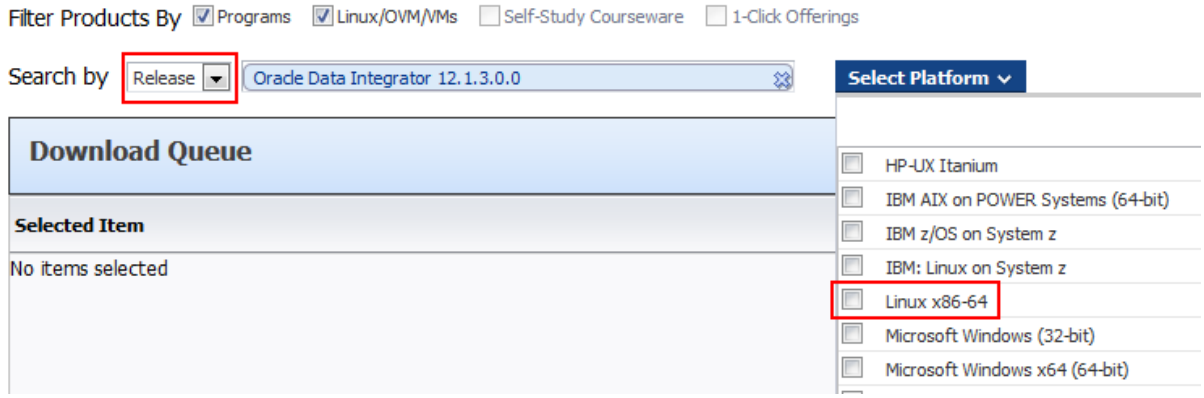

Figure 5: Downloading ODI

3. Download the file after accepting the licensing agreement.

After downloading the file, you can proceed with the installation of ODI software. Detailed instructions for installation are available here.

Note: If you have trouble launching ODI in Linux 7, refer to the knowledge base article ID 2010923.1 on My Oracle Support and follow the steps to launch ODI Studio.

3.3.5 Setting Up Oracle Golden Gate

To download Oracle Golden Gate software, you need to search in Oracle Software Delivery Cloud. By default, the latest version of software will be available in the download queue. Click **Search Alternate Release** link to download the required version.

To verify Oracle GoldenGate installation on the target database server, follow the steps below:

1. Log on to the target database server and navigate to OGG_HOME.
2. Log on to GG client using the command:

   ./ggsci

3. Execute the command **info all** to check if MANAGER is in RUNNING mode.

3.3.6 Setting Environment Variables

Before initiating the installation process, you must set the respective environment variables. The environment variables to be set are listed below:

- JAVA_HOME – on all machines
- ORACLE_SID
- ORACLE_HOME
- LD_LIBRARY_PATH
- FMW_HOME – location where Oracle Fusion Middleware (12.1.3.0.0) is installed

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- ODI_SDK – <FMW_HOME>/odi/sdk

3.3.7 Installing Oracle Business Intelligence Enterprise Edition (OBIEE)

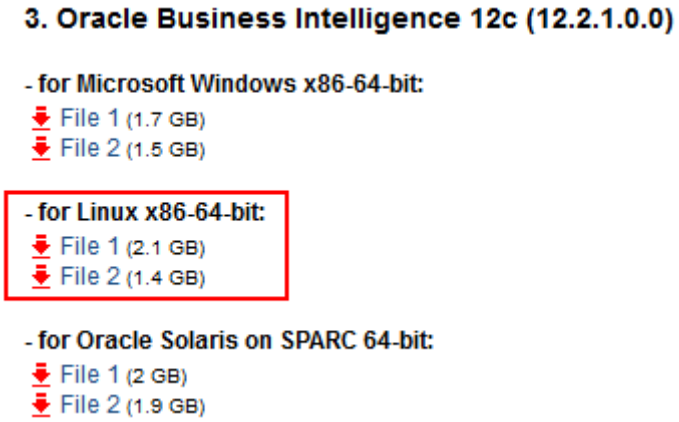
To install Oracle Business Intelligence Enterprise Edition on the presentation server, follow the instructions below:

Note: Prior to installing OBIEE, verify if FMW version 12.2.1.0.0 is installed on the same server.

1. Click the link below to view the downloads for OBIEE 12.2.1.0.0:

   http://www.oracle.com/technetwork/middleware/bi-enterprise-edition/downloads/business-intelligence-2717951.html

2. Download the files under Linux x86-64-bit option.



3. Download the OBI Developer Client Tool also from the same page.

4. Install OBIEE following the instructions in the documentation below:

   http://docs.oracle.com/middleware/1221/core/BIEIG/toc.htm

Note: As part of OBIEE installation, repositories are created using Repository Creation Utility.

5. Download and install patch 22140759 from My Oracle Support. For more information on how to do this, refer to the documentation here.

3.4 Downloading ORMBA Media Pack

The Oracle Revenue Management and Billing Analytics Version 2.2.1.0.0 media packs are available for both Banking and Insurance domains, and both contain the following packages:

- Oracle Revenue Management and Billing Analytics V2.2.1.0.0 Release Notes
- Oracle Revenue Management and Billing Analytics V2.2.1.0.0 Database Component
- Oracle Revenue Management and Billing Analytics V2.2.1.0.0 ETL Component
- Oracle Revenue Management and Billing Analytics V2.2.1.0.0 Dashboard Component
- Oracle Revenue Management and Billing Analytics V2.2.1.0.0 Web Component

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3.4.1 Downloading the Media Pack

You can download the Oracle Revenue Management and Billing Analytics Version 2.2.1.0.0 media pack from the Oracle Software Delivery Cloud.

Follow the procedure below to download the media pack:

1. Log on to Oracle Software Delivery Cloud. The Export Restrictions page appears.
2. Click **Accept**. The Search Software page appears.
3. Select **Oracle Financial Services Revenue Management and Billing Analytics** or **Oracle Insurance Revenue Management and Billing Analytics** option from the Product list.
4. Click the **Select Platform** button and select **Linux x86-64**. You can see the product is listed in the Selected Products section.
5. Click **Continue**. The available releases for the selected product are listed.
6. The check box corresponding to 2.2.1.0.0 version of the selected product for Linux x86-64 will be selected automatically.
7. Click **Continue**. The Oracle Standard Terms and Restrictions page appears.
8. Select the **I have reviewed and accept the terms of the Commercial License, Special Programs License, and/or Trial License** check box.
9. Click **Continue**. The contents of the media pack are listed.
10. Click **Download** to download all media packs in a go. If you want to download each component separately, click the corresponding zip file.

3.4.2 Moving the Media Pack Components

After download, you need to move each of the media pack components to the respective servers as shown below:

Media Pack Component	Download to:
Oracle Revenue Management and Billing Analytics V2.2.1.0.0 Database Component	Database server
Oracle Revenue Management and Billing Analytics V2.2.1.0.0 ETL Component	Application server
Oracle Revenue Management and Billing Analytics V2.2.1.0.0 Dashboard Component	Presentation server
Oracle Revenue Management and Billing Analytics V2.2.1.0.0 Web Component	Application server

11. Create a temporary directory named **TEMPDIR** on each of the servers where you are going to save the component.
12. Copy the downloaded component zip files to the respective **TEMPDIR** directories.
13. Unzip each component package within the **TEMPDIR** folder. After successful installation, you can delete the files.

Note: You need not move the Release Notes to any particular server. Save the document to a convenient location.

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3.4.3 Downloading the Mandatory Service Pack

Before you begin the installation of ORMBA v 2.2.1.0.0, you need to apply mandatory service pack 25495476 over the ORMBA Media Pack (downloaded in the previous section).

The service pack 25495476 is available on My Oracle Support under the Patches & Updates tab. For detailed instructions on how to apply the service pack, follow the instructions in the Knowledge Base article 2230405.1.

Important: DO NOT proceed with ORMBA 2.2.1.0.0 installation, without applying the mandatory service pack p25495476_22100_Linux-x86-64.zip by following the Knowledge Base article 2230405.1.

If your source system version is ORMB 2.5.0.1.0, you need to download the optional service pack 25509440 from My Oracle Support. For detailed instructions on how to download and install the service pack, follow the instructions in article 2231415.1.

3.5 Creating Repositories (for Extractors & Schema)

You need to create metadata schemas in target database server for Oracle Fusion Middleware, Oracle Data Integrator, and Oracle GoldenGate Monitor (optional) using the Repository Creation utility. You can find documentation on Repository Creation Utility (RCU) in the link below:

http://docs.oracle.com/middleware/1221/core/RCUUG/GUID-58F349C6-4913-4693-911E-C66646F37DED.htm

Note: Before you proceed with repository creation, check if you have successfully installed Oracle Fusion Middleware Infrastructure on the application server.

To create repositories for Extractors and Schema, follow the procedure below:

1. In the application server node, change to the <FMW_HOME>/oracle_common/bin directory, where <FMW_HOME> is the location where Oracle Fusion Middleware is installed in the application server.
2. Execute the Repository Creation utility using the command: **./rcu**
3. The Repository Creation Utility – Welcome page appears.
4. Click **Next**. The Create Repository page appears.
5. Perform the following in the Create Repository page:
6. Select the **Create Repository** option, if not already selected.
7. Select the **System Load and Product Load** option.
8. Click **Next**. The Database Connection Details page appears.
9. Enter the required details in the Database Connection Details page:

Field	Value
Database Type	Oracle Database
Host Name	Name of the target database server
Port	Port number for target DB
Service Name	Service name for DB
User Name	Pluggable DB User with DBA or SYSDBA privileges E.g. SYS
Password	Password for the DB User
Role	SYSDBA

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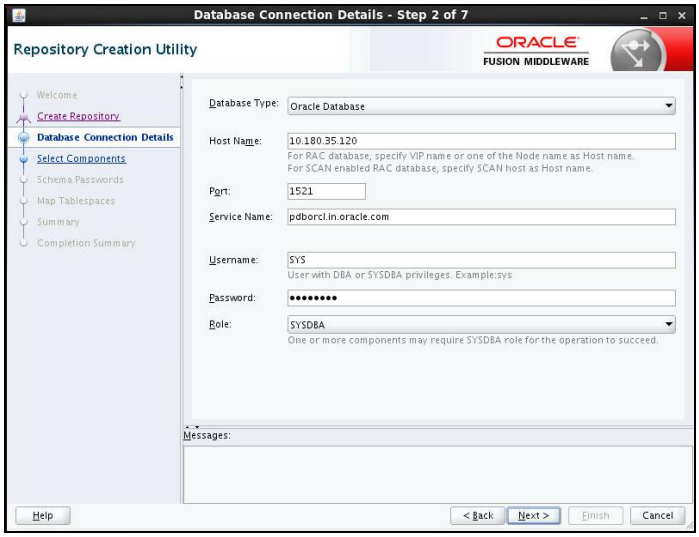

Figure 6: Database Connection Details Page

10. Click **Next**. The installer checks the prerequisites and attempts to establish the connection with the specified database.

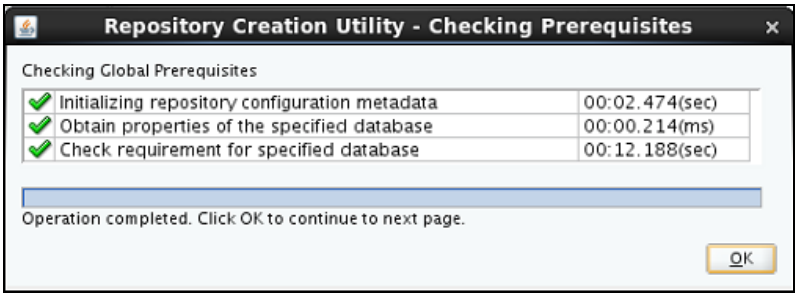

Figure 7: Checking Global Prerequisites

- If an error occurs while establishing the connection, the error messages are listed In the Message field of Database Connection Details page.
- If there are no errors, click OK in the Checking Prerequisites page.

11. The Select Components page appears. Use this page to select the component schemas you want to create. Enter the required details as indicated below:
    - Select **Create new prefix** and enter **ORMBA** as the new prefix. This is used to create logical grouping of schemas in database.
    - Select **Audit Services** under the AS Common Schemas section. The other audit check boxes (**Audit Services Append** and **Audit Services Viewer**) are selected automatically.
    - Select **Oracle Data Integrator**. The **Master and Work Repository** check box under the Oracle Data Integrator section and the **Oracle Platform Security Services** check box under the AS Common Schemas section are selected automatically.
    - (Optional) Select **Oracle GoldenGate** option. This selects the **Monitor Server** option automatically. **Note:** Perform this step only if you are using Oracle GoldenGate in ONLINE mode.

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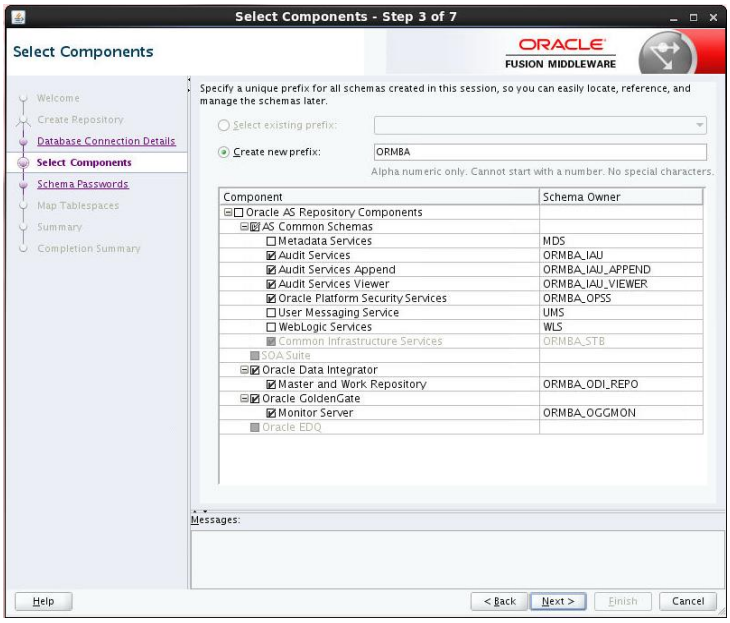

Figure 8: Select Components Page

12. The Select Components page also lists the schema owners for each component. If needed, you can edit the names.
13. Click **Next**. The installer checks the prerequisites.

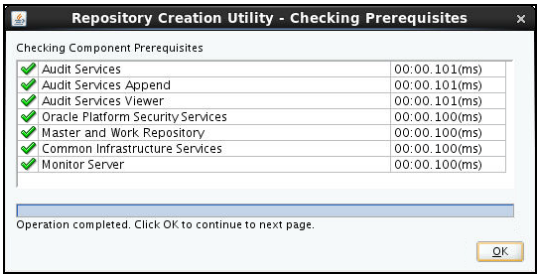

Figure 9: Checking Component Prerequisites

- If an error occurs while checking the prerequisites, the error messages appear in the Messages field on the Select Components page.
- If there are no errors, click OK.

14. The Schema Passwords page appears. Use this page to enter the password for the schema you are creating. Enter the details as shown below:
    - Select **Use same passwords for all schemas**.
    - Enter required password in the **Password** and **Confirm Password** fields.

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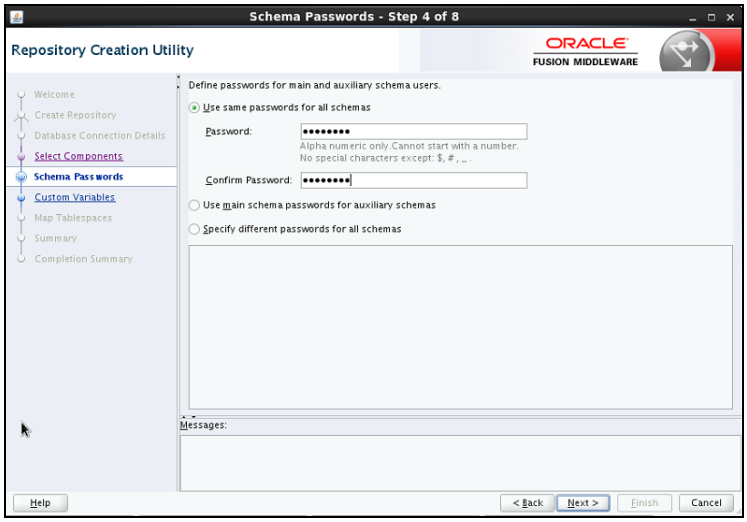

Figure 10: Schema Passwords Page

15. Click **Next**. The Custom Variables page appears. Use this page to enter additional configuration details needed by the ODI – Master and Work Repository Component during runtime.
16. Enter values for custom variables.

Field	Value
Supervisor Password	Password of the ODI supervisor user (Login user)
Confirm Supervisor Password	Confirm the Supervisor password
Work Repository Type	D (The Work Repository will be created as a development repository.)
Work Repository Name	WORK_REPO A unique name for the Work Repository
Work Repository Password	Password for the Work Repository
Confirm Work Repository Password	Confirm the Work Repository password
Encryption Algorithm	AES-128 (Default value)

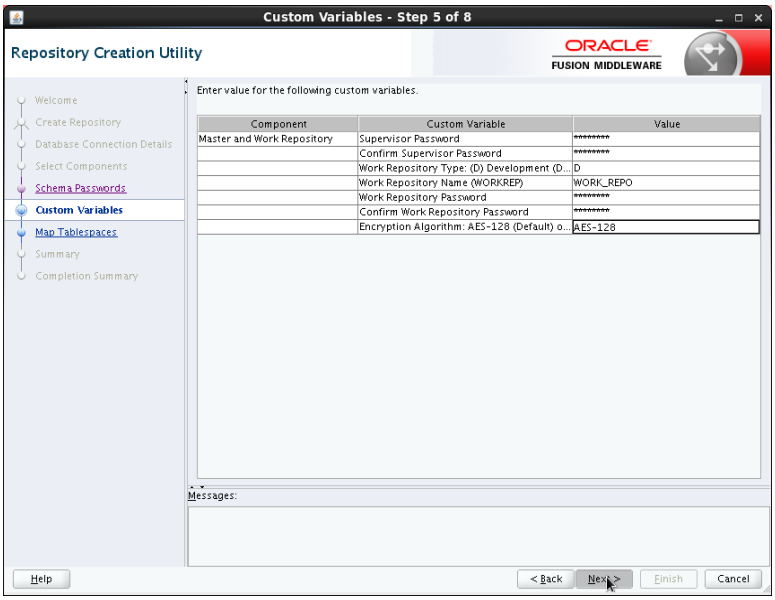

Figure 11: Custom Variables Page

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17. Click **Next**. The Map Tablespaces page appears. Use this page to enter the default and temporary tablespace mappings for each of the schemas being created.
18. Review the **Default Tablespace** and **Temp Tablespace** fields for each component and if needed, edit the values.

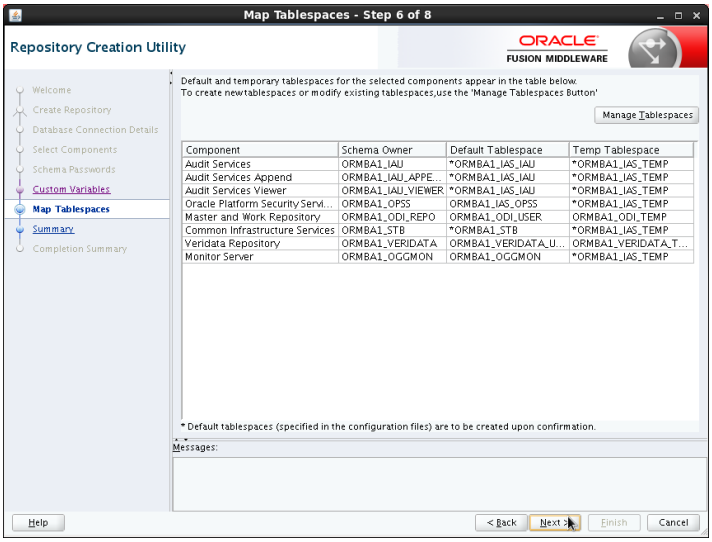

Figure 12: Map Tablespaces Page

19. Click **Next**. You will be asked to confirm the creation of tablespaces for the new schemas.
20. Click OK. The installer displays the progress of table space creation.

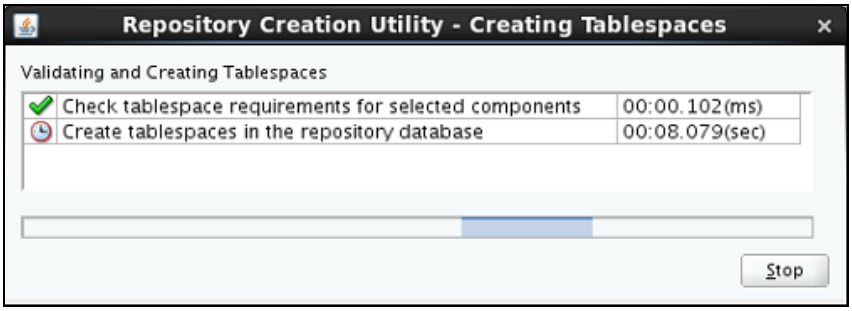

Figure 13: Validating and Creating Tablespaces

21. The Summary page appears and gives a summary of the actions that are going to be carried out.

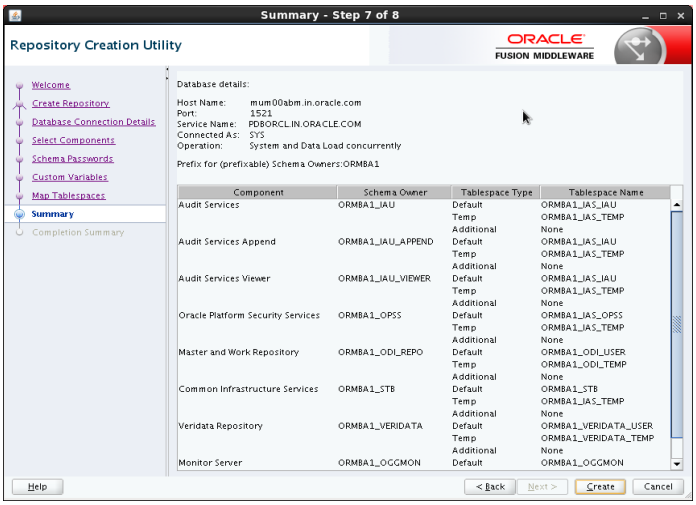

Figure 14: Summary Page

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22. Review the information and click **Create** to begin schema creation. The installer displays the progress.

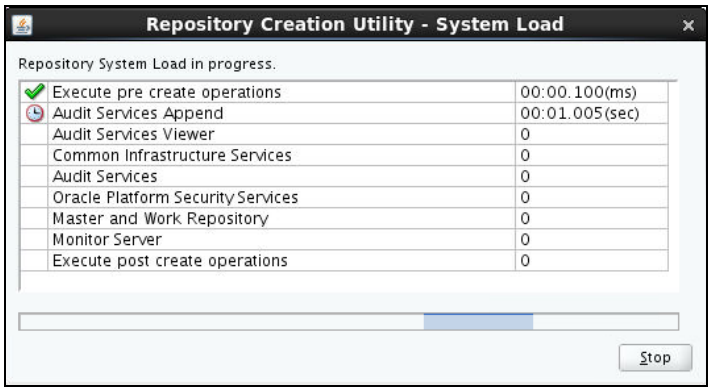

Figure 15: Repository System Load in progress

23. When the schema creation is completed, the Completion Summary page appears. This page displays a summary of the actions performed.

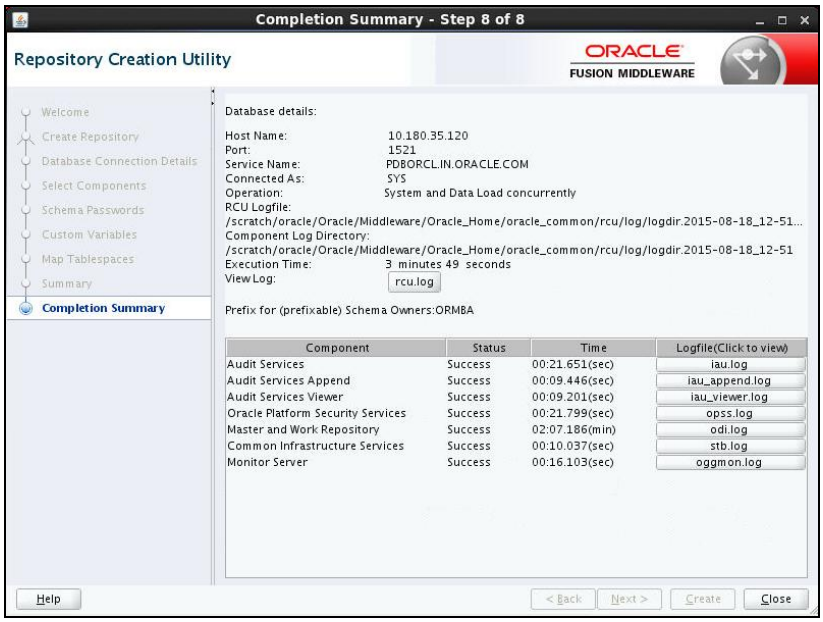

Figure 16: Completion Summary

24. Connect to the pluggable Database as SYS user using SQL *Plus and check if the schemas and tablespaces are created successfully.

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3.6 Creating Weblogic Domains

You can create WebLogic domains for ODI Agent and Admin UI using the WebLogic Server Configuration Wizard.

Note: Before you proceed with WebLogic domain creation, check if you have installed Oracle Fusion Middleware Infrastructure and Oracle Data Integrator on the application server.

The Configuration Wizard simplifies the process of creating and extending a domain.

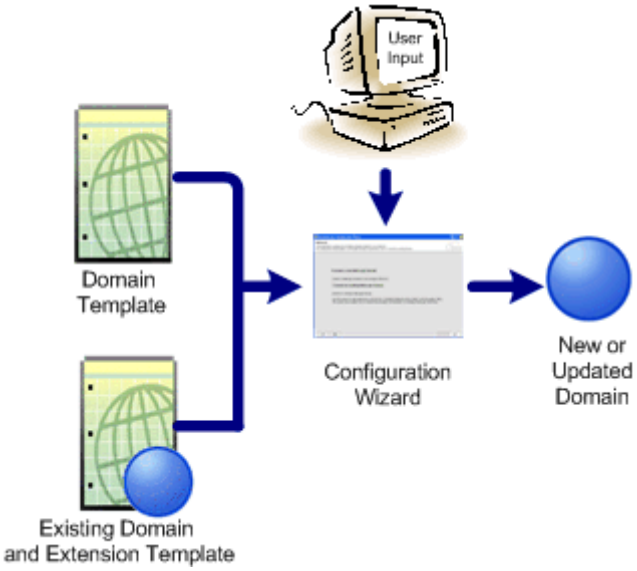

Figure 17: WebLogic Configuration Wizard

To create or extend a WebLogic domain by using the Configuration Wizard, select the product components (product templates) to be included in the domain (or choose an existing template), and provide basic configuration information. The Configuration Wizard then creates or extends the domain by adding the resources defined in the selected product templates.

Note: Use the Configuration Wizard only in **OFFLINE** mode (i.e. when the WebLogic server is not running).

To create the WebLogic domain, follow the procedure below:

1. Change to the <FMW_HOME>/oracle_common/common/bin directory, where **FMW_HOME** is the location where Oracle Fusion Middleware is installed in the application server.
2. Start the Configuration Wizard in Graphical mode using the command:

   ./config.sh
3. The Fusion Middleware Configuration Wizard appears. Perform the following steps in the page:
   - Select the **Create a new domain** option.
   - Enter **<FMW_HOME>/user_projects/domains/ormba_domain** in the **Domain Location** field, where ormba_domain is the unique directory name of the new domain.

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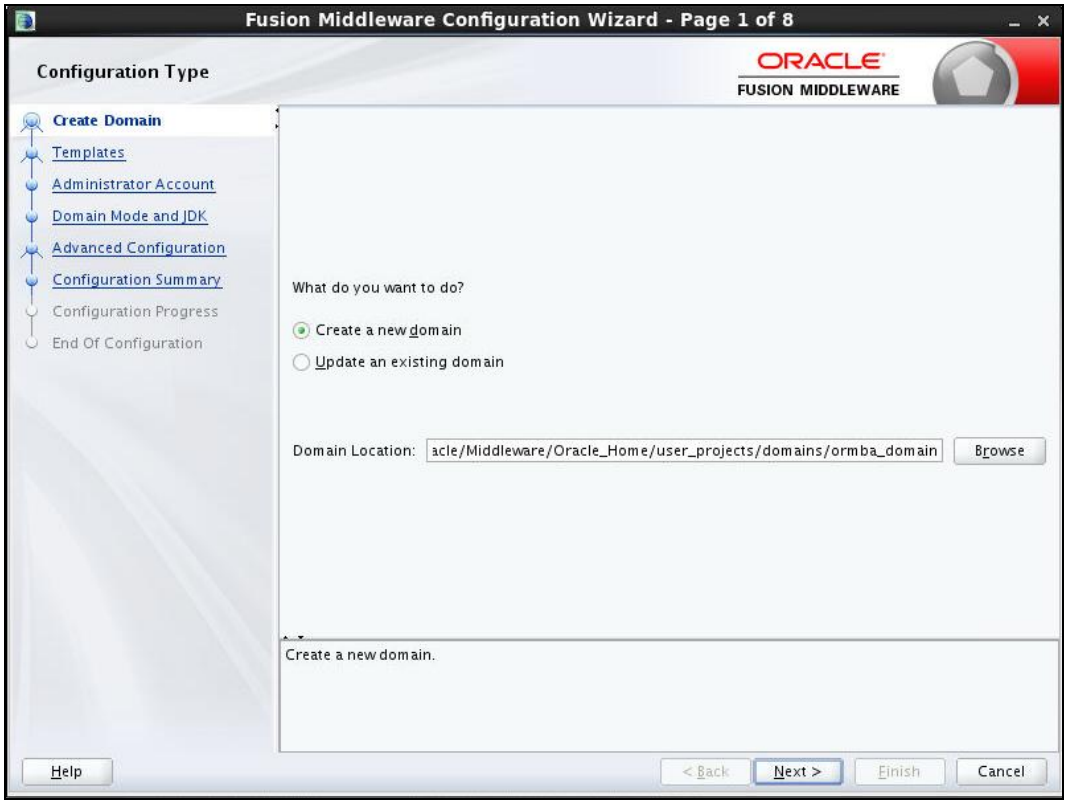

Figure 18: Create Domain Page

4. Click **Next**. The Templates page appears. Use this page to indicate that you want to create the new domain using an existing product template.
    - Select **Create Domain Using Product Templates**. The page displays the entire list of Product Templates readily available along with the various Fusion Middleware products installed in the system (Application server). Each template in the list is associated with a JAR file, which configures the required domain resources for the product.
    - Select the following templates to ensure that the WebLogic domain supports ODI. The other related templates are automatically selected.
        - Oracle Enterprise Manager Plugin for ODI -12.1.3.0 [em]
        - Oracle Data Integrator - Console - 12.1.3.0 [odi]
        - Oracle Data Integrator - Agent - 12.1.3.0 [odi]
        - Oracle Data Integrator – Standalone Collocated Agent – 12.1.3.0 [odi]

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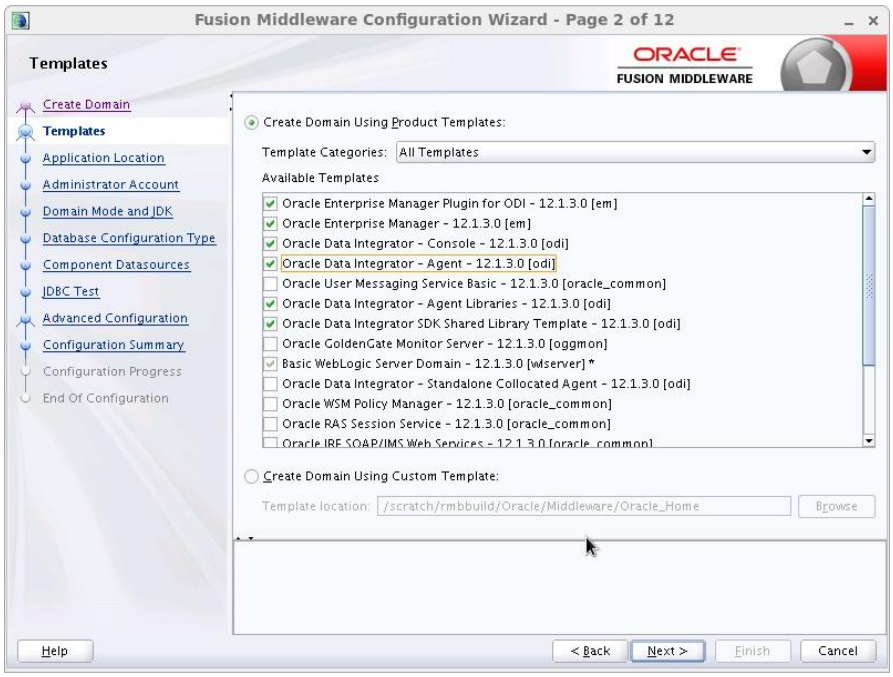

Figure 19: Templates Page

5. Click **Next**. The Application Location page appears. Use this page to specify the full path to the directory where you want to store the applications that are associated with the domain. This location is also referred to as the Application home directory.
6. Enter **<FMW_HOME>/user_projects/applications/ormba_domain** in the **Application location** field.

Figure 20: Application Location Page

7. Click **Next**. The Administrator Account page appears. Use this page to define the default WebLogic Administrator account for the domain, which is used to boot and connect to the domain's Administration Server.

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8. Enter the login user name and password for the WebLogic Administrator account. Please note down the credentials, as this is required while updating the ormba.properties file.

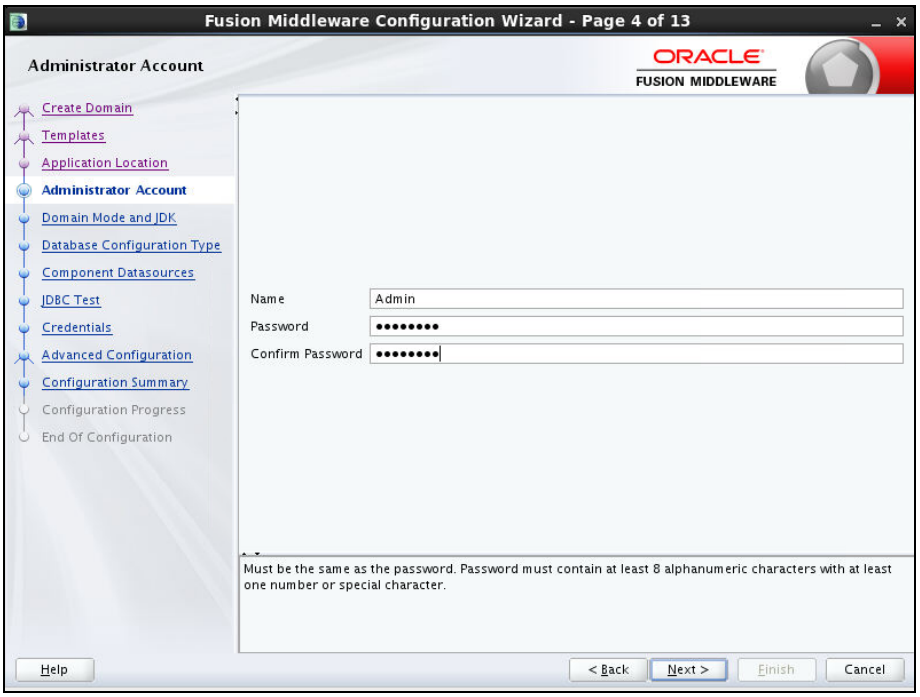

Figure 21: Administrator Account Page

9. Click **Next**. The Domain Mode and JDK page appears. Perform the following steps in the page:
   - Select **Production** in the Domain Mode section. (In this mode, the security configurations are relatively stringent; requiring a username and password to deploy applications and to start the Administration Server.)
   - Select the JDK used to install WebLogic in the application server.

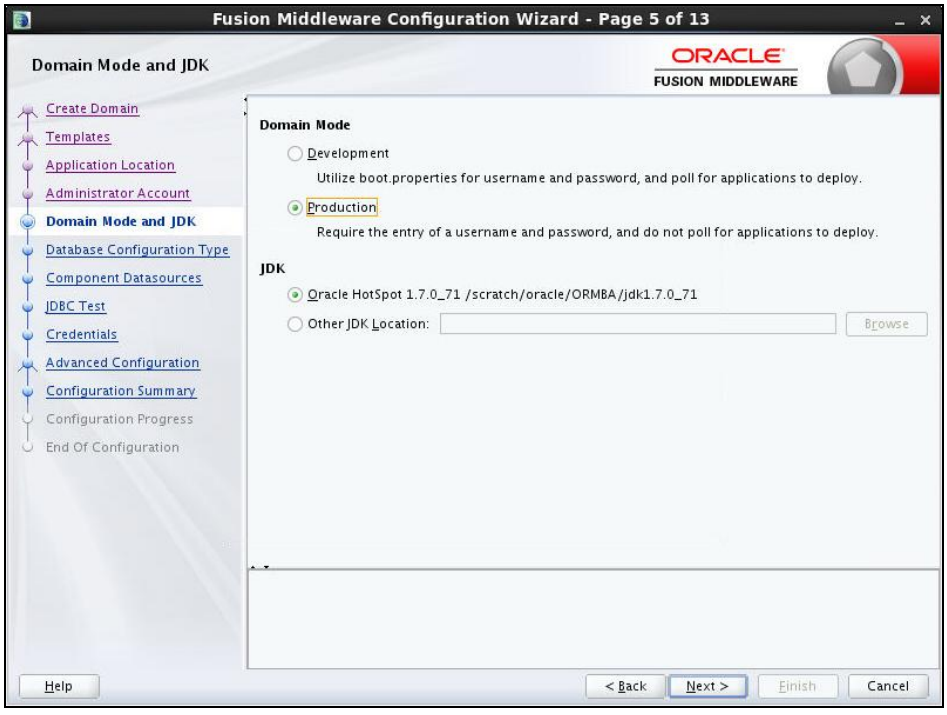

Figure 22: Domain Mode and JDK Page

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10. Click Next. The Database Configuration Type page appears. Use this page to specify the information for connecting to the database to retrieve schema information that is to be populated in the schema fields on the subsequent 'JDBC Component schema' screen. Perform the following steps in the page:

Note: You can skip this step and manually configure each component schema on the next screen (JDBC Component Schema).

- Select **RCU Data**.
- Configure the fields with the connection information specified for the Service Table (STB) component in the Repository Creation Utility (RCU) as shown in the table below:

Field	Value
Driver	Oracle's Driver (Thin) for Service connections; Versions:9.0.1 and later
DBMS/Service	DBMS name/Service name of the target database
Host Name	Name of the Database server
Port	Port number on which DB listens
Schema Owner	ORMBA_STB
Schema Password	Password for ORMBA_STB user

- Click **Get RCU Configuration** to test the connection and retrieve the schema information. The **Connection Result Log** section of the page indicates whether the connection to the database server was established successfully.

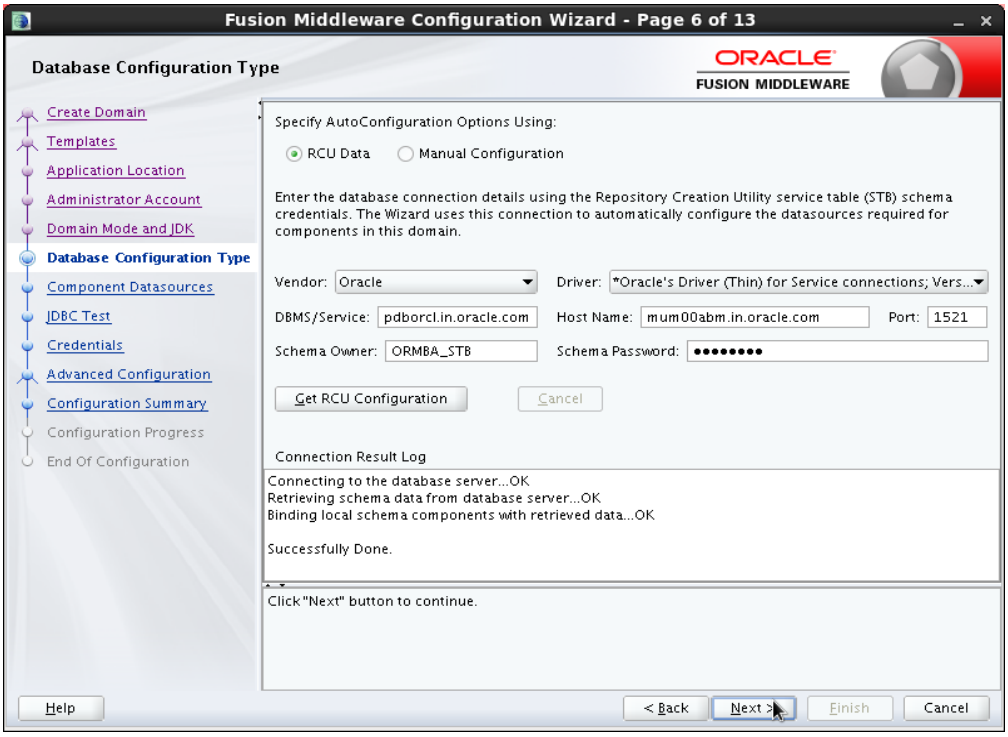

Figure 23: Database Configuration Type Page

Note: Click **Get RCU Configuration** button to retrieve the schema passwords that were specified when you created the schemas via RCU.

11. Click **Next**. The JDBC Component Schema page appears.

- If you had changed the schema passwords from the original passwords set via RCU, you must manually enter the new passwords in the **Schema Password** field.
- Verify the details to see if they are correct for all schemas.

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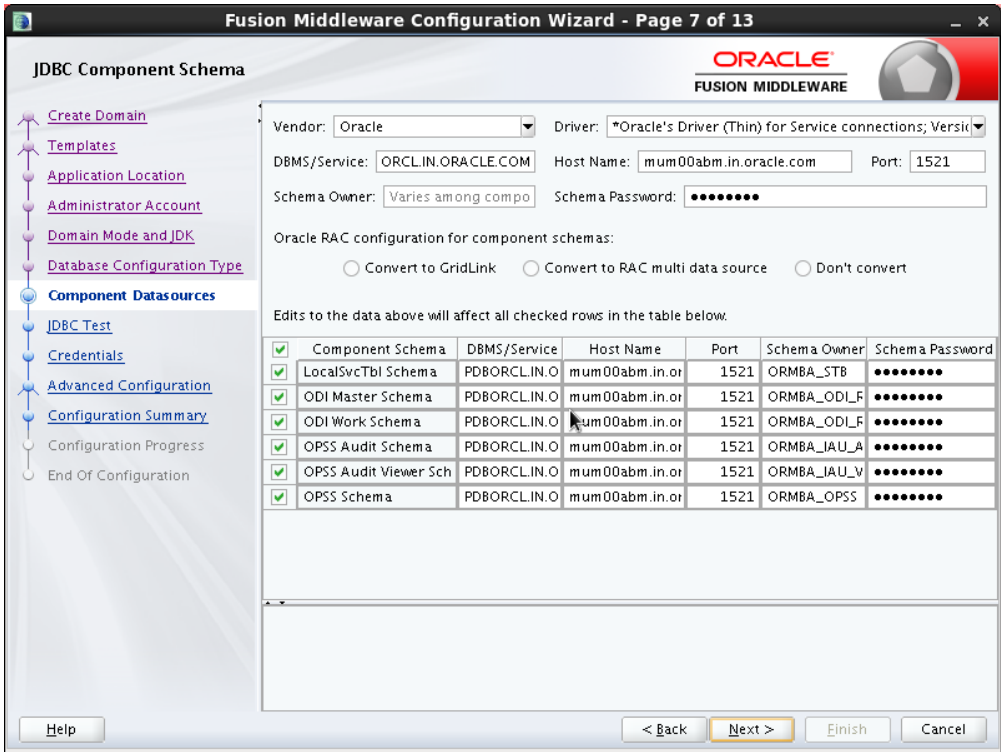

Figure 24: JDBC Component Schema Page

12. Click **Next**. The JDBC Component Schema Test page appears and the wizard tests the configuration for each schema.

    - The **Status** column indicates the result of the test. A green tick (✔) indicates success.
    - The **Connection Result Log** section displays details of the JDBC connection.
    - If you want to test only selected schemas, select the required schemas and click **Test Selected Connections**. You can view the result in the **Connection Result Log** section.

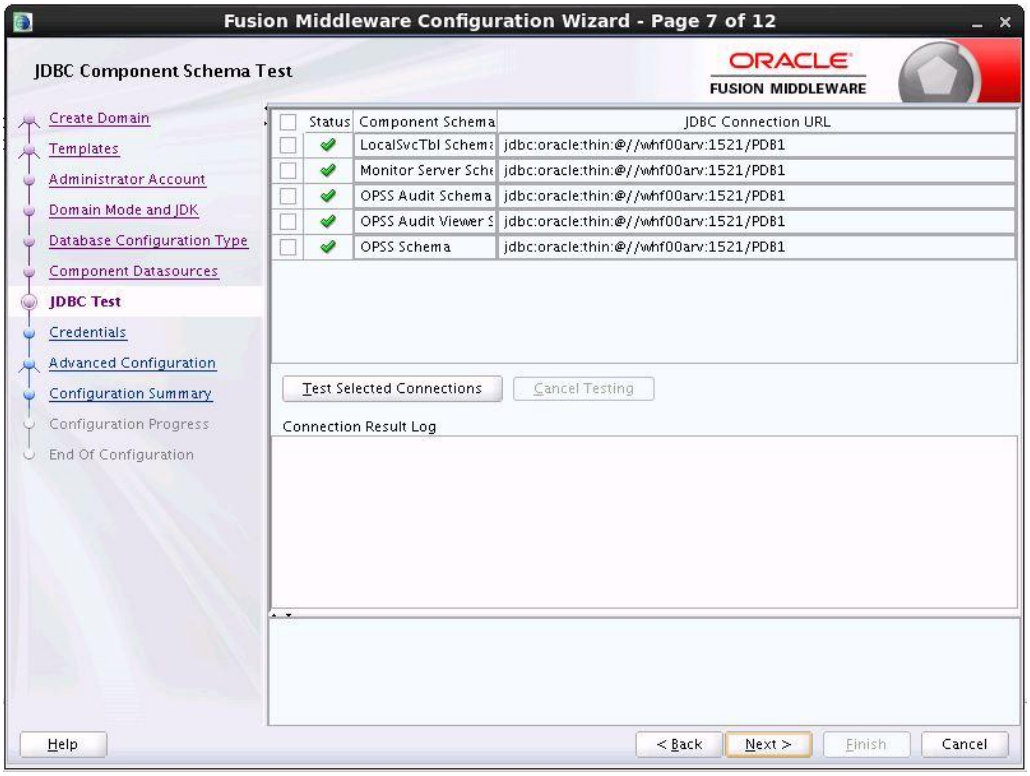

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Figure 25: JDBC Component Schema Test Page

13. Click **Next**. The Credentials page appears. Use this page to configure credentials for each key in the domain. Perform the following steps in the page:
    - Configure the user name and password of ODI Admin User (Key Name = SUPERVISOR).

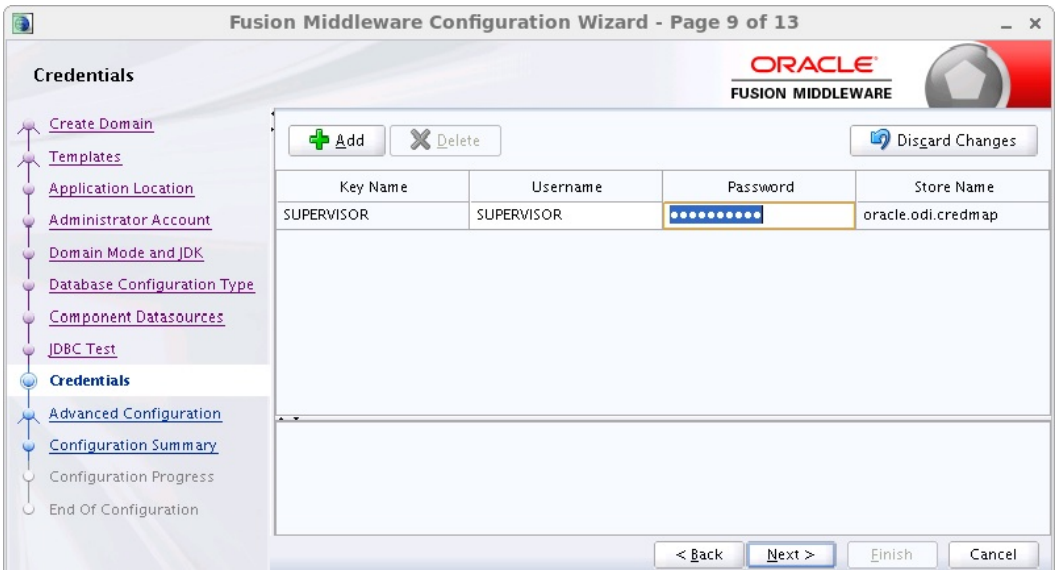

Figure 26: Credentials Page

14. Click **Next**. The Advanced Configuration page appears. Use this page to perform the advanced configurations against selected categories.
15. Select **Administration Server**, **Node Manager**, and **Managed Servers, Clusters and Coherence**. Based on the categories selected, the respective configuration screens are listed in the left pane of the Configuration Wizard.

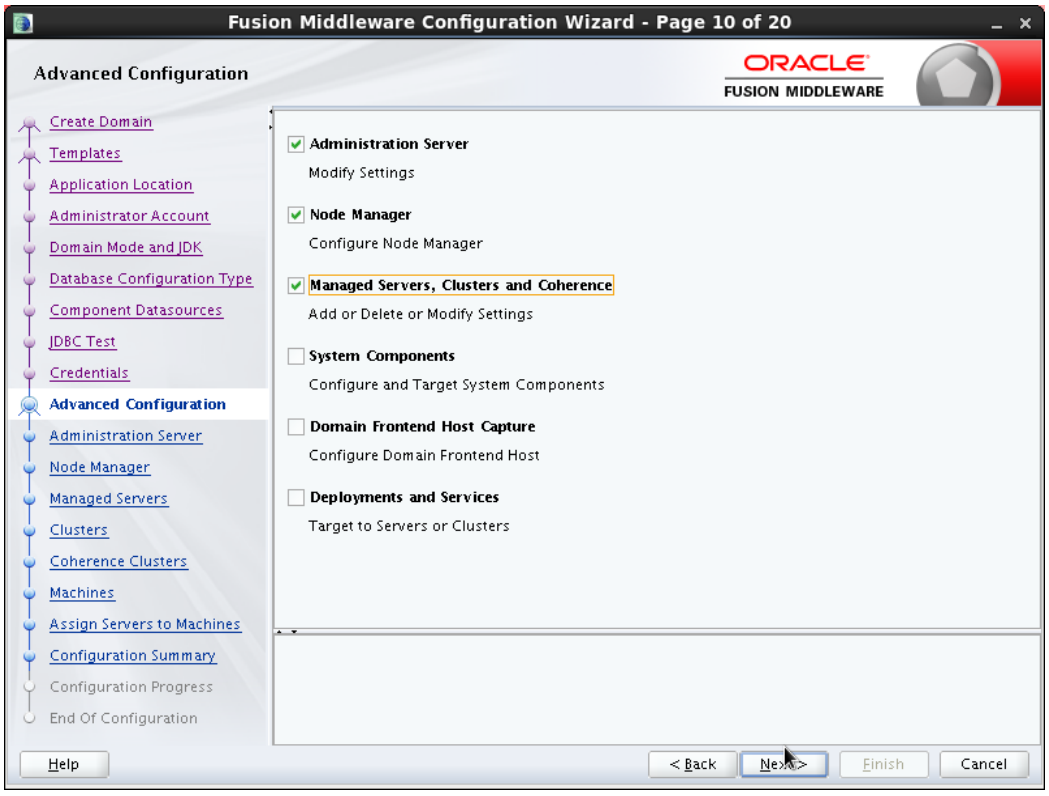

Figure 27: Advanced Configuration Page

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16. Click **Next**. The Administration Server page appears. Use this page to configure the central point from where you can manage the domain. Enter the details as shown in the table below:

Field	Value
Server Name	AdminServer
Listen Address	All Local Addresses
Listen Port	The default value is **7001** for the Administration Server. The valid listen port range is from 1 to 65535.

Please note down the Listen Address and Listen Port values given here, as this will be required n while updating ormba.properties file.

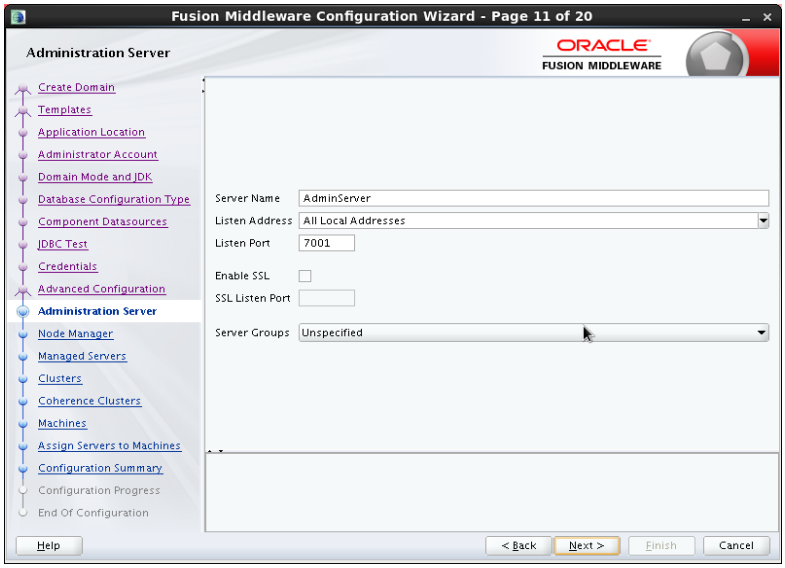

Figure 28: Administration Server Page

17. Click **Next**. The Node Manager page appears. Use this page to configure the Node Manager's credentials and home directory.

- Select **Per Domain Default Location** under **Node Manager Type** section.
- In the **Node Manager Credentials** section, enter the username and password for starting the Node Manager.

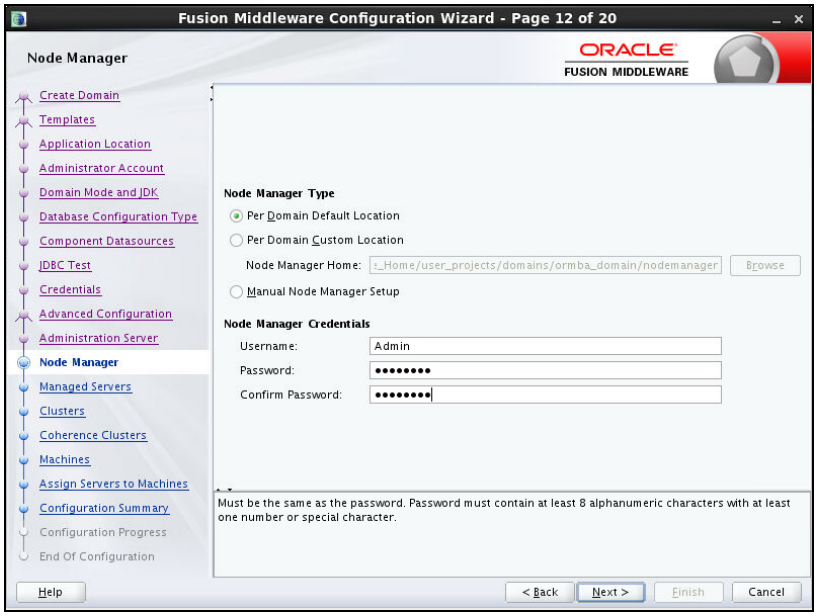

Figure 29: Node Manager Page

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18. Click **Next**. The Managed Servers page appears. Use this page to add **ODI_server1** for ODI Agent. Perform the following steps:
    - Click **Add**. A new row appears in the grid.
    - In the **Server Name** field, enter **ODI_server1**.
    - In the **Listen Address** field, select the IP Address of the application server node where we are creating the domain. If the required IP address is not available in the list, you can type it in.
    - In the **Listen Port** field, enter **15101**. The valid listen port range is from 1 to 65535.

    Please note down the values of Listen Address and Listen Port configured here, as you need to specify these as values of parameters ormba.repository.agent.host and ormba.repository.agent.port in the ormba.properties file.

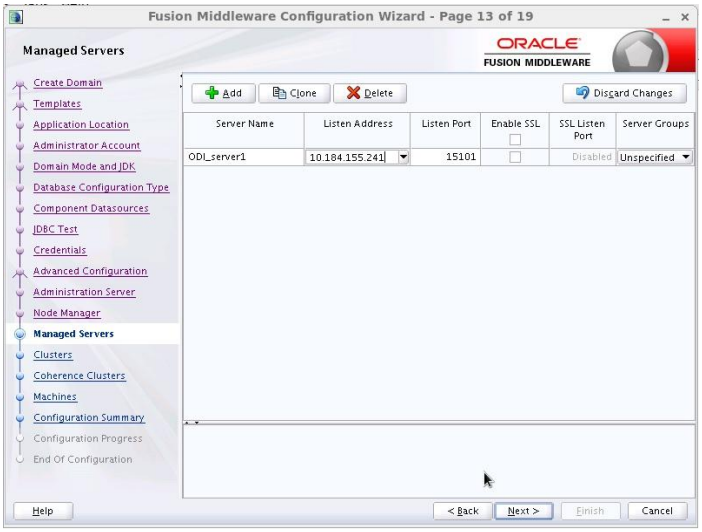

Figure 30: Managed Servers Page

19. Click **Next**. The Clusters page appears. Use this page to create a new cluster. Follow the steps below in the page:
    - Click **Add** and enter a name in the **Cluster Name** field.
    - Leave the **Cluster Address** and **Frontend Host** fields blank.
    - Leave the default value (**0**) in the fields **Frontend HTTP Port** and **Frontend HTTPS**.

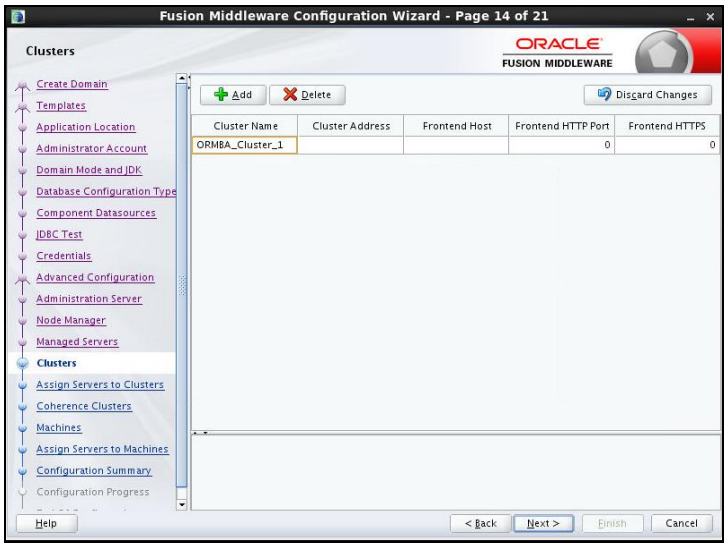

Figure 31: Clusters Page

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20. Click **Next**. The Assign Servers to Clusters page appears. Use this page to assign Managed Servers to Clusters. Perform the steps below on this page:
    - In the **Clusters** section, select the cluster we created in the previous step.
    - Select **ODI_server1** in the **Servers** section and click the right arrow ( ). This moves the managed server from the **Servers** section to **Clusters** section.
21. Click **Next**. The Coherence Clusters page appears. The page lists the coherence cluster associated with the domain.
22. Click **Next**. The Machines page appears. The page displays the default machine configurations.
23. Click **Next**. The Assign Servers to Machines page appears. Use this page to assign the managed server (ODI_server1) to the machine defined in the previous step.
    - In the **Machines** section, select **LocalODIMachine**.
    - Select **ODI_server1** in the **Servers** section and click the right arrow ( ). This moves the managed server from the **Servers** section to the **Machines** section.
24. Click **Next**. The Configuration Summary page appears. The page displays the detailed configuration information of the domain being created.

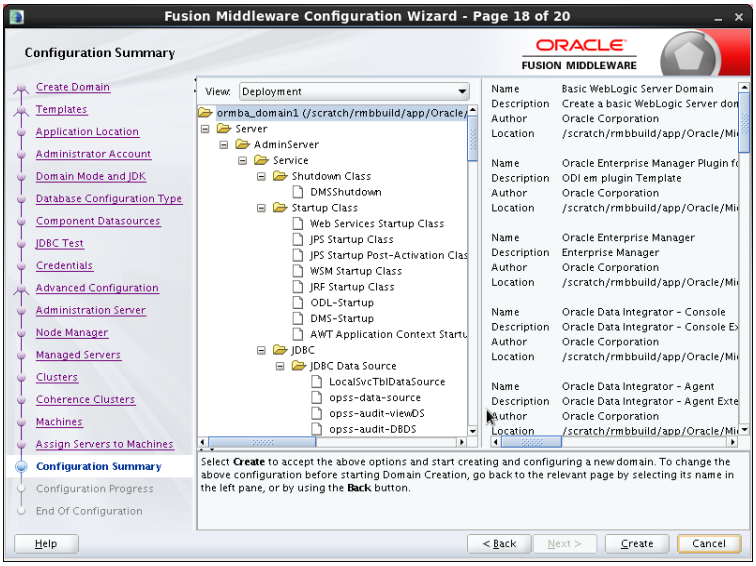

Figure 32: Configuration Summary Page

25. Verify the configuration details and click **Create** to initiate the domain creation. The Configuration Progress page appears showing the progress of domain creation.

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Figure 33: Configuration Progress Page

26. Once the domain creation is completed, the Configuration Success page appears. Note down the information displayed on this page.

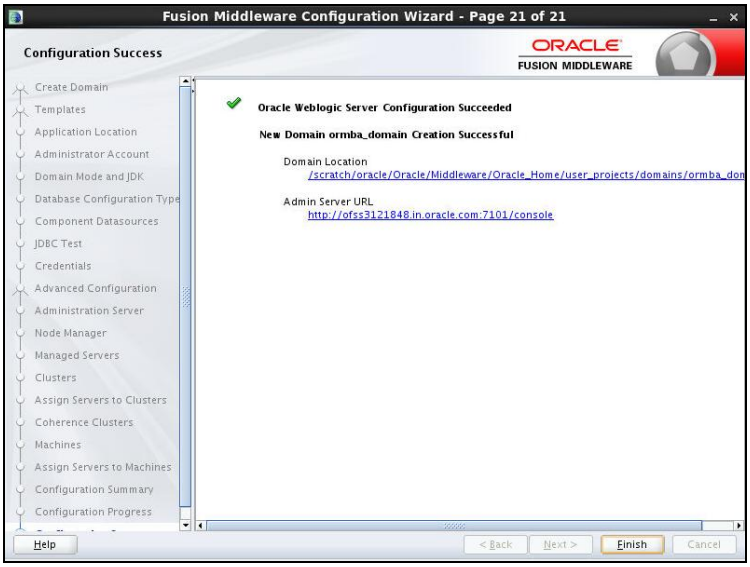

Figure 34: Configuration Success Page

27. Click **Finish** to close the Configuration Wizard.

3.6.1 (Optional) Creating domain for GG Monitor

If you are using Oracle Golden Gate in ONLINE mode, you need to create a separate domain for GG Monitor. To do this, follow the procedure detailed in section 3.6 with the exception in couple of steps listed below:

1. In the Templates page, select the following templates:
    - Oracle Enterprise Manager - 12.1.3.0 [em]
    - Oracle GoldenGate Monitor Server – 12.1.3.0 [oggmon]

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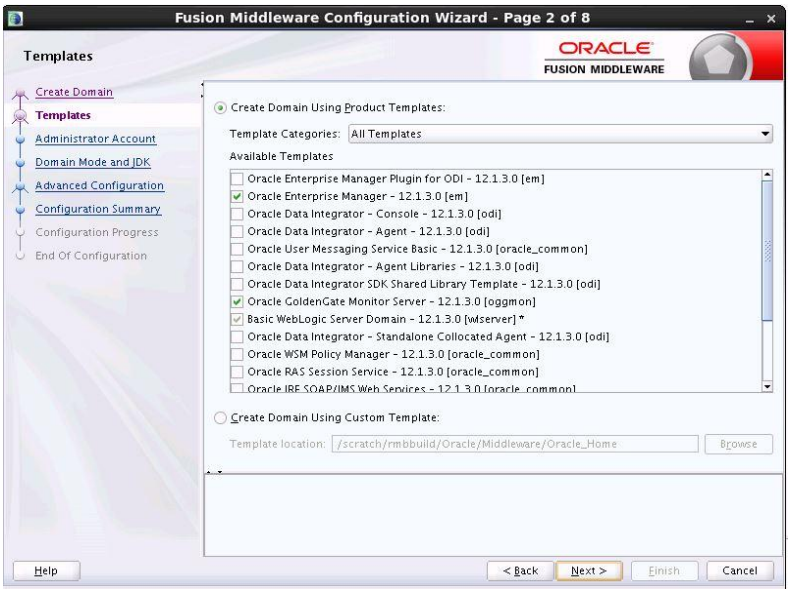

Figure 35: Templates Page

2. In the Credentials page, enter passwords for JMX, KEY, TRUST, and SMTP users.

Figure 36: Credentials Page

3.6.2 Creating the boot.properties File

Once you create the domain, follow the procedure below to create the boot.properties file:

1. Change to the path:
   <FMW_HOME>/user_projects/domains/ormba_domain/
2. Create the following folder structure:
   servers/<Server_Name>/security
3. Create the **boot.properties** file with the following attributes:
   username=<weblogic username>
   password=<weblogic password>
   Note: Use the credentials given in step 8 of section 3.6 of this document.
4. Repeat the previous step to create boot.properties file for each server in the domain (AdminServer and ODI_server1).

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Note: If you do not see the folder structure in the domain initially, start the server and check again. If the folder structure is still not available, manually create the folder structure.

3.6.3 Starting the WebLogic Admin Server

To start the WebLogic admin server, follow the procedure below:

1. Change to the <FMW_HOME>/user_projects/domains/ormba_domain/bin directory.
2. Execute the following command:

   nohup ./startWebLogic.sh > startWLS.log &
3. Check the **startWLS.log** file in the same path to see if it includes the message "The server started in RUNNING mode".
4. Access the Administration Server console using the Administration Server URL (http://<administration server host>:<administration server port>/console). **Note:** Use the Listen Address and Listen Port configured in Step 16 of Creating Weblogic Domains procedure.
5. Log on using the Administrator Account username and password. The Home page appears.

3.6.4 Starting the ODI Managed Server

To start the WebLogic managed server for ODI agent, follow the procedure below:

1. Change to the <FMW_HOME>/user_projects/domains/ormba_domain/bin directory.
2. Execute the following command:

   nohup ./startManagedWebLogic.sh ODI_server1> startManagedWLS.log &
3. Check the **startManagedWLS.log** file in the same path to see if it includes the message "The server started in RUNNING mode".
4. Access the Oracle Enterprise Manager using the Enterprise Manager URL (http://<administration server host>:<administration server port>/em). The Login page appears.

   Note: Use the Listen Address and Listen Port configured in Step 18 of Creating Weblogic Domains procedure.
5. Log on using the administrator account's username and password. The Welcome page appears.
6. Check the **Servers** section to verify if the Administration Server and Managed Server (AdminServer and ODI_server1) are up and running.
7. To verify the ODI Console, log on to http://<administrtation server host>:<administration server port>/odiconsole with SUPERVISOR username and password.

3.6.5 (Optional) Starting Admin Server and Managed Server for GoldenGate Monitor

If you are using Oracle GoldenGate in ONLINE mode, you need to start the WebLogic Admin Server and Managed server for Oracle GoldenGate Monitor also. To do this, follow the procedures in section 3.6.3 and 3.6.4, after replacing the name of Admin Server and Managed Server with the ones configured while creating domain for GG Monitor.

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4. ORMBA Database Component Installation

This section explains how to install the database component of Oracle Revenue Management and Billing Analytics Version 2.2.1.0.0. This section includes the following tasks:

- Creating Database Schemas
- Installing ORMBA Schema
- Post Installation Check

Note: Before proceeding with ORMBA installation, we strongly recommend you to ensure that all prerequisite software are installed successfully.

4.1 Creating Database Schemas

All the schemas will be created in a PDB with a CDB in the Target DB. To create various users and schemas for ORMBA in the target database server, follow the procedure below:

1. Connect to the target PDB as SYS user using SQL * Plus.
2. Create the following table spaces:

Table space	Schema
DWADM_01	Data Warehouse Schema
MDADM_01	Metadata Schema
REP_01	Replication Schema

Note: Ensure that the initial storage size of the table spaces DWADM_01 and REP_01 is greater than or equal to the storage size of table spaces in the source schema. Also, ensure that DWADM_01 table space has an initial storage of 64K.

Eg:

CREATE TABLESPACE DWADM_01 DATAFILE '/scratch/oracle/datafiles/dwadm_01.dbf' SIZE 30G AUTOEXTEND ON NEXT 10240K MAXSIZE UNLIMITED DEFAULT STORAGE (**INITIAL 64K** NEXT 4M) LOGGING ONLINE SEGMENT SPACE MANAGEMENT AUTO;

3. Create database users with default table spaces as listed in the table below:

Users	Table spaces
DWADM	DWADM_01
DWREAD	DWADM_01
MDADM	MDADM_01
DWSTAGE	DWADM_01
(Optional) MODELADM	MDADM_01
RMB1REP (Default Replication Schema)	REP_01

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4.1.1 Providing Grants to ORMBA DB Users

1. Navigate to <TEMPDIR>/ORMBA-V2.2.1.0.0-Database directory, where <TEMPDIR> folder is the location where you have extracted the contents of the Oracle Revenue Management and Billing Analytics V2.2.1.0.0 Database Component package.
2. Open the **UserGrants.sql** file in the folder.
3. Edit the following code snippets in the **UserGrants.sql** file:

   define ODI_REPO=<Master Repository Name>

   where <Master Repository Name> is the value seen in step 8 of section 3.5 of the document. Eg: ORMBA_ODI_REPO
4. Log on to the pluggable database (PDB) in the target database server as **SYS** user.
5. Execute the edited **UserGrants.sql** file in <TEMPDIR>/ORMBA-V2.2.1.0.0-Database folder.
6. Execute the following command using SQL*Plus:

   GRANT READ, WRITE ON DIRECTORY ORMBA_DIR TO MDADM;

4.2 Installing ORMBA Schema

In this section, you will install the following schemas of ORMBA:

- Metadata schema (MDADM)
- Warehouse schema (DWADM)
- ODI master repository schema (created using RCU)
- Replication schema (RMB1REP)
- (Optional) Modeling schema (MODELADM)
- (Optional) Map metadata schema (MAPADM)

Follow the procedure below to create the ORMBA schemas:

1. Change to the <TEMPDIR>/ORMBA-V2.2.1.0.0-Database directory.
2. Open the **InstallSchemas.sql** file to edit the values in following code snippets:

   define RELEASE_PATH=<TEMPDIR/ORMBA-V2.2.1.0.0-Database>

   define SOURCE_SCHEMA = '<Source Data Schema Name>'

   define ODI_REPO =' <ODI Repository Schema name>'

   define STARTDATE= <date of oldest entry in source in dd/mm/yyyy format>

   define ENDDATE= <future date, say 01/01/4000 in dd/mm/yyyy format>

Note: The STARTDATE and ENDDATE values in InstallSchemas.sql are used to create entries in default dimensions.

3. Log on to the pluggable database (PDB) in the target database server with **MDADM** credentials using SQL *Plus.
4. Execute the following command to install the first four schemas: **@ InstallSchemas.sql**.

   Note: Spool the messages to a text file.
5. Verify if all schema objects are created successfully in all schemas. To do this, see section 4.3 of this document.

Note: You can ignore errors that occur during the View Creation, as these errors are due to missing tables that will be created later on.

6. (Optional) If you are using daily rating feature, follow the steps below:

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i. Log on with **RMB1REP** credentials and change to <TEMPDIR>/ORMBA-V2.2.1.0.0-Database/REP directory.

ii. Execute the following scripts available in the REP folder:

a. BD_TXN_LINE_DR_VW.sql

b. BILL_TMP1_DR_VW.sql

7. (Optional) If your source system version is ORMB 2.5.0.1.0, connect to the replication schema RMB1REP and execute the file **Views.sql** from <TEMPDIR>/ORMBA-V2.2.1.0.0-Database/REP folder by following the knowledge base article 2231415.1 in My Oracle Support.

4.3 Post Installation Check

After installing the ORMBA database component, you need to verify and see if the database scripts have applied correctly to the respective schemas. Follow the procedure below for database verification:

1. Change to <TEMPDIR>/ORMBA-V2.2.1.0.0-Database folder.
2. Connect to the database using any SQL client with MDADM credentials. If you are already connected, skip this step.
3. Execute the following command **: set serverout on;**
4. Open the checkDBObjects.sql file in <TEMPDIR>/ORMBA-V2.2.1.0.0-Database folder and edit the ODI Repository Name in the following statement:

   define ODI_REPO='<Master Repository Name>'
5. Execute the following command: **@ checkDBObjects.sql**
6. In case of success, the SQL console displays success messages. Proceed with the installation ONLY if the post installation check is successful.
7. If there are errors, follow section Handling Errors. You can ignore errors related to the optional Modeling schema (MODELADM).

4.3.1 Handling Errors

If an error occurs while installing the schemas, follow the procedure below:

1. Check the output of checkDBObjects.sql to find out the schemas that are not installed successfully.
2. Execute the cleanup script corresponding to the schema (which generated error). The cleanup scripts for each schema is listed below:

Schema	Cleanup Script	Install Script
DWADM	CleanupDWADM.sql	InstallDWADM.sql
MDADM	CleanupMDADM.sql	InstallMDADM.sql
RMB1REP	CleanupREP.sql	InstallREP.sql
MODELADM	CleanUpMODELADM.sql	InstallMODELADM.sql
MAPADM	CleanUpMAPADM.sql	InstallMAPADM.sql

3. Examine the spool file of the schema installation script to check which object creation failed and its cause.
4. Correct the error and execute the corresponding install script after defining the following attributes using SQL *Plus:

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define RELEASE_PATH=<TEMPDIR>/ORMBA-V2.2.1.0.0-Database
define SOURCE_SCHEMA =‘<Source Data Schema Name>’
define ODI_REPO =‘<ODI Repository Schema name> ‘
define STARTDATE=<date of oldest entry in source in dd/mm/yyyy format>
define ENDDATE=<future date, say 01/01/4000 in dd/mm/yyyy format>

5. Follow the Post Installation Check procedure and verify again.

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5. ORMBA Admin Tool Installation

This section describes how to install the admin tool component of Oracle Revenue Management and Billing Analytics.

Admin tool deployment requires a WebLogic domain and a corresponding metadata schema in the WebLogic domain. If you have already created a Weblogic domain as explained in section 3.6 you can deploy the Admin Tool in the same, or else you can create a separate one.

Admin tool installation includes the following steps:

1. Configuring DataSource
2. Deploying Admin Tool EAR
3. Deploying Admin Tool Online Help EAR
4. Configuring Admin Tool Security
5. Logging on to Admin Tool

Note: Before proceeding with the Admin Tool installation, ensure that the WebLogic Admin server is up and running. If not, you can start it by following section 3.6.3.

5.1 Configuring DataSource

For configuring datasource, follow the procedure below:

Note: Check if you have 'Execute' privilege to the shell script and if not provide the privileges.

1. Go to <TEMPDIR>/ORMBA-V2.2.1.0.0-Web/config/datasource folder.
2. Open the **datasource.properties** file and edit the below parameters:

   admin.url=<Weblogic console URL> Eg: t3://localhost:7001

   admin.userName=<weblogic UserName>

   admin.password=<weblogic Password>

   datasource.name=<Any name for the new datasource> Eg: ORMBA_Admin_Connection

   datasource.target=<Weblogic server or cluster on which Admin Tool EAR is to be deployed> Eg: ODI_server1

   datasource.jndiname=ormba-connectionDS

   datasource.url=<Database url> Eg: jdbc:oracle:thin:@server:port/servicename

   datasource.username=MDADM

   datasource.password=<Password for MDADM>

Note: To know more about WebLogic attributes, refer to section 3.6. The parameter values of datasource.name and datasource.jndiname are created during step 3.

3. Execute **configureDS.sh** in the same folder with **<FMW_HOME>/wlserver/server/bin** as argument.
4. Check the log messages of configureDS.sh to see if the execution was successful.
5. Log on to the WebLogic Server Administration console and check if the configured datasource is available under ormba_domain > Services > Data Sources in the Domain Structure pane.

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Figure 37: Domain Structure

5.2 Deploying Admin Tool EAR

For deploying the Admin tool, follow the procedure below:

Note: Check if you have 'Execute' privilege to deploy.sh script and if not provide the privileges.

1. Navigate to <TEMPDIR>/ORMBA-V2.2.1.0.0-Web/admintool folder.
2. Open the deploy_configuration.properties file and edit the following attributes:

   domain.name=**ormba_domain**

   admin.url= <Weblogic console URL> Eg: t3://localhost:7001

   admin.userName= <weblogic username>

   admin.password= <weblogic password>

   target.server= <datasource.target parameter in datasource.properties file> Eg: ODI_server1

   file.location=.

   file.name=ormba-admin.ear

   application.name=ormba-admin

   Note: To know more about WebLogic attributes, refer to section 3.6.
3. Go to <TEMPDIR>/ORMBA-V2.2.1.0.0-Web/admintool folder.
4. Execute **deploy.sh** in application server with **<FMW_HOME>/wlserver/server/bin** as argument.

5.2.1 Post Deployment Verification

To check if the Admin tool EAR is successfully deployed, follow the procedure below:

1. Log on to Enterprise Manager.
2. Go to Application Deployments.
3. Check if **ormba-admin** is available.
4. Try to access ORMBA Administration UI using the URL, http://<hostname>:<port>/ormba where <port> is the Listen Port of the managed server.
5. Log on using WebLogic admin user credentials. If you are able to log on, the deployment was successful.

5.3 Deploying Admin Tool Online Help EAR

For deploying the online help EAR of Admin tool, follow the procedure below:

Note: Check if you have 'Execute' privilege to deploy.sh script and if not provide the privileges.

1. Navigate to <TEMPDIR>/ORMBA-V2.2.0.0.0- Web/admintool folder.
1. Open the deploy_configuration.properties file and edit the following attributes:

   domain.name=ormba_domain

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admin.url=<Weblogic Console URL> Eg: t3://localhost:7001

admin.userName= <Weblogic username>

admin.password=<Weblogic password>

target.server=< datasource.target parameter in datasource.properties file> Eg: ODI_server1

file.location=.

file.name= ormba-help.ear

application.name=ormba-help

Note: To know more about WebLogic attributes, refer to section 3.6.

2. Go to <TEMPDIR>/ORMBA-V2.2.0.0.0-Web/admintool folder.
3. Execute **deploy.sh** in application server with **<FMW_HOME>/wlserver/server/bin** as argument.

5.3.1 Post Deployment Verification

To check if the Admin tool Help EAR is successfully deployed, follow the procedure below:

1. Log on to Enterprise Manager.
2. Go to Application Deployments.
3. Check if **ormba-help** is available.
4. Log on to ORMBA Administration UI and open a page.
5. Click the Help icon () available near the page title. If you are able to view the Help page, the deployment was successful.

5.4 Configuring Admin Tool Security

To configure Admin Tool security, follow the procedure below:

1. Log on to Enterprise Manager.
2. Right-click on the **ormba_domain** node. A shortcut menu appears.
3. Select the **Application Roles** option from the Security sub-menu. The Application Roles page appears on the right pane.
4. Select the **ormba-admin** option from the Application Stripe list and click the **Search** button near the **Role Name** field.
5. Select the required role and then click **Edit**.
6. Add members to the application role and then click **OK**.

Note: For more information on how to create users and roles in Admin tool, refer to the *Oracle Revenue Management and Billing Analytics Security Guide*.

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5.5 Logging on to Admin Tool

To verify if the Admin Tool installation is successful, follow the procedure below:

1. Access the ORMBA Admin Tool using the URL format: http://<hostname>:<portno>/ormba

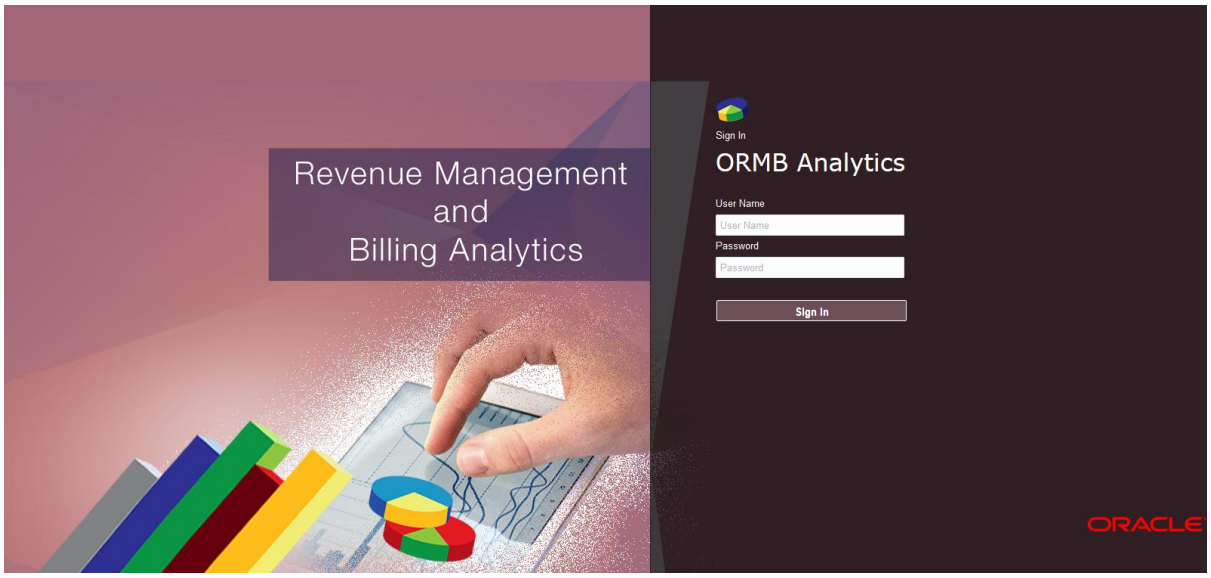

Figure 38: Admin Tool Login Page

2. Enter your login credentials and click Sign In.

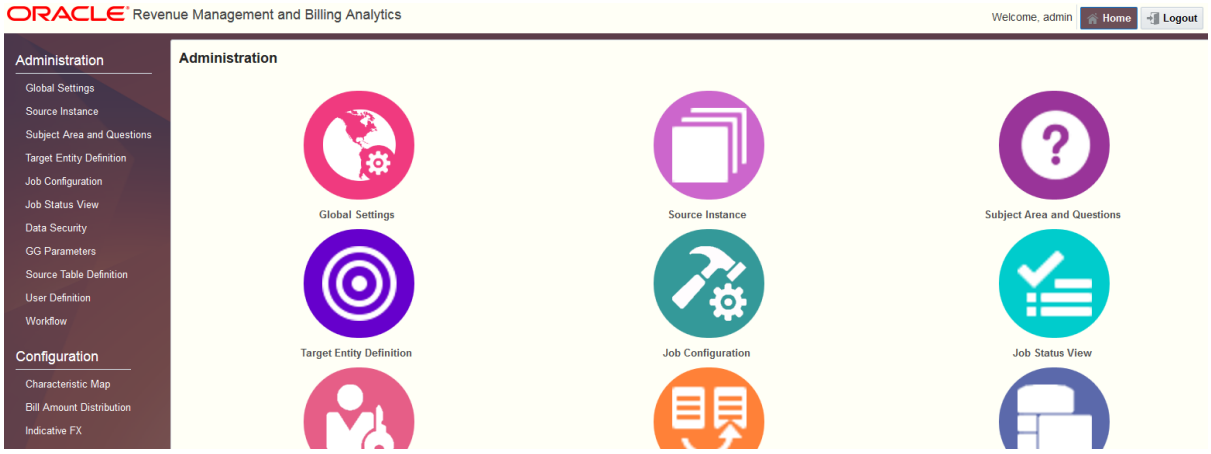

Figure 39: Admin Tool Home Page

3. You will be able to navigate to any of the pages by clicking on the tiles on the right pane, or selecting from the menu list on the left pane.

5.6 Admin Tool Initial Settings

Some of the initial configurations of ORMBA Admin Tool are available as part of installation. However, before proceeding with ETL component installation, you need to update the value of parameter “Date from which all ETL jobs will be configured to start the initial load”. To know more about ORMBA Admin Tool initial settings, see section 6.4.4 of this document.

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6. ORMBA ETL Component Installation

This section describes how to install the ETL component of Oracle Revenue Management and Billing Analytics. The section includes the following topics:

6.1 Encrypting Passwords

You need to encrypt the following passwords:

- Golden Gate Container User Password
- RMB01SRC User Password
- MDADM User Password
- (optional) Source OS Password

To encrypt the passwords, follow the procedure below:

1. Go to Oracle GoldenGate Home on the source container DB and log on to GG client using the command:

   ./ggsci

2. Type the command below to encrypt the password of GoldenGate Container User:

   encrypt password <password of golden gate user>, encryptkey DEFAULT

3. Edit the ormba.properties file and update the below attributes:
   - ormba.source.container.journal.username : <golden gate user name>
   - ormba.source.container.journal.password : <Password of golden gate user>
   - ormba.source.container.journal.encryptpassword : <Encrypted password of golden gate container user>

   To know more about updating ormba.properties file, see section 6.2.

4. Execute the following command to encrypt the password of RMB01SRC user.

   encrypt password <password of RMB01SRC user>, encryptkey DEFAULT

5. Note down the encrypted password of above command and specify as value of below parameter while updating the ormba.properties file in section 6.2.
   - **ormba.replication.gg.src.ggpass** = <encrypted password of RMB01SRC user>

6. Execute the following command to encrypt the password:

   encrypt password <password of MDADM user>, encryptkey DEFAULT

7. Note down the encrypted password of above command and specify as value of below parameter while updating the ormba.properties file in section 6.2.
   - **ormba.replication.gg.trg.ggpass** = <encrypted password of MDADM user>

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6.1.1 (Optional) Encrypting Source OS Password

During initial load, if you are transferring data via FTP, ODI requires encrypted password of source application server. To encrypt the password, follow the procedure below:

1. Change to <FMW_HOME>/user_projects/domains/ormba_domain/bin directory.
2. Execute the following command:

   ./encode.sh -INSTANCE=OracleDIAgent1 "Password" <source OS password>
3. Note the encrypted password and copy this as value of **ormba.replication.gg.source.ospassword** attribute in ormba.properties file in section 6.2.

6.2 Editing ORMBA.PROPERTIES File

1. Change to the <TEMPDIR>/ORMBA-V2.2.1.0.0-ETL/bin directory, where <TEMPDIR> folder is the location where you have extracted the contents of the media pack.
2. Open the **ormba.properties** file and edit the attributes as directed below:

Note: If your source system operating system is Windows, while updating the path variables, replace '\' by '\\'.

ormba source configuration

This section of properties file indicates the attributes necessary for source system (ORMB) configuration.

Attribute	Description
ormba.source.connectstring	Connect string to ORMB schema (source) <hostname>:<port>/<servicename>
ormba.source.schema.name	ORMB schema name <schemaname>
ormba.source.container.connectstring	Connect string to ORMB schema (source) in Container DB <hostname>:<port>/<servicename>
ormba.source.container.sid	SID or Service name of source schema in Container DB
ormba.source.container.journal.username	<common Golden Gate user in CDB>
ormba.source.container.journal.password	< Password of common golden gate user in CDB>
ormba.source.container.journal.encryptpassword	<Encrypted password of golden gate user> (refer section 6.1)
ormba.source.journal.username	<Golden Gate username in Source system>
ormba.source.journal.password	<Password of Golden Gate user in Source system>
ormba.source.database.is11g	false
ormba.source.schema.drillbackURL	<Drill back URL to ORMB application>

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	https://<hostname>:<port>/ouaf
ormba.source.schema.instancenumber	Default value = 1 Edit only in case of multiple source instances.

Configuration for logging into the ODI repository

Attribute	Description
ormba.repository.URL	URL to connect to ODI Repository jdbc:oracle:thin:@//<hostname>:<port>>/<servicename>
ormba.repository.driver	oracle.jdbc.OracleDriver
ormba.repository.odi.adminuser	Default value = SUPERVISOR (Configured in step 13 of section 3.5)
ormba.repository.odi.adminpassword	SUPERVISOR user password (Configured in step 13 of section 3.5)

The user and password of the ODI Master database schema

Attribute	Description
ormba.repository.master.database.user	ODI Repository user name (Configured in step 8 of section 3.5)
ormba.repository.master.database.password	ODI Repository password (Configured in step 11 of section 3.5)

#Work Repository Name

Attribute	Description
ormba.repository.workrepository	Default value = WORK_REPO

Configuration to connect to the METADATA schema

Attribute	Description
ormba.metadata.database.user	Default value = MDADM
ormba.metadata.database.password	Password of MDADM schema

Configuration to connect to the TARGET DB schema

Attribute	Description
ormba.target.database.user	Default value = DWADM
ormba.target.database.password	Password of DWADM schema

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ormba.target.database.workschema	Default value = DWSTAGE

#ODI Agent details

Attribute	Description
ormba.repository.agent.logicalname	Default value = OracleDIAgent
ormba.repository.agent.host	Host name of the server where ODI is installed
ormba.repository.agent.port	ODI Listen Port (Configured in step 18 of section)
ormba.repository.agent.physicalname	Default value = OracleDIAgent

#Replication configurations

Attribute	Description
ormba.replication.gg.mode.online	Default value = false (To execute GG in ONLINE mode, change the parameter value to **true**>
ormba.replication.gg.src.mgr.port	Default value = NULL (If GG is in ONLINE mode, enter the Source GG Manager Port)
ormba.replication.gg.src.host	Host name of Source DB
ormba.replication.gg.src.home	GG_HOME of Source DB
ormba.replication.gg.src.port	Source DB Port
ormba.replication.gg.src.ggpass	Encrypted Password of RMB01SRC user in Source DB
ormba.replication.gg.src.rmi.port	Default value = NULL (If GG is in ONLINE mode, enter the port given while configuring JAgent in source)
ormba.replication.gg.src.jmxuser	Default value = NULL (If GG is in ONLINE mode, enter the Source JMX user name)
ormba.replication.gg.src.jmxpswd	Default value = NULL (If GG is in ONLINE mode, enter the password given while starting JAgent)
ormba.replication.db.src.sid	SID of Source DB
ormba.replication.db.src.home	ORACLE_HOME of Source DB
ormba.replication.gg.trg.mgr.port	Default value = NULL (If GG is in ONLINE mode, enter the GG Manager port in Target)

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ormba.replication.gg.trg.host	Host name of Target database
ormba.replication.gg.trg.home	GG_HOME of Target database
ormba.replication.gg.trg.port	Target database Port
ormba.replication.gg.trg.ggpass	Encrypted Password of GG Schema in Target DB
ormba.replication.gg.trg.rmi.port	Default value = NULL (If GG is in ONLINE mode, enter the port given while configuring JAgent in target)
ormba.replication.gg.trg.jmxuser	Default value = NULL (If GG is in ONLINE mode, enter the Target JMX username) Oggmajmxusr
ormba.replication.gg.trg.jmxpswd	Default value = NULL (If GG is in ONLINE mode, enter the password given while starting JAgent)
ormba.replication.db.trg.sid	SID of Target DB
ormba.replication.db.trg.home	ORACLE_HOME of Target DB
ormba.ggscript.location	Path where GG scripts will be available after executing importData.sh script
ormba.repository.connectionPool.initialPoolSize	Default value = 0
ormba.repository.connectionPool.maxPoolSize	Default value = 100000000
ormba.repository.connectionPool.minPoolSize	Default value = 100
ormba.repository.connectionPool.inactiveConnectionTimeout	Default value = 600
ormba.repository.connectionPool.statementCacheSize	Default value = 100
ormba.project.path	Default value = <TEMPDIR>/ORMBA-V2.2.1.0.0-ETL/ELTComps

#Initial Load Properties

Attribute	**Description**
ormba.replication.gg.source.osuser	Default value = NULL (If ormba.replication.gg.use.data.dump.file.yn =Y enter Source server OS user name)
ormba.replication.gg.source.ospassword	Default value = NULL (If ormba.replication.gg.use.data.dump.file.yn =Y enter the encrypted password of Source OS)
ormba.replication.gg.source.ftpHost	Default value = NULL (If ormba.replication.gg.use.data.dump.file.yn =Y

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	enter the host name of Source server)
ormba.replication.gg.local.data.pump.dir	Value of ORMBA_DIR directory in Target DB
ormba.replication.gg.remote.data.pump.dir	Default value = NULL (If ormba.replication.gg.use.data.dump.file.yn =Y enter the value of ORMBA_DIR directory in Source DB)
ormba.replication.gg.use.data.dump.file.yn	Default value = N N indicates initial load over Network Link Y indicates initial load over FTP

3. Save the file after updating the attributes.

6.2.1 Validating ORMBA.PROPERTIES File

Before proceeding with validation of ORMBA.PROPERTIES file, you need to create a new agent under Physical architecture. To do this, follow the procedure below:

1. Log on to ODI and navigate to the Topology tab.
2. Under Physical architecture, create a new agent named **OracleDIAgent**.
3. Edit the following properties of the agent:
   - Host: <your machine name>
   - Port: <the port where managed server is up and running>

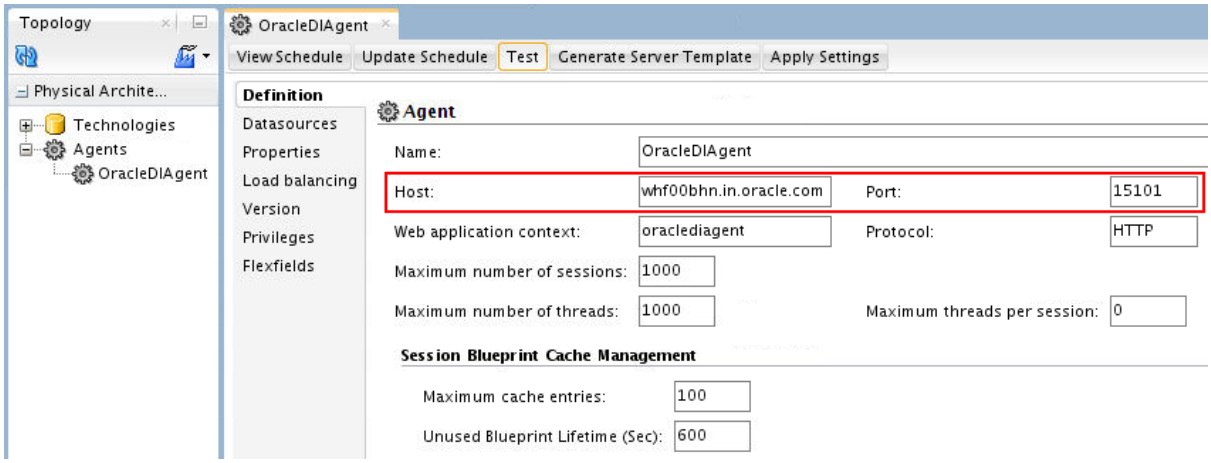

Figure 40: Creating OracleDIAgent

4. Save the configuration.
5. Under Logical architecture, create a new agent named **OracleDIAgent**.
6. Against each Context (Global and RMB1), select the Physical Agent from the drop-down list.
7. Save the configuration and restart the managed server.
8. Once the managed server is up and running, test the agent by clicking the **Test** button in ODI Agent tab.

You can now proceed with validation of properties configured in ORMBA.PROPERTIES file by following the procedure below:

1. Navigate to the location: **<TEMPDIR>/ORMBA-V2.2.1.0.0-ETL/bin**, where <TEMPDIR> is the folder where you have extracted the media pack.

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Note: Before proceeding with the procedure below, ensure that you have 'Execute' privileges for the script runPropertyValidator.sh and the managed server (ODI_server1) is up and running.

2. Execute the script **runPropertyValidator.sh** from the terminal. This validates the properties in the file.
3. If validation of a property fails, it prints a 'failed' message with the property key(s) that failed during testing. You can then edit the ORMBA.PROPERTIES file to correct the errors and proceed with the validation again.
4. Repeat the procedure until you see no 'failed' messages.

Important: DO NOT proceed with ETL installation without resolving the errors in the ORMBA.PROPERTIES file validation, except those mentioned above.

6.3 Installing the ETL Component

ETL Component installation involves execution of nine shell scripts in the order given below:

1. importETLComps.sh
2. addInstance.sh
3. (Optional) createGoldenGateTopology.sh
4. configureInstance.sh
5. configureGG.sh
6. checkConfiguration.sh
7. createSourceModel.sh
8. importData.sh
9. createReplicationModel.sh

You can find the above shell scripts in the location: **<TEMPDIR>/ORMBA-V2.2.1.0.0-ETL/bin**, where <TEMPDIR> is the folder where you have extracted the media pack. Execution of each of these scripts is explained in detail in the following sections.

Note: While executing the scripts, you may see errors from ODI indicating, "Table or view does not exist" in the console. You can ignore these warnings.

Before proceeding with the procedure below, ensure that:

- 'Execute' privileges for each of the above shell scripts
- Managed server (ODI_server1) is up and running

6.3.1 importETLComps.sh

Purpose: This shell script imports all necessary ETL Components to the installation environment.

Prerequisite: Check if the **ormba.project.path** parameter in ormba.properties file is correctly configured, and the path (<TEMPDIR>/ORMBA-V2.2.1.0.0-ETL/ETLComps) contains the ETL components for import from the media pack.

Success Criterion: Log on to ODI IDE using the login credentials and verify the existence of below items:

- Two projects –
    - ORMB Business Intelligence
    - RMBBI_Automation
- Two models –
    - Metadata

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- Target

- Three global variables –
  - BM_EXTRACT_START_DATE
  - BM_HIGH_DATE
  - NO_GRPS

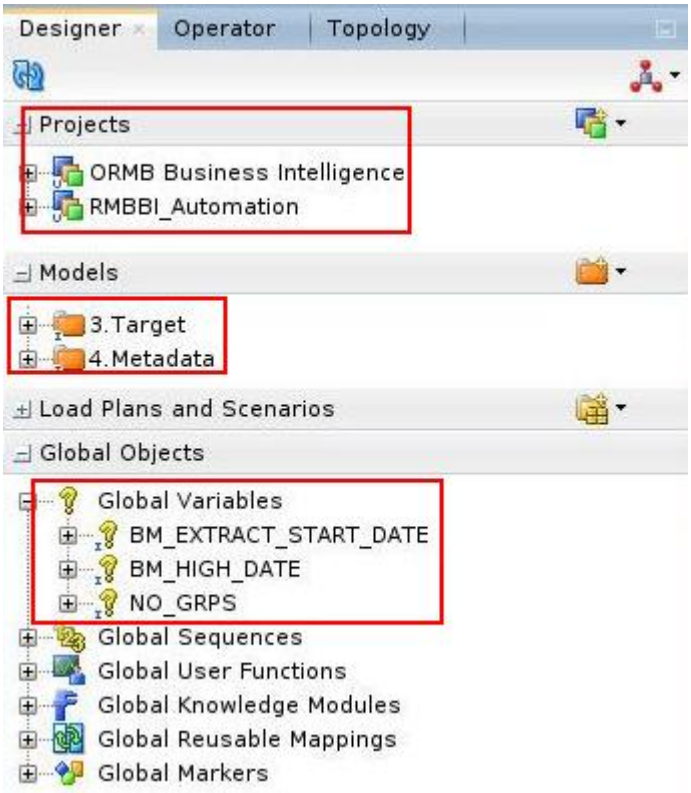

Figure 41: Verify Projects, Models and Global Variables in ODI

Errors: In case of errors, rectify the error and re-run the script. For example, if the project or model gets partially imported due to insufficient disk space, log on to ODI Studio, delete the partial import and re run the script.

6.3.2 addInstance.sh

Purpose: This shell script adds a new source instance to ORMBA.

Prerequisite: Check if you have correctly configured the source database connection string, GG user schema details and the agent configuration details in ormba.properties file.

Success Criterion:

- Check if the topology and agent creation was successful by checking the log.
- Check if the necessary background configurations in ODI are created for the new instance.
  - Oracle Topology
    - Physical – 3 new data servers (eg: BI, RMB1, RMB1_CDB)
    - Logical – 9

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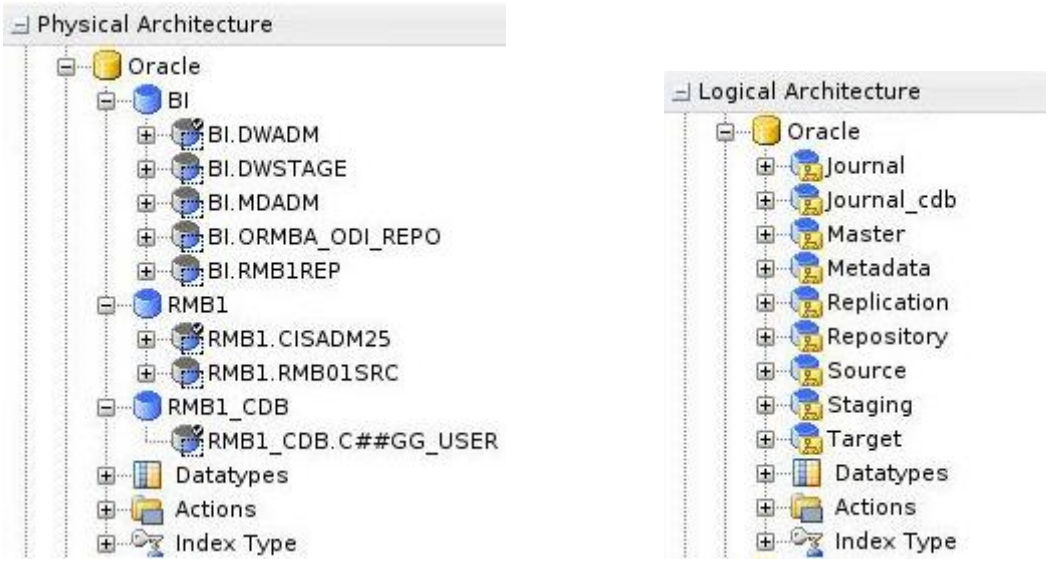

- ODI Logical and Physical Agent – **OracleDIAgent**
- Context – **RMB1**

- DB Link – **RMB1_LINK** in MDADM schema

Note: Validate the public database link named **RMB<instance_num>_LINK** created in the MDADM schema. If it is incorrect, correct the link before you proceed with the next step. This link is created based on the source connect string provided in the ormba.properties file. You can verify this by connecting to MDADM schema via SQL Plus and executing the query: **select * from dba_db_links;**

- Check if data is added to BM_PROD_INSTANCE in MDADM schema.

Errors: In case of errors, check the logs to identify the issue. Rectify the issue and re-run the script after deleting the items.

Note: If you update topology attributes like username or password, delete the topology from ODI Studio and re-run the addInstance.sh script.

6.3.3 (Optional) createGoldenGateTopology.sh

Purpose: This shell script adds the Oracle GoldenGate topology to the ODI. Execute this script only if GoldenGate is set to run in ONLINE mode. If not, skip the execution of this script.

Prerequisites:

- Check if GoldenGate and JAgent are correctly configured, and both are up and running.
- Check if GoldenGate is set to run on ONLINE mode. To do this, open the ormba.properties file and see if the value of ormba.replication.gg.mode.online attribute is set to TRUE.

Success Criterion: Check if the following are created:

- Two new Data Servers are created under Oracle GoldenGate Topology.
  - Source
  - Staging
- Two logical schemas are generated in Logical Architecture →Technologies →Oracle GoldenGate.

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- CAPTURE
- REPLICAT

Errors: If you update topology attributes, delete the topology from ODI Studio and re-run this shell script.

For example, if you have incorrectly specified the GoldenGate path in the Source GoldenGate topology, it results in an error while testing the topology. To rectify the issue, delete the **Source** data server under Oracle GoldenGate Technology in ODI studio, and re run the script after correcting the path in ormba.properties file.

6.3.4 configureInstance.sh

Purpose: This shell script checks if the newly added source or target instance exists and configures the metadata for the newly added product instance.

Success Criterion: Check the log for success message.

Errors: If the log shows errors like "Failed to verify the instance existence", check the logs of **addInstance.sh** for any errors. If you fail to find any error in the log, open the ODI Operator tab and check the BM_PKG_ADD_INSTANCE package's execution steps. In the error scenario, fix the issue and re run the package or the **addInstance.sh** script.

6.3.5 configureGG.sh

Purpose: This shell script adds GoldenGate configuration to the metadata table.

Prerequisite: Check if you have correctly configured the Source and Target GoldenGate Home and Port details in ormba.properties file.

Success Criterion: Check the log for success message.

Errors: In case of errors, check the log to identify the issue. Rectify the issue and re-run the script.

6.3.6 checkConfiguration.sh

Purpose: This shell script checks if the instance is configured correctly. If metadata information is missing for any of the source tables, this script also adds the missing metadata.

Success Criterion: Check the log for success message.

Errors: In case of errors, check the log to identify the issue. Rectify the issue and re-run the script.

6.3.7 createSourceModel.sh

Purpose: This shell script creates source model in ODI for the tables that are to be replicated (replicate flag is set to **N**). It also sets the Initial Load Data Transfer options for B1_SYNC_MODEL procedure.

Success Criterion: Log on to ODI and navigate to Designer tab > Models folder > Source folder and check if **ten** models are created as shown in the image below.

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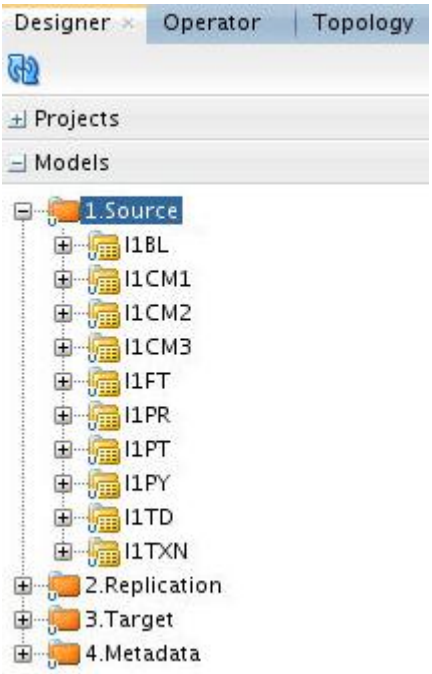

Figure 42: Verify Models under Source in ODI

Errors: In case of errors, check the log to identify the issue. Rectify the issue and re-run the script.

6.3.8 importData.sh

Purpose: This shell script performs the initial load of data, generates GoldenGate scripts and initiates the GoldenGate process in source and target to enable replication. The execution of this script takes some time and you can track the execution of the script in the ODI operator tab.

Prerequisite: Before proceeding with execution of importData.sh, please check if values of following attributes are configured in ORMBA Admin Tool:

- In Global Settings page:
  - Date from which all ETL jobs will be configured to start the initial load
  - Threshold value to consider for parallel loading for high volume table
  - Enable Partition
  - Date from which all ETL jobs will be configured to end the initial load
- In Source Instance page:
  - Date from which all ETL jobs for the specific product instance will be configured to start the initial load
  - Date from which all ETL jobs for the specific product instance will be configured to end the initial load
  - Total number of groups, used as maximum number of sub partitions
  - Interval for month wise partition in replication tables

Note: If you have defined the above date attributes in both Global Settings and Source Instance pages, the one in Source Instance page overrides that in Global Settings page.

Execution Command: importData.sh MODEL=ALL

Note: If GG is running in OFFLINE mode, after successful execution of this script, you need to follow the instructions in section 6.3.8.1.

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Success Criterion 1: Connect to the replication schema as RMB1REP user and check whether the data is available on the tables. In case of errors, check the log to identify the failed model (for e.g. I1BL) and then perform the necessary corrective action. To clean the imported data (if any) and resume the process, execute the following statement:

importData.sh MODEL=ALL CLEAN=I1BL

Note: If more than one models fail, update the above command to give the failed model names separated by comma (,).

(Optional) Success Criterion 2: Verify the GoldenGate extracts and replicats using the procedure below:

Note: This criterion is applicable only if Oracle GoldenGate is in ONLINE mode. If OGG is in OFFLINE mode, follow procedure in section 6.3.8.1.

1. Log on to the Source machine, move to GG installation home, and access GG client using the command:

   ./ggsci
2. Execute the command **info all** to check if all extracts are in RUNNING mode.
3. Log on to the Target machine, access GG client using the command:

   ./ggsci
4. Execute the command **info all** to check if all replicats are in RUNNING mode.
5. If a model fails to import, identify the failed model (for e.g. I1BL) and perform the necessary corrective action.
6. Resume the process without cleaning the imported data by executing the following statement:

   importData.sh MODEL=ALL CLEANSERVICE=I1BL

Note: If more than one models fail, update the above command to give the failed model names separated by comma (,).

Enable Archive Log: You need to enable Archive Log mode in the source database using the commands below:

SHUTDOWN IMMEDIATE

STARTUP MOUNT

ALTER DATABASE ARCHIVELOG;

ALTER DATABASE OPEN;

ALTER PLUGGABLE DATABASE ALL OPEN;

6.3.8.1 Packaging and Execution of GG scripts in OFFLINE mode

If you have Oracle Golden Gate installed in OFFLINE mode, follow the procedure below:

1. Change to <TEMPDIR>/ORMBA-V2.2.1.0.0-ETL/bin directory.
2. Copy the **packGGScripts.sh** file to the <ormba.repository.ggscript.location> path and execute the shell. This creates **source.tar** and **target.tar** files in the same path.
3. Copy the **source.tar** to the source database machine and **target.tar** to the target database machine.
4. Copy the **copy.sh** file from <TEMPDIR>/ORMBA-V2.2.1.0.0-ETL/bin directory to both source and target database machines.

Note: In source machine, copy the copy.sh file to the same path where source.tar file exists, whereas in target machine, copy it to the same path where target.tar file exists.

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5. Edit the **copy.sh** file in both source and target machines and specify the following parameters:

   GG_HOME=<GG home directory>

   Destination= <source in Source DB and target in Target DB>

6. Execute **copy.sh** file.
7. After the successful execution of copy.sh, log on to the Source machine, move to GG installation home, and access GG client using the command:

   ./**ggsci**

8. Execute the **execute_src_cmds.oby** file using the command:

   OBEY <ormba.repository.ggscript.location>/execute_src_cmds.oby

9. Log on to the Target machine, move to GG installation home, and access GG client using the command:

   ./ggsci

10. Execute the **execute_trg_cmds.oby** file using the command:

    OBEY ormba.repository.ggscript.location/execute_trg_cmds.oby

11. After executing the OBY files, check whether all replicats and extracts are running and if not, check for errors in **ggserr.log** and fix the issues.

Note: You can use the above-mentioned consolidated **oby** file only in case of installation.

6.3.9 createReplicationModel.sh

Purpose: This shell script creates the replication model in ODI.

Success Criterion: Log on to ODI and verify the existence of replication model, REP_VIEWS.

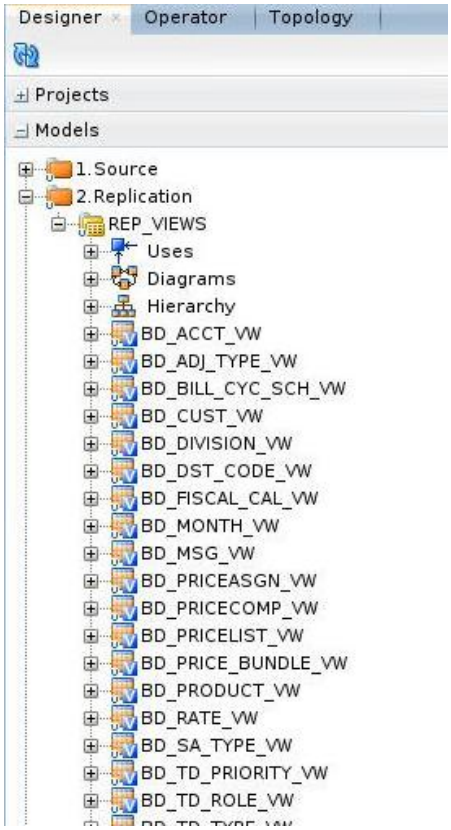

Figure 43: Check REP_VIEWS in ODI

Errors: In case of errors, check the log to identify the issue. Rectify the issue and re-run the script.

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6.4 Post Installation Tasks

After ETL installation, follow the tasks below:

6.4.1 Verifying ETL Component Installation

1. Change to <TEMPDIR>/ORMBA-V2.2.1.0.0-Database/
2. Connect to the database using any SQL client with **MDADM** credentials.
3. Execute the following command : **set serverout on**
4. Execute the following command: **@ checkReplication.sql**
5. If the verification is successful, the SQL console displays success messages. In case of errors, check the ETL installation log to identify the model that failed. You can fix the issues and re-run the script to verify.

Note: Proceed with the installation ONLY if the post installation check is successful.

6.4.2 Post Installation Scripts

After ETL installation, follow the procedure below:

1. Connect to DWADM schema using SQL *Plus.
2. Open the **postInstallationDWADM.sql** file in <TEMPDIR>/ORMBA-V2.2.1.0.0-Database folder.
3. Edit the below statement to include the release path.

   define RELEASE_PATH=<TEMPDIR>/ORMBA-V2.2.1.0.0-Database
4. Execute postInstallationDWADM.sql.
5. Exit from DWADM schema.
6. Connect to MDADM schema using SQL *Plus.
7. Open the postInstallationScript.sql file in <TEMPDIR>/ORMBA-V2.2.1.0.0-Database folder.
8. Edit the below statements to include the release path and ODI Repository Name.

   define RELEASE_PATH=<TEMPDIR>/ORMBA-V2.2.1.0.0-Database

   define ODI_REPO= '<Master Repository Name>'
9. Execute the following command : **set serverout on**
10. Execute the following command: **@ postInstallationScript.sql**
11. Exit from SQL *Plus.

6.4.3 Checking Invalid Objects in ORMBA Schema

Follow the procedure below to verify invalid objects in MDADM, DWADM, RMB1REP, DWSTAGE, MODELADM and ODI Repository.

1. Change to <TEMPDIR>/ORMBA-V2.2.1.0.0-Database/
2. Connect to the database using any SQL client with **MDADM** credentials.
3. Execute the following command : **set serverout on;**
4. Open **CheckInvalidObjects.sql** file and edit the below statement to include the ODI Repository Name.

   define ODI_REPO='<Master Repository Name>'
5. Execute the following command: **@ CheckInvalidObjects.sql**

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6. If the verification is successful, the SQL console displays success messages. This indicates that the ORMBA installation until this point is successful.
7. In case of errors, check the **user_objects** table of each schema to identify the issue. You can fix the issues and re-run the script to verify.

Note: Proceed with the installation ONLY if the post installation check is successful.

6.4.4 ORMBA Admin Tool Settings

Log on to ORMBA Admin tool and navigate to the pages listed below as and set the corresponding attributes.

Note: Some of the attributes listed here are optional or implementation-specific.

Page	Attribute
Global Settings	• Language • Corporate Currency, used in dashboards for cross divisional analysis • Average value for a transaction in corporate currency - used in unrealized revenue computation • Enable modeling feature • Enable data level security in dashboards • Date from which all ETL jobs will be configured to end the initial load
Target Entity Definition	• (Optional) Check whether 'Characteristic Entity' is available for the entities that requires Characteristic Map configuration. If not, update the appropriate Characteristic Entity for the target entity. • (Optional) Need to update User Extension Procedure and User Extension Procedure (Post Job) against a target entity, if required.
Job Configuration	• (Optional) Need to update User Extension Procedure and User Extension Procedure (Post Job) against a target entity, if required.

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Page	Attribute
Source Instance	• (Optional) Characteristic of Distribution ID to be used for type of charge (e.g.:- fee, tax etc) • (Optional) Characteristic values corresponding to the bill charges • (Optional) Characteristic values corresponding to the tax charges • Date from which all ETL jobs for the specific product instance will be configured to start the initial load • Identifier for parent child relationship in Customer Hierarchy • Service Quantities to be Excluded from Modelling • Date from which all ETL jobs for the specific product instance will be configured to end the initial load • Currency conversion algorithm to be used. (Need to change if the source installation is using a different currency conversion algorithm)
Data Security	• Need to define security configurations. 'Enable data level security in dashboards' global setting is configured as 'Y'. Please refer the Functional Overview document for the details.
Characteristic Map	• (Optional) Need to create characteristic map definitions for required target entities. Please refer the Functional Overview document for the details.
Bill Amount Distribution	• (Optional) Need to create Bill Amount Distribution definitions if required. Please refer the Functional Overview document for the details.
Indicative FX	• Need to define the indicative exchange rates from all possible currencies in source instance to corporate currency. Please refer the Functional Overview document for the details. **Note:** Without this configuration, the ETL jobs will fail.

6.4.1 Loading Data to Warehouse

Once ETL installation is complete, the data from source system is available in the replication layer. To move data from the replication layer to the data warehouse, you need to execute ETL jobs that are available in ODI.

To execute the ETL jobs, execute the package BM_RUN_ALL available in the path: OrmbBusinessIntelligence > Configuration > Scheduler.

Note: You can use an external scheduler or ODI scheduler for executing this package.

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7. ORMBA Dashboard Installation

This section describes how to install the dashboard component of Oracle Revenue Management and Billing Analytics. It includes the following topics:

7.1 Updating DB Connection Properties in RPD

The RPD file available within the Dashboard component holds the metadata for OBIEE. As part of installation, you need to update the database connection details in this RPD file by following the procedure below:

1. Open the Oracle BI Administrator Tool from your local Windows machine.
2. In the OBI Administrator Tool, navigate to <TEMPDIR>/ORMBA-V2.2.1.0.0-Dashboards/RPD folder and open the **ORMBAv2.2.1.0.0.rpd** file in offline mode.
3. When prompted, enter the Repository Password available in the **ReadMe.txt** file in the **RPD** folder. This opens the RPD as shown in the image below:

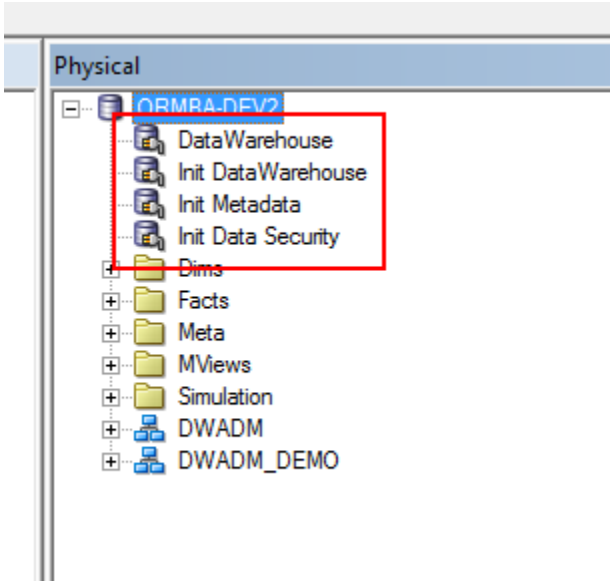

Figure 44: Oracle BI Administrator Tool

4. In the Physical pane, double-click the **DataWarehouse** connection pool under the ORMBA-DEV2 node. The Connection Pool – DataWarehouse window appears as shown below:

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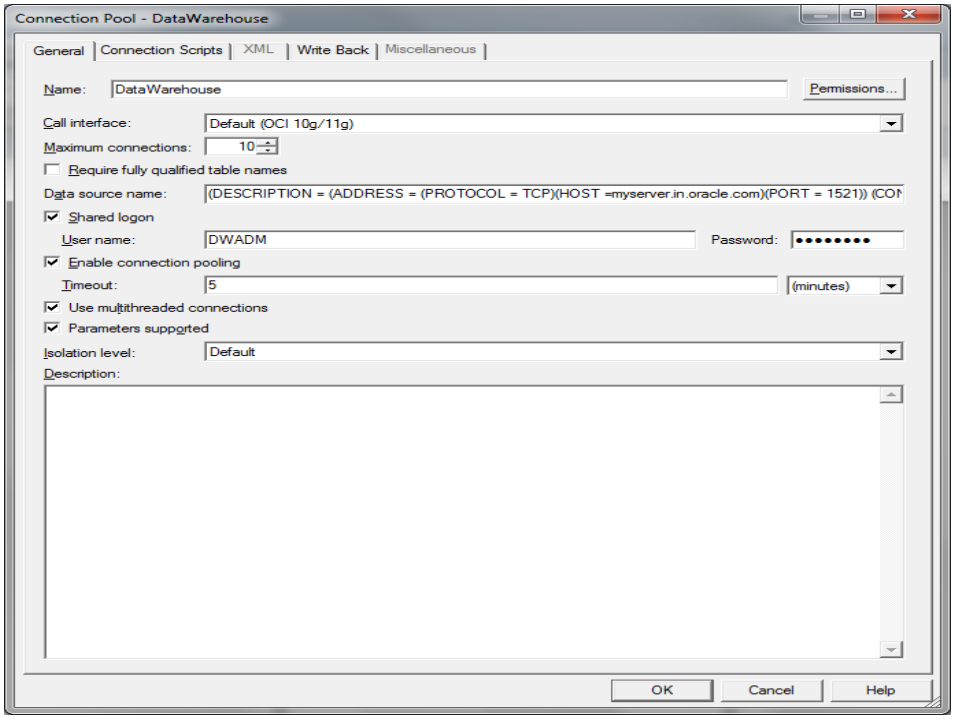

Figure 45: Connection Pool – DataWarehouse Window

5. Update the connection details to the DWADM schema.
    - Update the connection properties in the **Data source name** field. For example, (DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST =mum00abn.in.oracle.com)(PORT = 1521)) (CONNECT_DATA = (SERVICE_NAME =pdborcl)))
    - Update the DWADM schema password in the Password field.
6. Repeat steps 4 and 5 to update the connection details to DWADM schema in **Init Data Warehouse** connection pool.
7. Repeat steps 4 and 5 to update the connection details to MDADM schema in **Init Metadata** and **Init Data Security** connection pools.
8. Save the changes made to the **ORMBAv2.2.1.0.0.rpd** file.
9. Use the updated ORMBAv2.2.1.0.0.rpd file to deploy on OBIEE server.

7.2 Configuring the Default Corporate Currency

To configure corporate currency as the default currency for Analyses, follow the procedure below. You need to do this whenever the corporate currency is changed.

1. Open the **currencies.xml** file from the <BI_ORACLE_HOME>/bi/bifoundation/web/display directory, where <BI_ORACLE_HOME> is the location of Oracle instance within the OBIEE installation folder in the presentation server.
2. Search for **int:wrhs** string (located towards the top of the file).
3. Change the symbol and format of the currency within the **int:wrhs** tag with the corporate currency details as shown in the image below.

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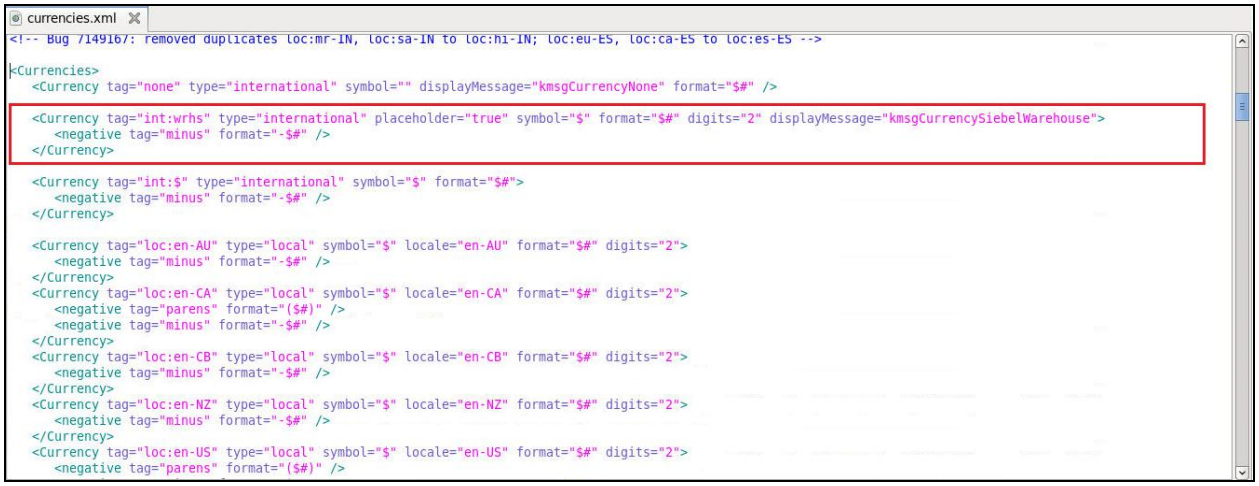

Figure 46: Connection Pool – DataWarehouse Window

4. Save the modified **currencies.xml** file.

7.3 Importing Skins and Deploying in WebLogic

The Dashboard Component of media pack contains custom styles and skins for ORMBA dashboards. Perform the steps below to copy those custom styles and skins to respective OBIEE directory for custom files and deploy them in OBIEE WebLogic Server.

7.3.1 Deploying analyticsRes.war

1. Go to Enterprise Manager Console (<hostname>:<port>/em) in the presentation server and log on with administrator credentials.
2. Under Target Navigation, go to Weblogic Domain > bi > bi_cluster.
3. Click on the Deployments tile on the left pane.
4. Click on the lock icon () and select **Lock & Edit** option to open a new session.
5. Under the Deployments section, select Deployment > Deploy option. This opens the application deployment wizard.

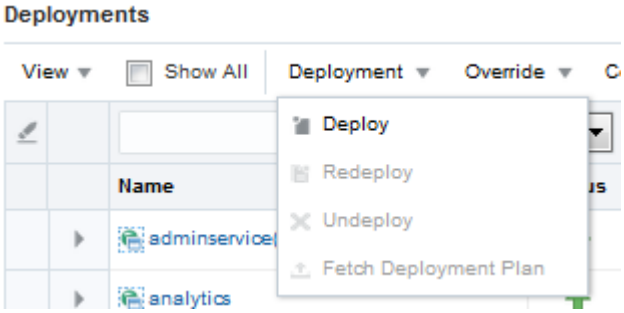

Figure 47: Deploy Option

6. Under the 'Archive or Exploded Directory' section, click Browse and select the analyticsRes.war file in the folder: <TEMPDIR>/ORMBA-V2.2.1.0.0-Dashboards/PRESENTATION_COMPONENT.
7. Select the first option under Deployment Plan and Deployment Type sections as shown in the image below.

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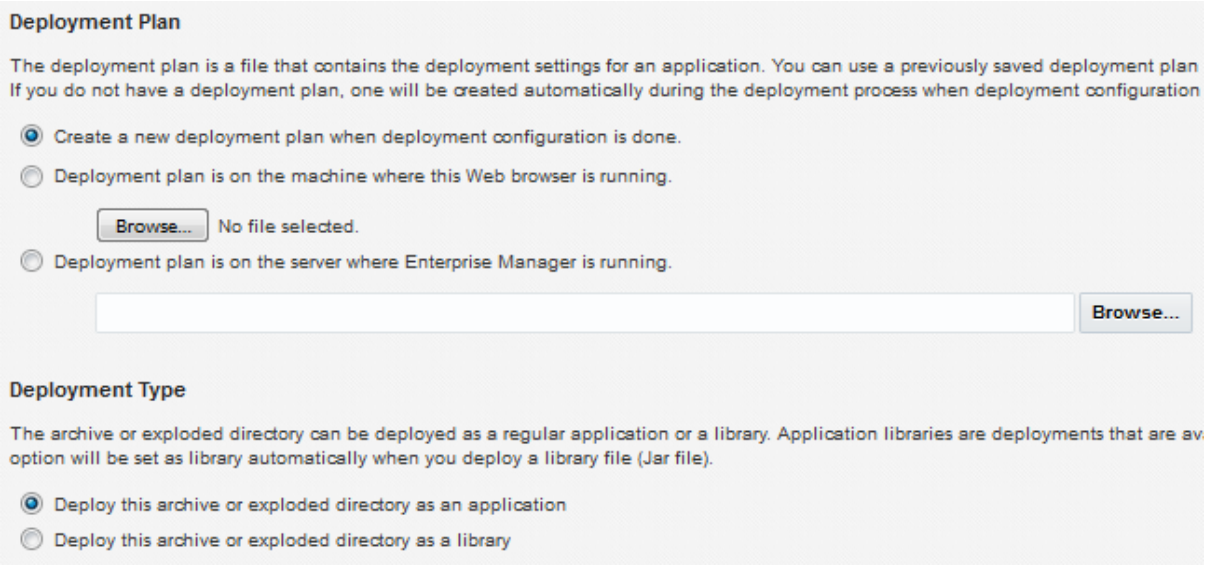

Figure 48: Deployment Plan and Deployment Type

8. Click Next.
9. Select **bi_cluster** and within it, select **All configured Servers in this cluster** option.
10. Click Next.
11. Click Next again and move to the last step of the wizard.
12. Click Deploy to deploy the application. If deployed successfully, you will see the Deployment Succeeded pop-up.
13. Click Close and close the pop-up window. This takes you to the deployments list page.
14. Click on the lock icon ( ) and select **Activate Changes** option so that the deployment changes are effective.
15. From the Deployments list, select **analyticsRes** and click Control > Start > Servicing all requests to start the application. The state of the application now changes to Active.

7.3.2 Deploying bicustom.ear

1. Navigate to <TEMPDIR>/ORMBA-V2.2.1.0.0-Dashboards/PRESENTATION_COMPONENT folder and copy the file **bicustom.ear** to the following path:

   <OBIEE_HOME>/user_projects/domains/bi/bidata/components/OBIPS

Note: <OBIEE_HOME> is the path where FMW version 12.2.1.0.0 is installed.

2. Log on to Enterprise Manager and navigate to Target Navigation > Weblogic Domain > bi > bi_cluster.
3. Click on the Deployments tile.
4. Click on the lock icon ( ) and select **Lock & Edit** option to open a new session.
5. Under the Deployments section, select Deployment > Deploy option. This opens the application deployment wizard.
6. Under the 'Archive or Exploded Directory' section, select the **Archive or exploded directory is on the server where Enterprise Manager is running** option.
7. Enter the path: **<OBIEE_HOME>/user_projects/domains/bi/bidata/components/OBIPS** and click **Browse**.
8. Select **bicustom.ear** and click OK.

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9. Click Next.
10. Select **bi_cluster** and within it, select **All configured Servers in this cluster** option.
11. Click Next.
12. Under Distribution section, select **Install and start application (servicing all requests)** option and under Other Options section, select:
    - Against **Application Source Accessibility**, select 'Make the application accessible from the source location that it will be deployed on. You must ensure that each target can reach the location.'
    - Against **Deployment Plan Source Accessibility**, select 'Make the deployment plan accessible from the source location that it will be deployed on. You must ensure that each target can reach the location.'
13. Click Next.
14. Click Deploy to deploy the application. If deployed successfully, you will see the Deployment Succeeded pop-up.
15. Click Close and close the pop-up window. This takes you to the deployments list page.
16. Click on the lock icon () and select **Activate Changes** option to apply the changes to deployment settings done.

7.3.3 Updating Default Skin / Theme

You need to update the default skin or theme applicable for ORMBA Dashboards. To do this, follow the procedure below:

1. In the presentation server, move to the path:

   <OBIEE_HOME>/user_projects/domains/bi/config/fmwconfig/biconfig/OBIPS
2. Open the file instanceconfig.xml and find the <UI> tag.
3. Edit the <DefaultSkin> and <DefaultStyle> tags as shown:

   <DefaultSkin>Theme1</DefaultSkin>

   <DefaultStyle>Theme1</DefaultStyle>
4. Edit the <Security> tag to add the following:

   <HttpOnlyCookies>false</HttpOnlyCookies>

   <CookiePath>/</CookiePath>
5. Save the file.

7.4 Deploying the BAR File

1. In the presentation server, move to the path: <OBIEE_HOME>/oracle_common/common/bin in the terminal.
2. Run the shell **./wlst.sh**. This opens the WebLogic Server Administration Scripting Shell.

Note: Check to see if you have 'Execute' privilege for wlst.sh and if not, provide the privileges.

3. Run the command below:

   importServiceInstance('<OBIEE_HOME>/user_projects/domains/bi','ssi','<TEMPDIR>/ORMBA-V2.2.1.0.0-Dashboards/BAR/ssi.bar')

Note: Replace the values for <OBIEE_HOME> and <TEMPDIR> in the above command.

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4. Wait for a few minutes for the import to complete. Once done, the terminal returns to the shell with 'Successfully imported' message.
5. Enter **exit()** to quit the shell.
6. Restart OBIEE server using the stop and start shell scripts available at the path: <OBIEE_HOME>/user_projects/domains/bi/bitools/bin
   - Run **./stop.sh** to stop the server (if not already running), and
   - Run **./start.sh** to start the server again

7.5 Deploying the RPD File

For deploying RPD, follow the procedure below:

1. Open a terminal in the presentation server.
2. Move to the folder: <OBIEE_HOME>/user_projects/domains/bi/bitools/bin
3. Run the command below after replacing <adminUser> with the respective BI Administrator username:

   sh data-model-cmd.sh uploadrpd -I <TEMPDIR>/ORMBA-V2.2.1.0.0-Dashboards/RPD/ORMBAv2.2.1.0.0.rpd -SI ssi -U <adminUser>

   Note: The RPD file referred here is the one updated to change the data source, as explained in section 7.1.

4. When prompted, enter the RPD password and WebLogic Admin user's password.

   Note: You can find the RPD password in the ReadMe.txt file within the RPD folder.

5. Wait for a few minutes and you will see the 'RPD upload completed successfully' message.

7.6 Importing ORMBA Home Page

1. Open a terminal in the presentation server.
2. Copy the file **bieehome.htm** from the folder <TEMPDIR>/ORMBA-V2.2.1.0.0-Dashboards/PRESENTATION_COMPONENT to the folder: <OBIEE_HOME>/bi/bifoundation/web/msgdb/pages/bieehome
3. Restart OBIEE server using the stop and start shell scripts available at the path: <OBIEE_HOME>/user_projects/domains/bi/bitools/bin.
   - Run **./stop.sh** to stop the server (if not already running), and
   - Run **./start.sh** to start the server again.

7.7 Configuring Security

Dashboard security is implemented through Application Roles created using the Weblogic for ORMBA Dashboards. Each user is assigned an application role, based on which their access to dashboards is defined. It is also possible to configure permissions within the dashboards.

The application roles can be either pre-defined or custom.

You need to create the pre-defined roles in WebLogic. Once the roles are created, you need to create users and map them to the required application roles. To know more about this, see the ORMBA Security Guide.

In addition to the pre-defined roles, you can also create custom roles. To know more about creating custom roles, follow the instructions in the ORMBA Admin Guide.

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8. (Optional) ORMBA Modeling Configuration

If you have opted for simulation or modeling, you need to perform the following additional tasks:

- Installing Modeling Schema
- Deploying Modeling Service
- Setting Modeling Parameters
- Deploying Apply Back Service

8.1 Installing Modeling Schema

If you have opted for Simulation, you need to create and install one more Schema - **MODELADM**.

To install MODELADM schema, follow the procedure below:

1. Log on to the pluggable database (PDB) in the target database server as **SYS** user using SQL *Plus.
2. Navigate to <TEMPDIR>/ORMBA-V2.2.1.0.0-Database/MODELADM folder and execute the **MODELADM_Grants.sql** file.
3. Connect to the database using any SQL client (such as SQL*Plus) with **MODELADM** credentials.
4. Open the **InstallMODELADM.sql** file in <TEMPDIR>/ORMBA-V2.2.1.0.0-Database/MODELADM and edit the release path in the following code snippet:

   define RELEASE_PATH=path upto <TEMPDIR>/ORMBA-V2.2.1.0.0-Database
5. Execute InstallMODELADM.sql.
6. Execute the checkDBObjects.sql file in <TEMPDIR>/ORMBA-V2.2.1.0.0-Database folder using the command: **@ checkDBObjects.sql**
7. In case of any error, log on as **MODELADM** user and clean up the schema using the CleanUpMODELADM.sql file in **<**TEMPDIR>/ORMBA-V2.2.1.0.0-Database/MODELADM directory. After fixing the issue, you need to re-run the InstallMODELADM.sql script.

8.2 Configuring Data Source

To configure the data source, follow the procedure below:

Note: Before proceeding with the procedure below, check if you have 'Execute' privileges for **configureDS.sh** script.

1. Open **datasource.properties** in the <TEMPDIR>/ORMBA-V2.2.1.0.0-Web/config/datasource folder.
2. Edit the datasource.properties with the below parameters:

   admin.url=<Weblogic console URL> Eg: t3://localhost:7001

   admin.userName=<weblogic Admin user in application server>

   admin.password=<weblogic Password>

   datasource.name=<Any name for the new datasource> Eg: ORMBA_DWADM_Connection

   datasource.target=<Weblogic server on which Modeling EAR is to be deployed> Eg: ODI_server1

   datasource.jndiname=ormba-DWADMDS

   datasource.url=<Database url> Eg: jdbc:oracle:thin:@server:port/servicename

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datasource.username=DWADM

datasource.password=Password for DWADM

3. Execute **configureDS.sh** in your application server with <**WLS_HOME>/server/bin** as argument, where <WLS_HOME> is <FMW_HOME>/wlserver.
4. After successful execution of the script, edit the following attributes within the same **datasource.properties** file:

   datasource.name=<Any name for the new datasource> Eg: ORMBA_MODELADM_Connection

   datasource.jndiname=ormba-MODELADMDS

   datasource.url=<Database url> Eg: jdbc:oracle:thin:@server:port/servicename

   datasource.username=MODELADM

   datasource.password=<Password for MODELADM>
5. Execute **configureDS.sh** in your application server with **<FMW_HOME>/wlserver/server/bin** as argument.
6. If you want to deploy Apply Back service, edit the following attributes within the same **datasource.properties** file:

   datasource.name=<Any name for the new datasource> Eg: ORMBA_RMB1REP_Connection
   datasource.jndiname= jdbc/ormba-RMB1REPDS
   datasource.url=<Database url> Eg: jdbc:oracle:thin:@server:port/servicename
   datasource.username=RMB1REP

   datasource.password=<Password for RMB1REP>
7. Execute **configureDS.sh** in your application server with <FMW_HOME>/wlserver/server/bin as argument.

8.3 Deploying Modeling Service

For deploying the modeling service, follow the procedure below:

Note: Before proceeding with the procedure below, ensure that you have 'Execute' privileges for **deploy.sh** script.

1. Open the **deploy_configuration.properties** file in <TEMPDIR>/ORMBA-V2.2.1.0.0-Web/service folder and edit the attributes as shown below:

   domain.name=ormba_domain

   admin.url=<Weblogic console URL> Eg: t3://localhost:7001

   admin.userName=<weblogic UserName>

   admin.password=<weblogic Password>

   target.server=<Weblogic server or cluster on which Modeling EAR is to be deployed> Eg: ODI_server1

   file.location=.

   file.name=ORMBA-Modelling.ear

   application.name=ORMBA-Modelling
2. Go to the folder <TEMPDIR>/ORMBA-V2.2.1.0.0-Web/service and execute the shell **deploy.sh** with **<FMW_HOME>/wlserver/server/bin** as argument.

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8.4 Setting Modeling Parameters

To enable Modeling (Simulation) feature, you must alter the default global settings in Admin Tool.

1. Log on to Admin tool as a user with either **GlobalSettingRole** or **ORMBA_AdminRole** role.
2. Navigate to the Global Settings page.
3. Edit the values of following parameters.

Parameters	Value
Enable modeling feature	Yes
End point of simulation webservice	Webservice endpoint URL (Eg: http://<server>:<port>/ormbas/resources where <server> is the server on which the modeling service was deployed). For more information, see Configuring Data Source.

8.5 Deploying Apply Back Service

1. Go to WebLogic Console (<hostname>:<port>/console) in the application server and log on with administrator credentials.
2. Under Domain Structure, navigate to ormba_domain > Deployments and click the Lock & Edit button under Change Center.
3. Click Install and enter the path: **<TEMPDIR>/ORMBA-V2.2.1.0.0-Web/service/applyback.war**
4. Click Upload.
5. Click Next and select the required clusters.
6. Click Next and give a name for the deployment.
7. Click Finish and click Activate Changes under Change Center.
8. Check whether the deployment is active and if not, click Start.

Note: To enable apply back feature, you need to provide 'End point of apply back webservice' attribute using the Global Settings page of ORMBA Admin Tool.

Example of webservice endpoint URL is http://<server>:<port>/ormbab/resources/apply/add where <server> is the server on which apply back service was deployed).

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9. (Optional) ORMBA Spatial Configuration

Configuring ORMBA Spatial Analysis includes the following tasks:

- Creating Spatial Table Space and User
- Installing Spatial Metadata Schema
- Importing Spatial Metadata

9.1 Creating Spatial Table Space and User

The map schema is created in a PDB with a CDB in the target database. To create the user and schema for Spatials in target database server, follow the procedure below:

1. Connect to the target PDB as SYS user using SQL * Plus.
2. Create a new table space named **MAPADM_01** for Map metadata schema.
3. Create a database user named **MAPADM** with default table space MAPADM_01.

9.2 Installing Spatial Metadata Schema

If you have opted for spatial view, you need to install one more Schema - **MAPADM**.

To install MAPADM schema, follow the procedure below:

1. Log on to the container database (CDB) in the target database server as SYS user using SQL*Plus.
2. Execute **CreateSpatialMetadata.sql** file in <TEMPDIR>/ORMBA-V2.2.1.0.0-Database/MAPADM/SCRIPTS folder.
3. Create a local directory **MAPDIR** and copy the dump file 'MAPADM.dmp' from <TEMPDIR>/ORMBA-V2.2.1.0.0-Dashboards/MAPADM/MAPDIR folder.
4. Open the **MAPADM_Grants.sql** file in <TEMPDIR>/ORMBA-V2.2.1.0.0-Database/MAPADM and replace <dumppath> with the MAPDIR path.
5. Log on to the target database server as SYS (pluggable) user using SQL *Plus.
6. Navigate to <TEMPDIR>/ORMBA-V2.2.1.0.0-Database/MAPADM folder and execute the **MAPADM_Grants.sql** file.
7. Navigate to <TEMPDIR>/ORMBA-V2.2.1.0.0-Database/MAPADM SCRIPTS folder and execute the Import**_MAPADM.sql** file.
8. Connect to the database using any SQL client (such as SQL*Plus) with **MAPADM** credentials.
9. Open the **InstallMAPADM.sql** file in <TEMPDIR>/ORMBA-V2.2.1.0.0-Database/MAPADM and edit the release path in the following code snippet:

   define RELEASE_PATH=path upto <TEMPDIR>/ORMBA-V2.2.1.0.0-Database
10. Execute **InstallMAPADM.sql**.

9.3 Importing Spatial Metadata

To import spatial metadata, follow the procedure below:

1. Open the file **mapViewerConfig.xml** in <TEMPDIR>/ORMBA-V2.2.1.0.0-Dashboards/MAPVIEWER and replace the below variables with appropriate values:

   <host> = name of the database server where MAPADM user resides

   <sid> = SID of the database server where MAPADM user resides

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<port> = port of the database server where MAPADM user resides

<password> = password of the MAPADM user

2. Copy the edited **mapViewerConfig.xml** file to the folder:

   <OBIEE_HOME>/user_projects/domains/bi/config/fmwconfig/mapviewer/conf

3. Log on to the OBIEE Mapviewer Console (<hostname>:<port>/mapviewer) using Administrator credentials.
4. Navigate to the Configuration menu and click Restart to refresh the map viewer configuration.
5. Log on to OBIEE Dashboard using Administrator credentials.
6. Navigate to Administration > Manage Map Data page and click on the Import Layers button ( ). This opens the Import Layers pop up window.

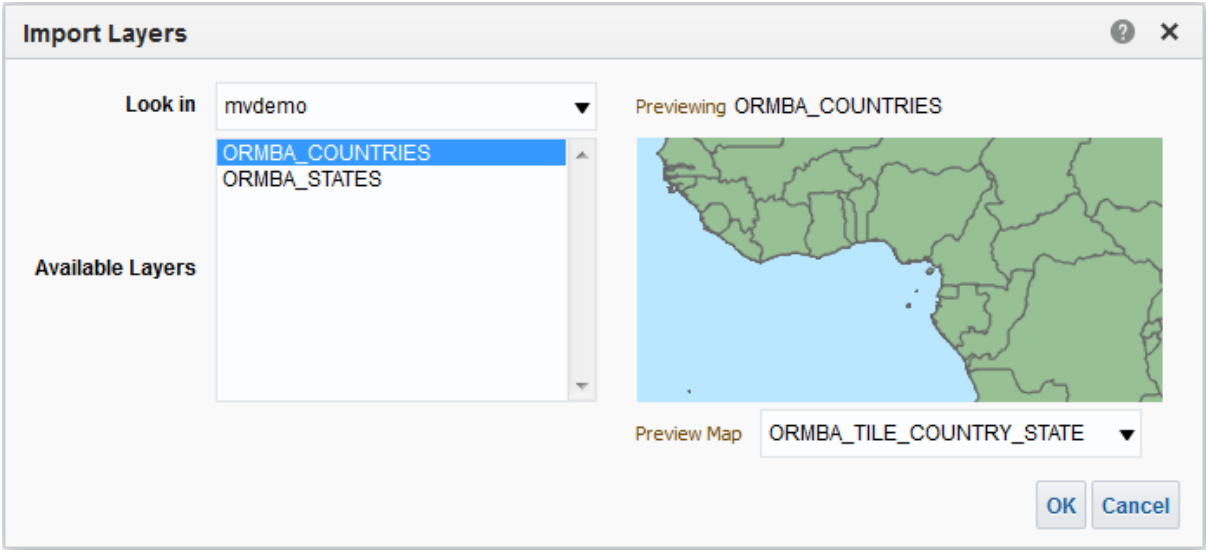

Figure 49: Import Layers

7. Select ORMBA_COUNTRIES and click OK. This takes you back to the Manage Map Data page.
8. Click on Import Layers button and select ORMBA_STATES. Click OK.
9. Select ORMBA_STATES layer, and click the Edit Layers button ( ) to open the Edit Layer popup window.

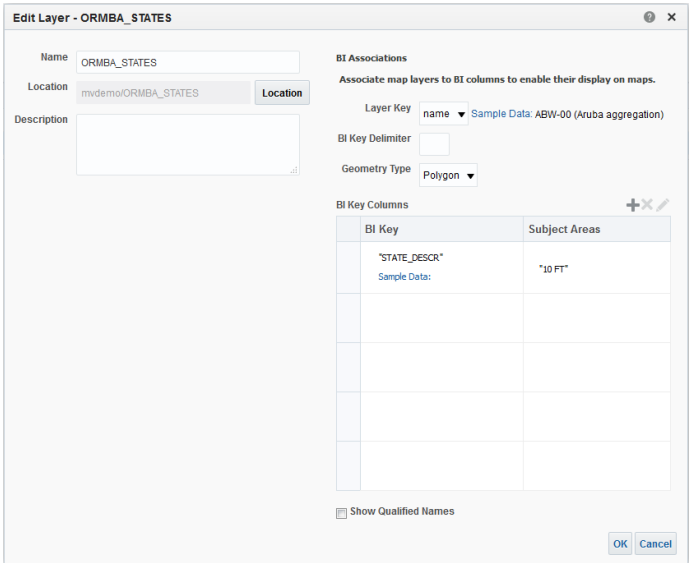

Figure 50: Edit Layer

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10. Click on the Add button (+). This opens the Select Subject Area popup.
11. In the popup, select Financial Transactions. This opens the Select BI Key Columns popup.
12. Select Invoice Customer > **STATE_DESCR** on the left pane and click › button to move the item to the right pane.

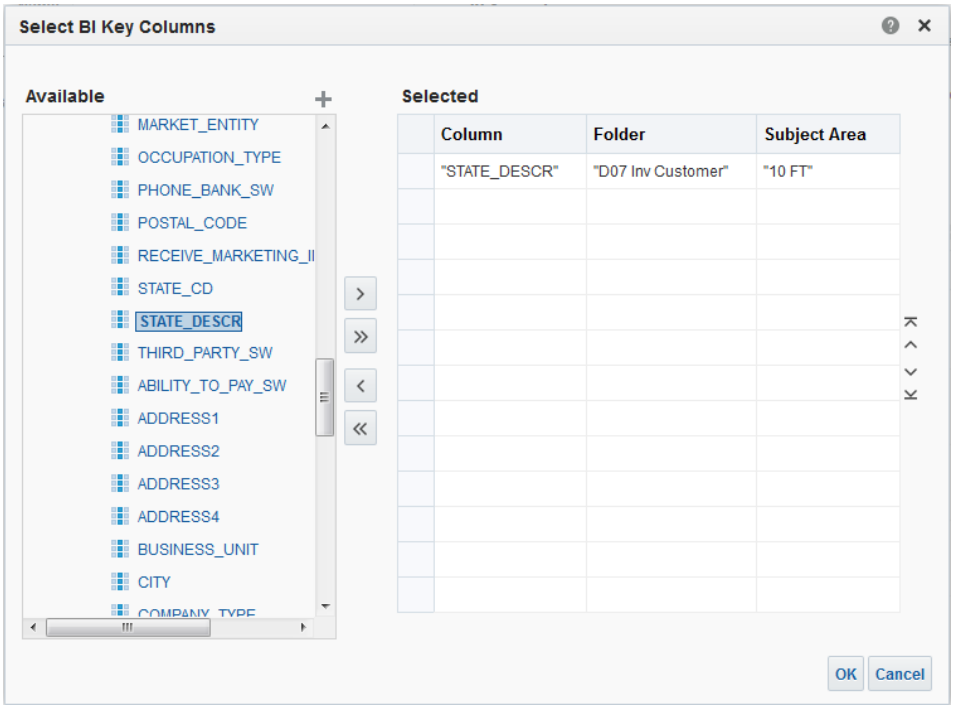

Figure 51: Select BI Key Columns

13. Click OK. This takes you back to Edit Layer popup.
14. Click OK. This takes you back to the Manage Map Data page.

Repeat steps 9 to 14 for ORMBA_COUNTRIES layer also. While editing the ORMBA_COUNTRIES layer in step 12, in Financial Transactions subject area, select the column Invoice Customer > **GEO_CODE** and move it to the right pane.

15. Navigate to the Background Maps tab and click on the Import Background Maps button (). This opens the Import Background Maps popup.

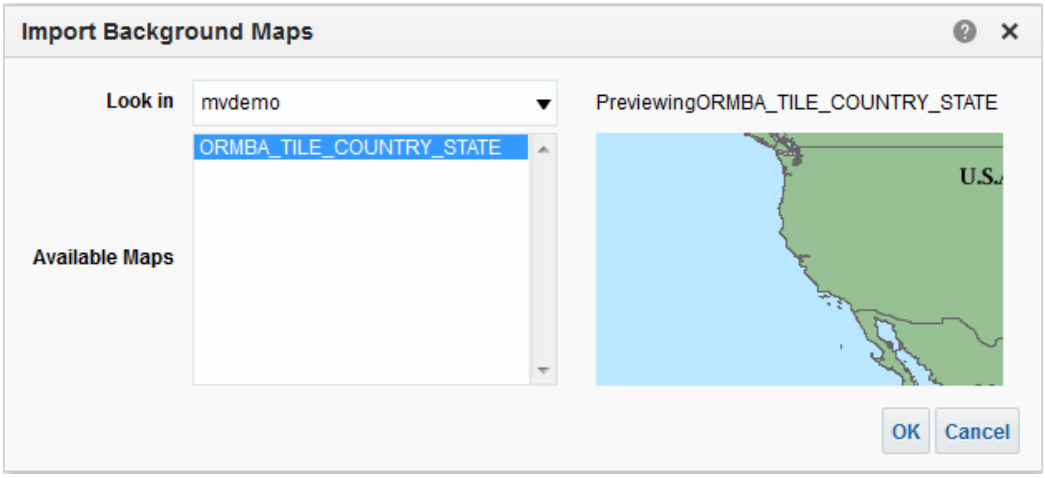

Figure 52: Import Background Maps

16. Click OK. This takes you back to Background Maps tab of Manage Map Data page.
17. Click the Edit Background Map button ( ). This opens the Edit Background Map popup.

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18. Click the Add Layers button ( ) and select both ORMBA_COUNTRIES and ORMBA_STATES layers.
19. To define the zoom levels applicable for each layer, select the respective boxes. For example, the image below indicates that the zoom levels 0, 1, 2 are available for ORMBA_COUNTRIES layer, whereas zoom levels 3, 4, 5, 6, 7 are available for ORMBA_STATES layer.

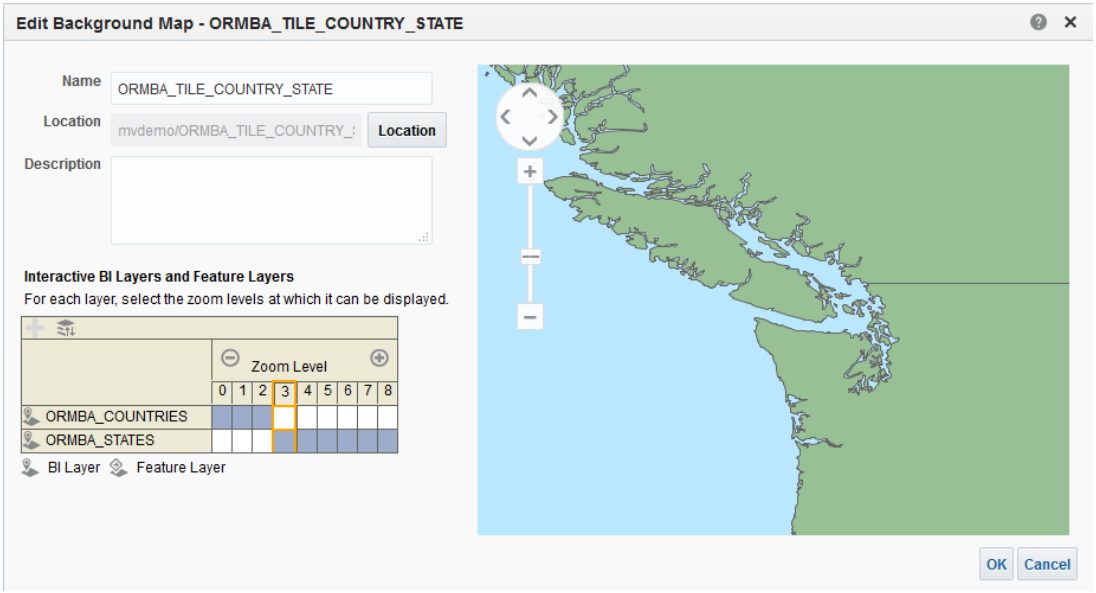

Figure 53: Edit Background Map

20. Click OK. This takes you back to the Manage Map Data page.
21. Navigate to the Images tab and click on the Import Images button ( ).
22. In the Import Images popup, select all available images and click OK.

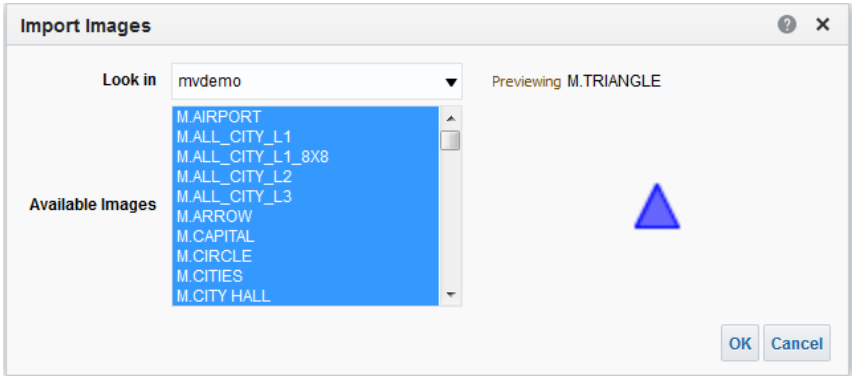

Figure 54: Import Images

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