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Preface

This guide provides instructions for installing Oracle Communications Unified Inventory Management (UIM).

Audience

This document is for system administrators, database administrators, and developers who install and configure UIM. The person installing the software should be familiar with the following topics:

- Operating system commands
- Database configuration
- Oracle WebLogic Server
- Network management

Before reading this guide, you should have familiarity with UIM. See UIM Concepts.

UIM requires Oracle Database and Oracle WebLogic Server. See the documentation for these products for installation and configuration instructions.

Related Documentation

For more information, see the following documents in the Oracle Communications Unified Inventory Management documentation set:

- UIM System Administrator’s Guide: Describes administrative tasks such as working with cartridges and technology packs, maintaining security, managing the database, configuring Oracle Map Viewer, and troubleshooting.

- UIM Security Guide: Provides guidelines and recommendations for setting up UIM in a secure configuration.

- UIM Concepts: Provides an overview of important concepts and an introduction to using both UIM and Design Studio.

- UIM Developer’s Guide: Explains how to customize and extend many aspects of UIM, including the data model, life-cycle management, topology, security, rulesets, user interface, and localization.

- UIM Web Services Developer’s Guide: Describes the UIM Service Fulfillment Web Service operations and how to use them, and describes how to create custom Web services.
UIM API Overview: Provides detailed information and code examples of numerous APIs presented within the context of a generic service fulfillment scenario, and within the context of a channelized connectivity enablement scenario.

UIM Information Model Reference: Describes the UIM information model entities and data attributes, and explains patterns that are common across all entities.

Oracle Communications Information Model Reference: Describes the Oracle Communications information model entities and data attributes, and explains patterns that are common across all entities. The information described in this reference is common across all Oracle Communications products.

UIM Cartridge and Technology Pack Guide: Provides information about how you use cartridges and technology packs with UIM. Describes the content of the base cartridges.

UIM technology pack implementation guides: Describe the content of product technology packs as well as configuration guidelines and implementation considerations.

For step-by-step instructions for performing tasks, log into each application to see the following:

- UIM Help: Provides step-by-step instructions for tasks you perform in UIM.

Documentation Accessibility

For information about Oracle’s commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

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

Document Revision History

The following table lists the revision history for this book.

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E51350-01</td>
<td>July 2014</td>
<td>Initial release.</td>
</tr>
</tbody>
</table>
Unified Inventory Management Installation Overview

This chapter provides an overview of the installation process of Oracle Communications Unified Inventory Management (UIM).

Overview of the UIM Installation Procedure

Installing UIM involves a number of steps that you or others must complete:

1. Review system requirements. See "Unified Inventory Management System Requirements".

2. Install Oracle Database and configure it for UIM. See "Installing and Configuring the Oracle Database".

3. Install Oracle WebLogic Server and configure it for UIM. See "Installing and Configuring Oracle WebLogic Server".

4. Install UIM. See "Installing Unified Inventory Management".

5. Perform post-installation configuration tasks. See "Unified Inventory Management Post-Installation Tasks".

6. Verify the installation. See "Verifying the Unified Inventory Management Installation".

7. Upgrade UIM. See "Upgrading Unified Inventory Management".

8. (Optional) Troubleshooting UIM. See "Troubleshooting the Unified Inventory Management Installation".

9. Install UIM patches. See "Installing UIM Patches".

10. (Optional) Configure Oracle Maps. See "Configuring Oracle Maps".

11. (Optional) Uninstall UIM. See "Uninstalling Unified Inventory Management".

Installation Options

There are many options you can choose during installation. This section describes the options that have the largest impact on the installation process.

Interactive Install and Silent Install

"Installing Unified Inventory Management" describes the following ways you can install UIM:
Ensuring a Successful UIM Installation

UIM Installation should be performed only by qualified personnel. You must be familiar with the following before you begin the installation:

- UNIX operating system
- Oracle WebLogic Server administration
- Oracle Database administration

Additionally, you should have experience installing Java-related packages.

Follow these guidelines:

- Pay close attention to the system requirements. Before you begin installing the application, ensure your system has the required base software. In addition, ensure that you know all of the required configuration values, such as host names and port numbers.
- Make a note of any new configuration values as you create them. You will be required to enter configuration values later in the procedure.
- As you install each component, verify that it installed successfully before continuing the installation process.
- Monitor the installation log files, to verify the installation events. See "Checking the Installation Logs" for information on the installation log files.

Directory Placeholders Used in This Guide

Table 1–1 lists the placeholders that are used in this guide to refer to directories related to the UIM application.

<table>
<thead>
<tr>
<th>Placeholder</th>
<th>Directory Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UIM_Home</td>
<td>The directory in which the UIM software is installed. This directory contains various installation-related files.</td>
</tr>
<tr>
<td>MW_HOME</td>
<td>The directory in which the Oracle Fusion Middleware products are installed. This directory contains the base directory for the WebLogic Server, a utilities directory, and other files and directories.</td>
</tr>
<tr>
<td>WL_HOME</td>
<td>The directory in which the WebLogic Server is installed. It is located in the MW_HOME directory.</td>
</tr>
<tr>
<td>Domain_Home</td>
<td>The directory containing the configuration for the domain into which UIM is installed. The default location is MW_HOME/user_projects/domains/domain_name, where domain_name is the name of the WebLogic server domain for UIM.</td>
</tr>
</tbody>
</table>
Unified Inventory Management System Requirements

This chapter describes the hardware, operating system, software, server, and database requirements for installing Oracle Communications Unified Inventory Management (UIM).

Software Requirements

UIM consists of a base application that is installed on an Oracle WebLogic server domain. It connects with an Oracle database to store all relevant information, and can connect to a report publishing tool if you require reports to be published. You must install and connect all required software with UIM for optimal performance.

Supported Operating Systems

Table 2–1 lists operating systems that support the UIM server.

<table>
<thead>
<tr>
<th>Product</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Linux on x86 (64-bit)</td>
<td>5.8 or 6.2</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux on x86 (64-bit)</td>
<td>5.8 or 6.2</td>
</tr>
<tr>
<td>Oracle Solaris on SPARC (64-bit)</td>
<td>10, 11</td>
</tr>
<tr>
<td>Oracle VM on x86 (64-bit)</td>
<td>3.0.2</td>
</tr>
<tr>
<td>IBM AIX on POWER Hardware (64-bit)</td>
<td>6.1 Technology Level (TL) 6 SP2</td>
</tr>
</tbody>
</table>

**Note:** UIM is not certified to run on Windows; however, you can install UIM on Windows x64 (Windows 7 or later) for development, demonstration, or test environments.

Required Software

Table 2–2 lists software required on the server for installing and running UIM.

<table>
<thead>
<tr>
<th>Product</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle WebLogic Server Enterprise Edition</td>
<td>11gR1 PS5 (10.3.6)</td>
</tr>
</tbody>
</table>

2
Table 2–2 (Cont.) Required Server-Side Software

<table>
<thead>
<tr>
<th>Product</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle WebLogic Server Patch</td>
<td>17572726</td>
</tr>
<tr>
<td>EclipseLink Patch</td>
<td>15842881, 15857374, 15992904</td>
</tr>
<tr>
<td>Oracle Fusion Middleware Application</td>
<td>11gR1 PS6 (11.1.1.7)</td>
</tr>
<tr>
<td>Development Runtime (including Enterprise</td>
<td></td>
</tr>
<tr>
<td>Manager)</td>
<td></td>
</tr>
<tr>
<td>Oracle Application Development Runtime Patch</td>
<td>17566156</td>
</tr>
<tr>
<td>Oracle Fusion Middleware Repository Creation</td>
<td>11gR1 PS6 (11.1.1.7)</td>
</tr>
<tr>
<td>Utility (RCU) for Linux</td>
<td></td>
</tr>
<tr>
<td>Sun Hotspot (JDK) for Linux or Solaris</td>
<td></td>
</tr>
<tr>
<td>IBM Java SE Runtime Environment for IBM</td>
<td></td>
</tr>
<tr>
<td>AIX</td>
<td></td>
</tr>
<tr>
<td>Oracle Database Enterprise Edition</td>
<td>11gR2 PS2 (11.2.0.3) or 11gR2 PS3 (11.2.0.4.1)</td>
</tr>
<tr>
<td>Oracle Database Patches</td>
<td>For 11gR2 PS2 (11.2.0.3):</td>
</tr>
<tr>
<td></td>
<td>■ None</td>
</tr>
<tr>
<td></td>
<td>For 11gR2 PS3 (11.2.0.4.1):</td>
</tr>
<tr>
<td></td>
<td>■ patch 18230522</td>
</tr>
<tr>
<td></td>
<td>■ (Linux only) Automated Release Update (ARU)</td>
</tr>
<tr>
<td></td>
<td>patch 17394794</td>
</tr>
<tr>
<td></td>
<td>■ (Solaris only) ARU patch 17398276</td>
</tr>
</tbody>
</table>

The UIM Installer checks for all required software and displays errors if it detects any missing or unavailable components, or if there are any connectivity related issues. 

Table 2–3 lists software required to access the UIM UI.

Table 2–3 Required Client-Side Software

<table>
<thead>
<tr>
<th>Product</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Microsoft Windows 7</td>
</tr>
<tr>
<td>Java Runtime Environment (JRE)</td>
<td>Java 7 with latest critical patch update</td>
</tr>
<tr>
<td>Web Browser</td>
<td>Microsoft Internet Explorer (IE) 8 or 9</td>
</tr>
<tr>
<td>Oracle Communications Design Studio</td>
<td>7.2.4</td>
</tr>
</tbody>
</table>

Design Studio is required for developing cartridges that extend UIM. Install Design Studio on a computer with network access to the UIM server.

Supported Software

Table 2–4 lists additional software that is supported by UIM.
Hardware Sizing Guidelines

Table 2–4  Supported Software

<table>
<thead>
<tr>
<th>Product</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Business Intelligence (BI) Publisher</td>
<td>10.1.3.4.1</td>
</tr>
<tr>
<td></td>
<td>BI Publisher is required to use the reporting templates included with UIM.</td>
</tr>
<tr>
<td>Oracle Communications Network Integrity</td>
<td>7.2.4</td>
</tr>
<tr>
<td></td>
<td>If using Network Integrity with UIM 7.2.4, you must use Network Integrity 7.2.4.</td>
</tr>
<tr>
<td>Oracle Internet Directory</td>
<td>11gR1 PS6 (11.1.1.7)</td>
</tr>
</tbody>
</table>

Supported software is installed and licensed separately from UIM.

Hardware Sizing Guidelines

Table 2–5 provides hardware sizing guidelines for UIM.

Note: The information in this section is meant as a guideline only. The values in this section are approximate. Accurate sizing for a production system requires a detailed analysis of the proposed business requirements.

Table 2–5  Hardware Sizing Guidelines

<table>
<thead>
<tr>
<th>Deployment Size</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services/day</td>
<td>&lt;= 600,000</td>
<td>&lt;= 1,500,000</td>
<td>&lt;= 3,000,000</td>
</tr>
<tr>
<td># of Subscribers Base (in Millions)</td>
<td>20</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>SPARC/Solaris Platform - Application Server</td>
<td>CPU: Two T4 core @ 2.85 GHz - 32 threads</td>
<td>CPU: Eight T4 cores @ 2.85 GHz - 64 threads</td>
<td>CPU: Sixteen T4 cores @ 2.85 GHz - 128 threads</td>
</tr>
<tr>
<td></td>
<td>RAM: 16 GB</td>
<td>RAM: 48 GB</td>
<td>RAM: 96 GB</td>
</tr>
<tr>
<td></td>
<td>HDD: 2 X 300 GB (RAID1)</td>
<td>HDD: 2 X 300 GB (RAID1)</td>
<td>HDD: 2 X 300 GB (RAID1)</td>
</tr>
<tr>
<td></td>
<td>Storage: 750 GB (RAID 1+0)</td>
<td>Storage: 1.5TB GB (RAID 1+0)</td>
<td>Storage: 3 TB (RAID 1+0)</td>
</tr>
<tr>
<td>SPARC/Solaris Platform - Database Server</td>
<td>CPU: One T4 core @ 2.85 GHz - 8 threads</td>
<td>CPU: Four T4 cores @ 2.85 GHz - 32 threads</td>
<td>CPU: Eight T4 cores @ 2.85 GHz - 64 threads</td>
</tr>
<tr>
<td></td>
<td>RAM: 8 GB</td>
<td>RAM: 32 GB</td>
<td>RAM: 64 GB</td>
</tr>
<tr>
<td></td>
<td>HDD: 2 X 300 GB (RAID1)</td>
<td>HDD: 2 X 300 GB (RAID1)</td>
<td>HDD: 2 X 300 GB (RAID1)</td>
</tr>
<tr>
<td></td>
<td>Storage: 750 GB (RAID 1+0)</td>
<td>Storage: 1.5TB GB (RAID 1+0)</td>
<td>Storage: 3 TB (RAID 1+0)</td>
</tr>
<tr>
<td>x86-64/Linux Platform - Application Server</td>
<td>CPU: Four core - Intel E7/5600 family @ 2.66 GHz or higher - 8 threads</td>
<td>CPU: Sixteen core - Intel E7/5600 family @ 2.66 GHz or higher - 32 threads</td>
<td>CPU: Thirty two core - Intel E7/5600 family @ 2.66 GHz or higher - 64 threads</td>
</tr>
<tr>
<td></td>
<td>RAM: 16 GB</td>
<td>RAM: 48 GB</td>
<td>RAM: 96 GB</td>
</tr>
<tr>
<td></td>
<td>HDD: 2 X 300 GB (RAID1)</td>
<td>HDD: 2 X 300 GB (RAID1)</td>
<td>HDD: 2 X 300 GB (RAID1)</td>
</tr>
<tr>
<td></td>
<td>Storage: 750 GB (RAID 1+0)</td>
<td>Storage: 1.5 TB (RAID 1+0)</td>
<td>Storage: 3 TB (RAID 1+0)</td>
</tr>
<tr>
<td>x86-64/Linux Platform - Database Server</td>
<td>CPU: Two core - Intel E7/5600 family @ 2.66 GHz or higher - 4 threads</td>
<td>CPU: Eight core - Intel E7/5600 family @ 2.66 GHz or higher - 16 threads</td>
<td>CPU: Sixteen core - Intel E7/5600 family @ 2.66 GHz or higher - 32 threads</td>
</tr>
<tr>
<td></td>
<td>RAM: 8 GB</td>
<td>RAM: 32 GB</td>
<td>RAM: 64 GB</td>
</tr>
<tr>
<td></td>
<td>HDD: 2 X 300 GB (RAID1)</td>
<td>HDD: 2 X 300 GB (RAID1)</td>
<td>HDD: 2 X 300 GB (RAID1)</td>
</tr>
<tr>
<td></td>
<td>Storage: 750 GB (RAID 1+0)</td>
<td>Storage: 1.5 TB (RAID 1+0)</td>
<td>Storage: 3 TB (RAID 1+0)</td>
</tr>
</tbody>
</table>
Information Requirements

During UIM installation, you are required to enter configuration values such as host names and port numbers. You define some of these configuration values when you install and configure the Oracle database and WebLogic Server.

If you have already installed Oracle Communications products, the installer reads the values from the existing Oracle Communications products and uses them as default values. If no Oracle Communications products are installed, the installer uses the default values shown in the following tables.

Each chapter contains tables for the configuration values.

---

**Note:** Based on the GSM 3GPP Technology Pack, one service invokes five Web service operations against UIM.

DB Storage is listed without retention calculations. Storage requirements will increase with number of subscriber population and retention period requirements.
This chapter describes the process of installing the Oracle Database and configuring
the Oracle database for Oracle Communications Unified Inventory Management
(UIM).

Installing Oracle Database

The Oracle Universal Installer checks for a database to connect to during the
installation process. Ensure that a database is running before you start installing UIM.
If you already have a database running, you must create a tablespace for UIM.

Download and install Oracle Database for this version of UIM. See Table 2–2,
"Required Server-Side Software" for the appropriate version of Oracle Database to
install.

For information on installing Oracle Database, see the Oracle Database installation
documentation.

---

**Note:** UIM uses Oracle Locator, which must be installed prior to the
UIM installation. When you install Oracle Database, Oracle
MultiMedia is installed; and when Oracle MultiMedia is installed,
Oracle Locator is installed.

You can also install Oracle MultiMedia manually if necessary. For
more information, see Oracle MultiMedia User’s Guide at:

http://docs.oracle.com/cd/B28359_01/appdev.111/b28415/ap_
inst1_upgrd.htm

Configuring Oracle Database

The Oracle database must be configured for UIM. Specifically, this section covers the
following:

- Database Connection Information
- Setting the Database Parameters
- Setting the Database Time Zone
- Creating and Configuring Your Tablespaces
- Creating the Database (MetaData) Schema for UIM
- Installing and Configuring Oracle Database Real Application Clusters
- Tuning the Database
Database Connection Information

Table 3–1 lists database connection details that you are required to provide during the Oracle Database installation.

<table>
<thead>
<tr>
<th>Information Type</th>
<th>Description</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hostname</td>
<td>Host name of the server where you install the Oracle database.</td>
<td></td>
</tr>
<tr>
<td>Port number</td>
<td>The number assigned to this specific port. Port numbers are usually predefined and you can accept the provided default value.</td>
<td>1521</td>
</tr>
<tr>
<td>User name</td>
<td>Your database user name. You define the user name when you install the database.</td>
<td>sys</td>
</tr>
<tr>
<td>Password</td>
<td>The password to connect to the database as the user for which you provided the user name. You define this password along with the user name during database installation.</td>
<td></td>
</tr>
<tr>
<td>Service Name</td>
<td>The name of the database service or instance to remotely connect to the database.</td>
<td>orcl</td>
</tr>
</tbody>
</table>

Setting the Database Parameters

If you are installing Oracle Database on a UNIX system, set the following parameters:

- 8-bit ASCII character set
- NLS_LANG=AMERICAN_AMERICA.WE8ISO8859P1 (for English)
  or
- NLS_LANG=AL32UTF8 (for any other language)

Setting the Database Time Zone

The Oracle database must have the correct time zone setting because UIM uses the datatype TIMESTAMP WITH LOCAL TIME ZONE in its database schema.

See Oracle Database Globalization Support Guide for information and instructions on setting the time zone.

---

**Note:** After UIM is installed, the database time zone cannot be changed. Ensure the time zone is correctly set before installing UIM.

---

**Note:** The Database server and the Application server must be in the same time zone.

Creating and Configuring Your Tablespaces

You must set up your tablespaces before installing UIM. For a minimum installation, there are at least two tablespaces, one permanent and one temporary.

The permanent tablespace stores UIM data, and the temporary tablespace is used by Oracle as a workspace while processing UIM commands. For a minimum installation,
place the UIM data in one permanent tablespace. Tablespaces should be created by an experienced Oracle DBA. For assistance, contact Oracle.

In a high-throughput system, create each tablespace or set of data files on a different physical disk. Place the Oracle redo log files on a separate physical disk. You should not have any other load on this disk.

In a production system, use a RAID device for physical storage.

This example shows how to create your permanent tablespace:

```sql
create tablespace large_data
datafile '/u01/oradata/UIM/data_001M01_01.dbf' size 2200M
extent management local
uniform size 1M;
```

This example shows how to create your temporary tablespace:

```sql
create temporary tablespace large_temp
tempfile '/u01/oradata/UIM/temp_001M01_01.dbf' size 1600M
extent management local
uniform size 1M;
```

**Note:** If you are using Chinese UTF8 characters, the block size for the tablespaces must be configured larger than 2 KB.

---

**Creating the Database (MetaData) Schema for UIM**

Download Oracle Fusion Middleware Repository Creation Utility for Linux or Oracle Fusion Middleware Repository Creation Utility for Microsoft Windows (see Table 2–2, "Required Server-Side Software" for the appropriate version) from the Oracle Communications Unified Inventory Management 7.2.4 media pack, which is available on the Oracle Software Delivery Cloud.

For information on creating the MetaData schema, see the *Oracle Fusion Middleware Repository Creation Utility User’s Guide*.

**Note:** The Repository Creation Utility can run on the Microsoft Windows platform. A Windows system can be used to remotely access and configure the database.

---

**Schema User Name Information**

Table 3–2 lists schema user details that you are required to provide during schema installation.

<table>
<thead>
<tr>
<th>Information Type</th>
<th>Description</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema User Name</td>
<td>Your schema user name that you will use to access the UIM schema.</td>
<td>This option has no default value.</td>
</tr>
<tr>
<td>Schema User Password</td>
<td>The password to access the UIM schema for the schema user you defined.</td>
<td>This option has no default value.</td>
</tr>
</tbody>
</table>

To create the schema for UIM using Oracle Fusion Middleware Repository Creation Utility (RCU):
1. Extract the RCU package.

2. Run the following command:
   For Unix:
   
   \texttt{RCU\_Home/bin/rcu}
   
   For Windows:
   
   \texttt{RCU\_Home/bin/rcu.bat}

   The Welcome screen of the Repository Creation Utility Installation wizard appears.

3. Click \textit{Next}.
   
   The Create Repository screen appears.

4. Select \textit{Create} and click \textit{Next}.
   
   The Database Connection Details screen appears.

5. Do the following:
   
   a. From the Database Type list, select \textit{Oracle Database}.
   
   b. In the \textit{Host Name} field, enter the hostname of the machine hosting the database.
   
   c. In the \textit{Port} field, enter the port number for the machine hosting the database.
   
   d. In the \textit{Service Name} field, enter the service name.
   
   e. In the \textit{Username} field, enter the user name for the database user.

   \begin{verbatim}
   Note: This user account must have the following privileges:
   CATALOG, CONNECT, Create User, Create Session, Grant Any Privilege, Grant Any Role, Select Any Table, Select any Dictionary.
   \end{verbatim}

   f. In the \textit{Password} field, enter the password for the database user.
   
   g. In the Role list, select \textit{SYSDBA}.
   
   h. Click \textit{Next}.
   
   The Select Components screen appears.

6. Select \textit{Create a new Prefix}, and enter the prefix value in the corresponding text field.

   The prefix is any appropriate name for your schema. RCU adds a suffix to this name.

7. When specifying components, expand \textit{Oracle AS Repository Components}; then, expand \textit{AS Common Schemas} and select \textit{Metadata Services}.

8. Click \textit{Next}.

   The Schema Passwords screen appears.

9. Select \textit{Use same password for all schemas}.

   \begin{verbatim}
   Caution: You must use these same user name and password when providing UIM schema user information during UIM installation.
   \end{verbatim}
10. In the **Password** field, enter the password for the schema.

11. In the **Confirm Password** field, enter the password for the schema again and click **Next**.

   The Map Tablespaces screen appears.

12. Select the required tablespace and click **Next**.

   The Summary screen appears.

13. Review and verify the information you have provided and click **Create** to create.

   The Completion Summary screen appears, which shows details of the newly created repository.

### Installing and Configuring Oracle Database Real Application Clusters

If your network data requires multiple databases for storage purposes, Oracle recommends Oracle Real Application Clusters for high availability and scalability. See the *Oracle Real Application Clusters* documentation, located on the Oracle Technology Network.

#### Database Connection Information for Real Application Cluster Database

Table 3–3 lists database connection details for an Oracle Real Application Clusters (Oracle RAC) database that you are required to provide during the Oracle RAC installation.

<table>
<thead>
<tr>
<th>Information Type</th>
<th>Description</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle RAC Database Connection String</td>
<td>The information string that is used to connect to the Oracle RAC database.</td>
<td>This option has no default value.</td>
</tr>
<tr>
<td>User name</td>
<td>Your database user name. You define the user name when you install the database.</td>
<td>sys</td>
</tr>
<tr>
<td>Password</td>
<td>The password to connect to the database as the user for which you provided the user name. You define this password along with the user name during database installation.</td>
<td>This option has no default value.</td>
</tr>
</tbody>
</table>

### Tuning the Database

Table 3–4 and Table 3–5 provide recommended database parameters for tuning your database for the UIM installation. These are the minimum requirements for UIM.

#### Table 3–4 Database Creation Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Recommended Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGA+PGA</td>
<td>At least 4 GB in total. Oracle recommends that you use as much memory as you have available in the system, and also use Automatic Memory Management.</td>
</tr>
<tr>
<td>Processes</td>
<td>2000</td>
</tr>
<tr>
<td>Connection mode</td>
<td>Dedicated server</td>
</tr>
</tbody>
</table>
Enabling and Configuring Server Affinity

Server affinity is a performance feature that ensures all database operations performed on data on an Oracle RAC cluster are directed to the same Oracle RAC instance. When server affinity is enabled and configured, the target Oracle RAC instance is determined by data. For example, a business interaction ID; in this scenario, server affinity ensures all operations that operate on a business interaction ID are routed to the same Oracle RAC node, reducing global cache transfers.

Server affinity is also known as data affinity.

---

**Note:** By default, UIM uses extended architecture (XA) affinity. Server affinity differs from XA affinity in that XA affinity ensures all database operations performed on an Oracle RAC cluster within the context of a transaction are directed to the same Oracle RAC instance. In XA affinity, the affinity context is established based on the global transaction id, whereas in server affinity the affinity context is established based on the data.

---

In UIM, server affinity is based on EclipseLink partitioning. See the EclipseLink documentation for more information on EclipseLink partitioning:

http://wiki.eclipse.org/EclipseLink/Examples/JPA/Partitioning

To enable and configure server affinity:

1. Update the following property value in the `UIM_Home/config/affinity-config.properties` file to `true`:

   ```
   uim.affinity.configuration.enabled=true
   ```

2. In the WebLogic Server Administration Console, create JDBC Multi Data Sources pointing to each node in the Oracle RAC cluster. For example, if there are two nodes in the Oracle RAC cluster, define two Multi Data Sources by doing the following:

---

Table 3–5 Database Initialization Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Recommended Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>db_file_multiblock_read_count</td>
<td>16</td>
</tr>
<tr>
<td>distributed_lock_timeout</td>
<td>1800</td>
</tr>
<tr>
<td>dml_locks</td>
<td>9700</td>
</tr>
<tr>
<td>job_queue_processes</td>
<td>10</td>
</tr>
<tr>
<td>log_buffer</td>
<td>31457280</td>
</tr>
<tr>
<td>open_cursors</td>
<td>5000</td>
</tr>
<tr>
<td>parallel_max_servers</td>
<td>640</td>
</tr>
<tr>
<td>plsql_code_type</td>
<td>NATIVE</td>
</tr>
</tbody>
</table>

---

Table 3–4 (Cont.) Database Creation Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Recommended Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redo log file size</td>
<td>1024 MB minimum</td>
</tr>
</tbody>
</table>
a. Create two generic data sources pointing to both nodes in the Oracle RAC.

For example:

- InventoryTxAffinityNode1
  with JNDI name jdbc/InventoryTxAffinityNode1
- InventoryTxAffinityNode2
  with JNDI name jdbc/InventoryTxAffinityNode2

b. Create a Multi Data Source with JNDI name jdbc/InventoryTxNode1DataSource.

c. Add InventoryTxAffinityNode1 to the Multi Data Source, and select the Algorithm Type of **Failover**.

This defines InventoryTxAffinityNode1 as a data source pointing to Node1 while Node1 is up, and which fails over to Node2 if Node1 is down.

d. Add InventoryTxAffinityNode2 to the Multi Data Source, and select the Algorithm Type of **Failover**.

This defines InventoryTxAffinityNode2 as a data source pointing to Node2 while Node2 is up, and which fails over to Node1 if Node2 is down.

e. Create a Multi Data Source with JNDI name jdbc/InventoryTxNode2DataSource.

f. Add InventoryTxAffinityNode2 to the Multi Data Source, and select the Algorithm Type of **Failover**.

This defines InventoryTxAffinityNode2 as a data source pointing to Node2 while Node2 is up, and which fails over to Node1 if Node2 is down.

g. Add InventoryTxAffinityNode1 to the Multi Data Source, and select the Algorithm Type of **Failover**.

This defines InventoryTxAffinityNode1 as a data source pointing to Node1 while Node1 is up, and which fails over to Node2 if Node1 is down.

Figure 3–1 shows the server affinity example that step 2 describes. In the figure, the solid arrows indicate the primary path, and the dotted arrows indicate the secondary path.
3. Repeat step 2 for each node that is available. Ensure that every node in the Oracle RAC has a Multi Data Source that is primary.

4. In the `UIM_Home/config/affinity-config.properties` file, configure the data sources that you created by specifying the following (provide name and JNDI name):

   - `uim.affinity.connectionpool.name.1` = `node1`
   - `uim.affinity.connectionpool.node1.datasource` = `jdbc/InventoryTxNode1DataSource`
   - `uim.affinity.connectionpool.name.2` = `node2`
   - `uim.affinity.connectionpool.node2.datasource` = `jdbc/InventoryTxNode2DataSource`

   **Note:** If a new node is added, this list must be updated to include the new node, and the WebLogic Server must be restarted.

5. The affinity policy that is provided with the UIM installation is based on ID. If this does not meet your requirements, you can define an affinity policy that does meet your requirements in the `UIM_Home/config/affinity-config.properties` file.

   Table 3–6 lists and describes the properties that define an affinity policy.
<table>
<thead>
<tr>
<th>Property Name</th>
<th>Property Description</th>
</tr>
</thead>
</table>
| uim.affinity.policy.name              | Name of the affinity policy.  
The name of your affinity policy, policyName, is then used in the remaining property names. |
| uim.affinity.policyName.algorithm     | Determines the Java class that implements this algorithm. The default value should be oracle.communications.inventory.api.framework.persistence.affinity.ExtendedHashPartitioningPolicy. |
| uim.affinity.policyName.key           | The context ID, which determines the Oracle RAC node.                                  |
| uim.affinity.policyName.connectionpools | List of connection pools the affinity policy uses.                                     |
| uim.affinity.policyName.entity.list   | List of entities to which the affinity policy is applied.                              |
Oracle Communications Unified Inventory Management (UIM) is installed and run on an Oracle WebLogic Administration Server. This chapter describes procedures relating to installing the WebLogic Administration Server and configuring it for UIM.

**Note:** Ensure that the Administration Server is up and running in the WebLogic domain before you install UIM.

This chapter describes how to install and configure WebLogic Server for UIM.

Installation and configuration tasks include:

- Installing IBM Java
- Installing the Oracle JDK
- Downloading and Installing Oracle WebLogic Server
- Installing Oracle Application Development Runtime
- Creating a WebLogic Domain for a Single Server Installation
- Setting Memory Requirements for UIM
- Creating a WebLogic Domain for a Server Cluster Installation
- Installing and Configuring Additional Software

**About Java Requirements**

WebLogic Server is a Java application and needs a Java environment in which to run.

When WebLogic Server is installed on IBM AIX, Oracle recommends installing IBM Java.

When WebLogic Server is installed on Linux x86 or Solaris, Oracle recommends that you use the Oracle Java Development Kit (JDK).

**Installing IBM Java**

Download the Java SDK from the IBM web site.

For information on installing IBM Java, see the IBM Java installation documentation.
Installing the Oracle JDK

Use a 64-bit Java Runtime Environment (JRE) on a 64-bit operating system (OS) for a successful UIM installation. The JRE is contained in the JDK.

Download JDK for the required platform from the Oracle Technology Network web site.

For information on installing the JDK, see the JDK installation documentation.

Downloading and Installing Oracle WebLogic Server

Oracle WebLogic Server is available as a component of the Oracle Communications Unified Inventory Management 7.2.4 media pack. Oracle Communications Unified Inventory Management 7.2.4 includes WebLogic Server, JDeveloper, and other software. See Table 2–2, "Required Server-Side Software" for the appropriate versions.

Download Oracle WebLogic Server from the Oracle Software Delivery Cloud.

Note: The Oracle WebLogic Server software is available in a 32-bit version, for each supported platform, and in a generic 64-bit version, supported across all the platforms.

For information about installing Oracle WebLogic Server, see the Oracle WebLogic Server documentation.

Tip: You can launch the Oracle WebLogic Server installation from a command line by entering the following:

JAVA_Home/bin/java -jar wls1036_generic.jar

Installing Patches

After you install Oracle WebLogic Server, you must install any applicable patches. The patches must be downloaded from the My Oracle Support Web site and can be applied using the WebLogic Smart Update tool.

Note: The first time you use the update tool, you will be prompted to perform an upgrade. Accept this upgrade, as the tool shipped with WebLogic Server is outdated.

See Table 2–2, "Required Server-Side Software" for WebLogic Server patch information and EclipseLink patch information. Download the cited patches from the My Oracle Support Web site:

https://support.oracle.com

For information about downloading and applying patches, see Knowledge Article 1302053.1 - Master Note: How to Locate and Download Patches for WebLogic Server Using My Oracle Support and Knowledge Article 1075833.1 - Master Note on WebLogic Server (WLS) Patches, Upgrade Installers, and Full Installers.

Installing Oracle Application Development Runtime

Download Oracle Application Development Runtime from the Oracle Software Delivery Cloud. This software is used to create and manage applications used by UIM.
For installing Oracle Application Development Runtime, see the Oracle WebLogic Server documentation on the Oracle Technology Network.

Download and install any applicable patches. See Table 2–2, "Required Server-Side Software" for more information on patch numbers.

---

**Note:** The Oracle Fusion Middleware Application Developer Installer installs both Oracle Application Development Runtime and Oracle Enterprise Manager.

---

For more information on the Application Development Framework, see *Oracle Fusion Middleware Fusion Developer’s Guide for Oracle Application Development Framework*.

### Creating a WebLogic Domain for a Single Server Installation

This section provides instructions on installing UIM on a single server. A single server arrangement is used for a small UIM deployment.

### WebLogic Server Connection Information

Table 4–1 lists WebLogic Server connection details that you are required to provide during the WebLogic Server installation.

<table>
<thead>
<tr>
<th>Information Type</th>
<th>Description</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host Name</td>
<td>The host name for this WebLogic Server instance.</td>
<td><code>current_hostname</code></td>
</tr>
<tr>
<td>Port Number</td>
<td>The number assigned to this specific port. Port numbers are usually predefined and you can accept the provided default value.</td>
<td><code>7001</code></td>
</tr>
<tr>
<td>User Name</td>
<td>Your WebLogic Server user name. You define this name when you install WebLogic Server.</td>
<td><code>weblogic</code></td>
</tr>
<tr>
<td>Password</td>
<td>The password to connect to WebLogic Server as the user for which you provided the user name. You define this password along with the user name during the WebLogic Server installation.</td>
<td>This option has no default value.</td>
</tr>
</tbody>
</table>

### Creating the Standalone WebLogic Domain

To create a standalone WebLogic domain:

1. Navigate to the following directory:
   ```
   WL_Home/common/bin
   ```

2. Enter the following command:
   ```
   ./config.sh
   ```

   The Welcome screen of the Fusion Middleware Configuration Wizard appears.

3. Select **Create a New WebLogic domain** and click **Next**.

   The Select Domain Source screen appears.

4. Select **Generate a domain configured automatically to support the following products**, and from the provided list, select the following products:
5. Click Next.
The Specify Domain Name and Location screen appears.

6. In the Domain name field, enter a domain name.

7. In the Domain location field, enter the path and directory where the domain files will be created. For example, enter WLServer_Home/\user_projects/\domains/\base_domain.

8. Click Next.
The Configure Administrator User Name and Password screen appears.

9. In the User name field, enter the administrator user name.

10. In the User password field, enter the administrator user password. The password must be a minimum of eight alphanumeric characters, and must contain at least one number or special character.

11. In the Confirm password field, re-enter your password.

12. (Optional) In the Description field, enter information about the administrator. For example, enter This user is the default administrator (or whatever text fits your business practices).

13. In the WebLogic Domain Startup Mode section, select one of the following:
   - Development Mode, or
   - Production Mode (recommended mode)

14. In the JDK Selection section, select the required JDK (Oracle JDK 1.7.0._patch where patch is the latest critical update) by doing the following:
   - Select Available JDKs and select a JDK from the list provided
   - or
   - Select Other JDK and browse to the location of another JDK. Ensure that this JDK is supported. See Table 2–2, "Required Server-Side Software" for details.

15. Click Next.
The Select Optional Configuration page appears.

16. Select the following:
   - Administration Server

17. Click Next.
The Configure the Administration Server screen appears.

18. Do the following:
   a. In the Name field, enter the Administration Server name.
      This single server serves as the UIM domain Administration Server.
   b. In the Listen Address field, select a DNS or an IP address.
c. In the **Listen Port** field, accept the default.

d. In the **SSL Listen Port** field, enter a port that is not used by another domain.

e. Select **SSL enabled** if you are enabling SSL.

   It is not a requirement to either enable or disable SSL.

f. Click **Next**.

   The Configuration Summary screen appears.

19. Review the summary to verify the contents of your domain.

   Click **Previous** to return to prior screens to modify their content.

20. Click **Create** to create the domain.

21. To finish the domain creation process, click **Done**, after the domain is created successfully.

22. To set memory requirements, see "Setting Memory Requirements for UIM".

23. Start the WebLogic server. See "Starting the WebLogic Server".

For more information on WebLogic domains, see *Oracle WebCenter Content* documentation.

You can now manually start the Administration Server, and log in to the WebLogic Server Administration Console.

### Starting the WebLogic Server

To start the WebLogic server:

1. Open a command window.

2. Navigate to the `Domain_Home` directory, and enter the following command:

   ```
   ./startWebLogic.sh
   ```

   The script starts the WebLogic server.

3. Verify that the server started:

   a. In a Web browser, enter:

   ```
   http://ServerName:Port/console
   ```

   where `ServerName` is the name of the Administration Server machine and `Port` is the Administration Server port number.

   b. Enter the WebLogic server administration user name and password.

   c. In the Domain Structure tree, expand **Environment**, and click **Servers**.

      The Summary of Servers screen appears.

   d. View the **State** of the AdminServer and see RUNNING.

      If the State is not RUNNING, you may need to wait a short period and refresh the page.

---

**Note:** Use listener addresses that are equal to a resolvable DNS host or IP address. Do not use `localhost` or `127.0.0.1`. Those addresses interfere with clustered servers.
4. Look at the bottom of the Administration server command window. The command window should contain the following lines:

   Server state changed to RUNNING
   Server started in RUNNING mode

Setting Memory Requirements for UIM

In UNIX, AIX, and Solaris environments, you must set appropriate memory requirement values in the WebLogic server to be able to install UIM. Not allotting enough memory space for the WebLogic domain can cause errors during installation.

Setting Memory Requirements for UIM in UNIX Environments

The example shows the entries in the `setDomainEnv.sh` file for setting the memory requirement values for UIM:

1. In the `Domain_Home/bin` directory, open the `setDomainEnv.sh` file.
2. Set the memory arguments for your JVM as follows:

   ```
   WLS_MEM_ARGS_64BIT="-Xms4g -Xmx4g"
   ```

3. Set Perm size as:

   ```
   MEM_PERM_SIZE_64BIT="-XX:PermSize=1024m"
   MEM_MAX_PERM_SIZE_64BIT="-XX:MaxPermSize=1024m"
   ```

4. Change the following entries from this:

   ```
   MEM_ARGS_64BIT="${CUSTOM_MEM_ARGS_64BIT}"
   MEM_ARGS_32BIT="${CUSTOM_MEM_ARGS_32BIT}"
   ```

   to this:

   ```
   MEM_ARGS_64BIT="${WLS_MEM_ARGS_64BIT}"
   MEM_ARGS_32BIT="${WLS_MEM_ARGS_32BIT}"
   ```

Setting Memory Requirements for UIM in AIX Environments

The example shows the entries in the `startWebLogic.sh` file for setting the User memory argument values for UIM:

1. In the `Domain_Home/bin` directory, open the `startWebLogic.sh` file.
2. Set the user memory arguments as follows:

   ```
   USER_MEM_ARGS="-Xms1024m -Xmx3000m -Xmn850m -XX:PermSize=1024m"
   ```

   export USER_MEM_ARGS

Setting Memory Requirements for UIM in Solaris Environments

The example shows the entries in the `setUIMEnv.sh` file for setting the User memory argument values for UIM:

---

**Note:** These values can be adjusted based on the available system memory. The configuration values shown are examples of the memory sizes that can be entered. If your system has sufficient memory resources, you can increase the size of the memory allocation.
Creating a WebLogic Domain for a Server Cluster Installation

A server cluster arrangement is used for load balancing, scalability, and failover. A clustered server installation (also called an Administration Server with cluster-managed servers installation) is one in which one or more WebLogic server instances are managed by a separate Administration Server. In this arrangement, clustering the Managed Servers in WebLogic allows the servers to work together as one unit, rather than as several independent processing units. This is the configuration Oracle recommends because it provides protection if a server fails.

When working with a cluster, deploy the Cartridge Management Web Services (CMWS) and UIM adapters on the machine where the Administration server is running.

Installation Scenario

This installation scenario includes two clustered Managed Servers (uim01 and uim02) that are separate from the Administration Server, an Administration server, and a hardware load balancer, used for load balancing. Managed Servers are instances of WebLogic used to host enterprise applications; in this case, UIM.

This example uses a shared disk storage environment.

For cluster deployments, it is mandatory that the UIM_Home directory and the DOMAIN_Home/bin folder be placed in a shared disk location. The advantages of using shared disk storage include easier UIM installation, maintenance, and cartridge deployment. In addition, using shared disk storage allows the Administration Server and all of the managed servers in the cluster to use the same instance of WebLogic. The machines on which the servers reside must have access to the shared storage.

UIM does not support session replication, but it does support server failover.

Server Cluster Example

See Table 4–2 and Table 4–3 for information on setting up the cluster arrangement.

<table>
<thead>
<tr>
<th>Information Type</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>WL_Home</td>
<td>Home/</td>
</tr>
<tr>
<td>Domain_Home directory</td>
<td>WL_Home/user_projects/domains/cluster01</td>
</tr>
</tbody>
</table>
Creating a WebLogic Domain for a Server Cluster Installation

Figure 4–1 shows the servers in a sample server cluster.

Server Cluster Prerequisites
The prerequisites for setting up a server cluster are:

<table>
<thead>
<tr>
<th>Information Type</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain login</td>
<td>weblogic</td>
</tr>
<tr>
<td>Domain password</td>
<td>uimcluster</td>
</tr>
<tr>
<td>Cluster DNS</td>
<td>UIMClusterDNS (includes the uim01 and uim02 listening IP addresses.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information Type</th>
<th>Administration Server</th>
<th>Cluster-Managed Server #1</th>
<th>Cluster-Managed Server #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebLogic server</td>
<td>uimAdmin</td>
<td>uim01</td>
<td>uim02</td>
</tr>
<tr>
<td>Listening port</td>
<td>XX.XX.XX.XX:8063</td>
<td>XX.XX.XX.XX:8065</td>
<td>XX.XX.XX.XX:8066</td>
</tr>
<tr>
<td>Machine</td>
<td>UIM1</td>
<td>UIM2</td>
<td>UIM3</td>
</tr>
</tbody>
</table>

Figure 4–1  Servers in a Sample Cluster
- Oracle WebLogic administration experience.
- A hardware load balancer. Refer to the server load balancer configuration for details.
- A DNS entry containing all of the cluster-managed servers’ listening addresses, serves as the UIM cluster address.
- A machine hosting multiple cluster-managed servers. The machine must be multi-homed.

\[\text{Note:}\] UIM recommends using Unicast for Cluster messaging mode. As a prerequisite, it is recommended to review Considerations when Using Unicast in the Weblogic Server documentation.

Overview of Steps for Setting Up a Server Cluster

\[\text{Note:}\] The figures shown in this section are for reference only. The actual server names that you will use may be different from those shown in the figures.

Installing an Oracle WebLogic Server cluster arrangement involves:

- Installing Oracle WebLogic Server in a Clustered Environment
- Creating a Domain
- Starting the WebLogic Server
- Starting the Cluster Servers
- Configuring the WebLogic Server StuckThreadMaxTime Value
- Configuring the WebLogic Server Proxy Timeout Value

Installing Oracle WebLogic Server in a Clustered Environment
Install WebLogic Server on the shared disk storage by following the procedures in "Downloading and Installing Oracle WebLogic Server".

Creating a Domain
To create a domain:

1. Navigate to the \texttt{WL\_Home/common/bin} directory and run the following command:
   ```
   ./config.sh
   ```
   
   The Welcome screen appears.

2. Select \textit{Create a new WebLogic domain} and click \textit{Next}.
   The Select Domain Source screen appears.

3. Select the \textit{Generate a domain configured automatically to support the following products}: option, and from the provided list, select the following products:
   - Oracle Enterprise Manager - 11.1.1.7 [oracle_common]
   - Oracle JRF - 11.1.1.7 [oracle_common]
The Specify Domain Name and Location screen appears.

4. Do the following:
   a. In the **Domain name** field, enter an appropriate domain name as per your requirements or standards.
   b. In the **Domain location** field, enter the path and directory where the domain files will be created. For example, enter `WLServer_Home/user_projects/domains/base_domains`.
   c. In the **Application location** field, enter the path where the application will be saved.
   d. Click **Next**.

   The Configure Administrator User Name and Password screen appears.

5. Do the following:
   a. In the **User name** field, enter the administrator user name.
   b. In the **User password** field, enter the administrator user password. The password must be a minimum of 8 alphanumeric characters, and must contain at least one number or special character.
   c. In the **Confirm password** field, re-enter your password.
   d. (Optional) In the **Description** field, enter information about the administrator. For example: *This user is the default administrator.*
   e. Click **Next**.

   The Configure Server Start Mode and JDK screen appears.

6. In the WebLogic Domain Startup Mode section, select one of the following:
   - **Development Mode**
   - **Production Mode** (recommended mode)

7. In the JDK Selection section, select the required JDK (Oracle JDK 1.7.0._patch where _patch_ is the latest critical patch update) by doing the following:
   - Select **Available JDKs** and select the JDK from the list provided or
   - Select **Other JDK** and browse to the location of another JDK. Ensure that this JDK is supported. See Table 2–2, "Required Server-Side Software" for details.

8. Click **Next**.

   The Select Optional Configuration page appears.

9. Select the following:
   - **Administration Server**
   - **Managed Servers, Clusters and Machines**
   - **Deployments and Services**

10. Click **Next**.

    The Configure the Administration Server screen appears.

11. Do the following:
a. In the Name field, enter your Administration Server name.
b. In the Listen Address field, select a DNS or an IP address.

d. In the SSL Listen Port field, enter a port that is not used by another domain.

Note: Use listener addresses that are equal to a resolvable DNS host or IP address. Do not use localhost or 127.0.0.1. Those addresses interfere with clustered servers.

c. In the Listen Port field, accept the default.
d. In the SSL Listen Port field, enter a port that is not used by another domain.

e. Select SSL enabled if you are enabling SSL

It is not a requirement to either enable or disable SSL.
f. Click Next.

The Configure Managed Servers screen appears.

12. Do the following:
   a. Click Add to add a managed server to the cluster.
   b. In the Name field, enter a name for the managed server.
   c. In the Listen address field, enter the host, or IP address of the machine where the managed server is running.

Note: Use listener addresses that are equal to a resolvable DNS host or IP address. Do not use localhost or 127.0.0.1. Those addresses interfere with clustered servers.

d. In the Listen port field, enter the number of the port where the managed server will listen for incoming messages.
e. In the SSL listen port field, enter the appropriate value only if SSL is selected.
f. Select SSL enabled as required.
g. (Optional) Click Add to add more managed servers as required on your UIM deployment.
h. Click Next

The Configure Clusters screen appears.

13. Do the following:
   a. Click Add to start configuring the cluster.
   b. In the Name field, enter the name for the cluster.
   c. In the Cluster messaging mode field, select unicast as the messaging mode to use in the cluster.
   d. In the Cluster address field, provide the cluster address information.

The cluster address contains each managed server along with the managed server’s port separated by a comma. Separate the managed server and the port number by a colon.
e. Click Next.
The Assign Servers to Clusters screen appears.

14. Assign the servers to the cluster by moving the managed servers in the left pane to the required cluster in the right pane.

15. Click Next.

The Create HTTP Proxy Applications screen appears.

16. (Optional) Select Create HTTP Proxy for any proxy servers in the list.

17. Click Next.

The Configure Machines screen appears. Use this screen to change the configuration information for the machines. A machine is the logical expression of the system that hosts one or more WebLogic Server instances. The Administration Server and the Node Manager application use the machine definition to start remote servers.

18. (Optional) Add the machines by doing one of the following:

   ■ Select the Machine tab, and do the following:

     a. Click Add to create the first machine.

     b. In the Name field, enter a name for the machine.

     c. In the Node manager listen address field, enter the host, or IP address of the node manager.

     d. In the Node manager listen port field, enter the port number for the node manager.

     e. Create further machines as required on your UIM deployment.

     f. Click Next.

     The Target Deployments to Clusters or Servers screen appears.

   ■ Select the Unix Machine tab, and do the following:

     a. Click Add to create the first UNIX machine.

     b. If required, select Post bind GID enabled. The default state is unselected.

     c. In the Post bind GID field, enter a value or select the default.

     d. In the Post bind UID field, enter a value or select the default.

     e. In the Node manager listen address field, enter the host, or IP address of the node manager.

     f. In the Node manager listen port field, enter the port number of the node manager.

     g. (Optional) Create further machines or UNIX machines as required on your UIM deployment.

     h. Click Next.

     The Target Deployments to Clusters or Servers screen appears.

19. Select clusters or servers in the left pane, and click Select All to select all of the applications in the right pane to target them to the selected clusters or servers.

20. Click Next.

The Target Services to Clusters or Servers screen appears.
21. Select clusters or servers in the left pane, and click **Select All** to select all of the services in the right pane to target them to the selected clusters or servers.

22. Click **Next**.

The Configuration Summary screen appears.

23. Review the summary to verify the contents of your domain. Click **Previous** to return to prior screens to modify their content.

24. Click **Create** to create the domain, and then click **Done**.

25. To set memory requirements, see "Setting Memory Requirements for UIM".

26. Start the WebLogic server. See "Starting the WebLogic Server".

You can now log in to the WebLogic Server Administration Console and start the Administration Server manually.

---

**Note:** Create domains for remote machine in the same manner, in the respective machines.

---

### Starting the WebLogic Server

You start the WebLogic server in a clustered environment in the same way that you start the WebLogic server in single server environment. See "Starting the WebLogic Server".

### Starting the Cluster Servers

Depending on whether you have configured the node manager, you can start the UIM cluster servers one of two ways:

- If you have not configured the node manager, you must start the cluster servers through a command prompt on the first cluster server.
  
  See "Starting the Cluster Servers from the First Cluster Server".

- If you have configured the node manager, you can start the cluster servers through the WebLogic Server Administration Console.
  
  See "Starting the Cluster Servers from the WebLogic Server".

#### Starting the Cluster Servers from the First Cluster Server

To start the cluster servers from the first cluster server:

1. Log in to the first cluster server machine.

2. Navigate to the `Domain_Home/bin` directory.

3. Start the cluster server by running the following command from the machine where the managed server is defined:

   ```bash
   ./startManagedWebLogic.sh cluster_server_name admin_server_URL
   ```

4. Repeat steps 1 through 3 for each cluster server.

5. Verify that the server started:

   a. Log in to the WebLogic Server Administration Console.

   b. In the Domain Structure tree, expand **Environment**, and click **Servers**.
      
      The Summary of Servers page appears.
c. View the State of the cluster servers and see RUNNING.

If the State is not RUNNING, you may need to wait a short period and refresh the page.

**Starting the Cluster Servers from the WebLogic Server**

To start the cluster servers from the WebLogic server:

1. Log in to the WebLogic Server Administration Console.
2. In the Domain Structure tree, expand Environment, and click Servers.

   The Summary of Servers page appears.
3. Click the link for the managed server.

   The Settings for the selected server page appears.
4. Click the Server Start tab.
5. In Class Path, enter the following. (These are the classpaths defined in the setUIMEnv.sh and startUIM.sh files, which you must also define for the node manager.)

   ```
   UIM_Home/config:UIM_Home/lib/aspectjrt.jar:MODULES_HOME/com.sun.jersey.client_1.0.0.0_1-9.jar:MODULES_HOME/com.sun.jersey.core_1.0.0_1-9.jar:
   UIM_Home/lib/aspectjtools.jar:
   UIM_Home/lib/aspectjtools.jar
   ```

   where **UIM_Home** is the UIM directory under domain. For example, `/opt/Middleware_1036/user_projects/domains/uimtest724/UIM`.

   And where **MODULES_HOME** is the modules directory under Middleware. For example, `/opt/Middleware_1036/modules`.

6. In Arguments, enter the following. (These are the arguments defined in the setUIMEnv.sh and startUIM.sh files, which you must also define for the node manager.)

   ```
   -Duim.home=UIM_Home
   -Dweblogic.log.Log4jLoggingEnabled_uim=true
   -Dlog4j.configuration_uim=loggingconfig.xml
   -Dweblogic.management.discover.retries=6
   -Djava.io.tmpdir=UIM_Home/tmp
   -X:+UseSSE42Intrinsics
   -DUSE_JAAS=false -Djps.policystore.hybrid.mode=false
   -Djps.combiner.optimize.lazyeval=true -Djps.combiner.optimize=true
   -Djps.authz=ACC
   -DUIMMaster=ManagedServer
   ```

   where **UIM_Home** is the UIM directory under domain. For example, `/opt/Middleware_1036/user_projects/domains/uimtest724/UIM`.

   And where **ManagedServer** is the managed server name. For example, ManagedServer1.

7. Click Save.
Configuring the WebLogic Server StuckThreadMaxTime Value
During the installation of Oracle WebLogic Server and UIM in a clustered environment, if the execute thread takes more time than the Stuck Thread Max Time: declared in WebLogic, a Stuck Thread Max Time: error is displayed.

Stuck Thread Max Time: is a configurable property in WebLogic for performance tuning. It is defined as “The number of seconds that a thread must be continually working before this server considers the thread stuck”. The minimum value is 0 seconds; the default value is 600 seconds.

Consider setting Stuck Thread Max Time: from its default 600 seconds to a larger value such as 3600 seconds.

Use the WebLogic Server Administration Console to change this value:
1. Log in to the WebLogic Server Administration Console.
2. In the left section, under Domain Structure, expand Environment.
3. Click Servers, and then click the link for each managed server.
4. For each managed server, click the Configuration tab and then click the Tuning tab.
5. Increase the value of Stuck Thread Max Time to 3600.
6. Restart your domain. Your changes will take effect only after a restart.

Configuring the WebLogic Server Proxy Timeout Value
When you install UIM in a clustered environment using WebLogic HttpClusterServlet, long-running transactions time out from the proxy, which logs you out of UIM. To avoid this situation, configure the WebLogic Server proxy timeout value.

To configure the WebLogic Server proxy timeout value:
2. Add the following parameter to the web.xml file:
   <init-param>
     <param-name>WLIOTimeoutSecs</param-name>
     <param-value>1800</param-value>
   </init-param>
3. Save and close the web.xml file.
4. Restart the WebLogic server.

Installing and Configuring Additional Software
You can perform the following steps to enhance UIM performance:

- Installing and Configuring an Authentication Provider
- Configuring WebLogic Server for the Authentication Provider
- Configuring Custom Authentication Providers

Installing and Configuring an Authentication Provider
The WebLogic Server includes an embedded LDAP store that acts as the default security provider data store for the Default Authentication, Authorization, Credential
Mapping, and Role Mapping providers. You manage the embedded LDAP store using the WebLogic Server Administration Console. The Oracle Universal Installer uses this embedded LDAP server by default as the security provider. During installation, you can change the setting to use third-party security providers with WebLogic Server. See Oracle Fusion Middleware Securing Oracle WebLogic Server for information on the embedded LDAP server.

You can use an external LDAP store or security provider if your requirements are greater and you need more security options than are provided by the embedded LDAP server.

Oracle recommends Oracle Internet Directory as an external LDAP store.

| Note: | The use of Oracle Internet Directory requires a separate license. Contact your Oracle representative for information on acquiring a license. |

You require the following information to configure the Oracle Internet Directory:

- A static IP address
  - You require a static IP address in order to install the Oracle Identity Management suite.
- Oracle Database
- WebLogic Server
- Application Development Runtime
- Identity Management
- Fusion Middleware

For information on installing and configuring Oracle Internet Directory, see Oracle Fusion Middleware Installation Guide for Oracle Identity Management.

**Configuring WebLogic Server for the Authentication Provider**

To enable the WebLogic Server to work with an external LDAP store, or Oracle Internet Directory:

1. Log in to the WebLogic Server Administration Console.
2. Under Your Application’s Security Settings, click Security Realms.
   - The Summary of Security Realms screen appears.
3. Select the realm YourRealmName, for which you need to set the Oracle Internet Directory as the external LDAP store.
   - The Settings For YourRealmName screen appears.
4. Click the Providers tab, and then click the Authentication tab.
5. Click New.
   - The Create a New Authentication Provider screen appears.
6. In the Name field, enter the name of the authenticator.
7. From the Type list, select OracleInternetDirectoryAuthenticator.
8. Click OK.
The Settings For YourRealmName screen appears, showing the newly created authentication name in the Authentication tab.

9. Click the link for the authentication name.

The Settings for AuthenticatorName screen appears.

10. In the Control Flag list, select SUFFICIENT.

11. Click Save.

12. Click the Provider Specific tab.

13. Under the Connection section, in the following fields, enter the relevant values:
   - Host
   - Port
   - Principal
   - Credentials
   - Confirm Credentials

14. Under the Users section, in the following fields, enter the relevant values:
   - User Base DN
     Ensure that you provide the following value:
     \text{cn=Users,dc=idc,dc=oracle,dc=com}
   - All User Filter
   - User From Name Filter
   - User Search Scope
   - User Name Attribute
   - User Object Class

15. Under the Groups section, in the following fields, enter the relevant values:
   - Group Base DN
     Ensure that you provide the following value:
     \text{cn=Groups,dc=idc,dc=oracle,dc=com}
   - All Groups Filter
   - Group From Name Filter
   - Group Search Scope
   - Group Membership Searching
   - Max Group Membership Search Level

16. Click Save.

17. Restart the WebLogic server.

18. Log in to the WebLogic Server Administration Console.

19. Navigate to the Settings For YourRealmName screen, and click Reorder.

The Reorder Authentication Providers screen appears.
20. Use the Up and Down arrows to reorder the listed Authentication Providers, and click OK.

**Configuring Custom Authentication Providers**

You can configure custom authentication providers for your external security provider. In which case, you are required to manually create users and groups before starting UIM installation.

Create the following group and user in the new authentication provider store:

- **Group:** uim-users
- **User:** uimuser

(*uimuser* is a member of the *uim-users* group.)

---

**Note:** Ensure that you create the groups and users in the default security realm.

---
This chapter describes how to install Oracle Communications Unified Inventory Management (UIM). Specifically, the chapter covers:

- About the UIM Installer
- Installing UIM by Using Interactive Install
- Installing UIM by Using Silent Install

About the UIM Installer

You install UIM using the Oracle Universal Installer. This UI-based installer installs the core application and configures connections with the components, based on the connection details you provide. You can install UIM by using interactive install or silent install.

- **Interactive install**: Use interactive install when you want to interact with the installer UI during installation, such as installing a UIM production environment. See "Installing UIM by Using Interactive Install".

- **Silent install**: Use silent install when you are installing UIM using the same configuration repeatedly, such as installing multiple UIM test environments. Silent install does not use the installer UI. Rather, it is a scripted installation that runs in the background. See "Installing UIM by Using Silent Install".

Installing UIM by Using Interactive Install

To install UIM by using interactive install:

---

**Important**: In the event that the installation fails for some reason, you are required to create a new WebLogic domain and a new database user before you begin installation again.

For upgrade scenarios, retry the installation and if the installation fails again contact My Oracle Support.

See "Installing and Configuring Oracle WebLogic Server".

---

**Important**: The installer must be launched from a host which has access to Domain_Home on the UIM AdminServer. If UIM is installed using a shared file system, then this is not an issue.
1. Download the latest version of the JRE, which is contained in the JDK. See ”Installing the Oracle JDK” for more information.

2. Create a temporary directory (temp_dir).

3. Download the software pack for your operating system from the Oracle Software Delivery Cloud and save it to temp_dir:
   - Oracle Communications Unified Inventory Management 7.2.4 for Linux x86
   - Oracle Communications Unified Inventory Management 7.2.4 for Solaris
   - Oracle Communications Unified Inventory Management 7.2.4 for IBM AIX

4. Unzip the software pack in a folder of your choice using the following command:
   ```
   unzip UnifiedInventoryManagement-7.2.4.0.0-<OS>.zip
   ```
   The uim/Disk1/install/ folder structure is created.

   **Note:** For Solaris and Linux x86 installations, the UIM installation will fail due to an Out of Memory error. To fix this issue perform the following:

   1. Navigate to the oraparam.ini file, located in the uim/Disk1/install/ folder.
   2. Open the file and locate the JRE_MEMORY_OPTIONS parameter.
   3. Change the default value for the JRE_MEMORY_OPTIONS parameter to the following:
   ```
   JRE_MEMORY_OPTIONS="-d64 -mx256m -XX:MaxPermSize=512m"
   ```
   **Note:** The installer can also be run by specifying the install user group and Oracle Inventory directory location.

   ```
   ./runInstaller.sh -invPtrLoc ~/orainst.loc
   ```
   where orainst.loc contains:
   ```
   inst_group=uimcluster
   inventory_loc=/share/uimcluster/oraInventory
   ```
   The Welcome screen of the installation wizard appears.

5. Run the Oracle Universal Installer executable file `runInstaller` using the following command:
   ```
   ./runInstaller -jreloc jre_Path
   ```
   Where `jre_Path` is the JRE location.

   **Note:** The installer creates an Inventory directory if it does not detect any installed Oracle products on the system. The Inventory directory manages all Oracle products installed on your system.
7. Select the type of UIM installation you require, and click Next.
   - If you select Complete, this option installs all the components. The Specify Home Details screen appears.
     Skip to step 9.
   - If you select Custom, this option allows you to specify which components to install. This option is used for UIM upgrades. The Available Product Components screen appears.
     Continue with step 8.

8. In the Available Product Components screen, select the components you wish to install, and click Next.

9. In the Specify Home Details screen, do the following:
   a. In the Name field, enter an appropriate name for the folder that will contain all of the installation files.
   b. In the Path field, enter the path to the folder where you wish to install UIM.

   Note: You can also select the name for the installation from the list of names the installer provides.
   You can also browse for the path where UIM will be installed from the provided list using the explorer UI.
   c. Click Next.

   The WebLogic Administration Server Connection Information screen appears.

10. Do the following:
    a. In the Host Name field, enter the Listen address of the Administration server (IP address or the host name of the host machine).
    b. In the Port Number field, enter the Administration server port number.
    c. In the User Name field, enter user name with which you connected to the Administration server.

    Note: This user should belong to the WebLogic Server Administrator’s group.

    d. In the Password field, enter the password for the user name that you provided in the User Name field.
    e. Click Next.

   The WebLogic Server/Cluster Selection screen appears.

11. Select the option for the server, or cluster, where you wish to deploy UIM, and click Next.

    The Database Type Selection screen appears.

    Note: If you select a managed server, ensure that the managed server and the node manager are running.
12. Select the option for the database type to be used and click **Next**.
   - If you select Standard Oracle Enterprise Database, the MDS Schema information screen appears. Proceed to step 15.
   - If you select Oracle Real Application Cluster Database, the Oracle Real Application Clusters DB for MDS screen appears. Proceed to step 13.

13. Enter the Oracle RAC DB for MDS Schema information, by doing the following:
   a. In the **Oracle RAC Database Connection String** field, enter the MDS schema information to connect to the Oracle RAC database.
      
      For example:
      
      \[
      \text{HOST\_NAME1:PORT1:SERVICE\_NAME; HOST\_NAME2:PORT2:SERVICE\_NAME}
      \]

      **Caution:** You must use these same user name and password provided when the UIM MDS schema was created.

   b. In the **User Name** field, enter the *prefix_MDS* schema user name.
   c. In the **Password** field, enter the password for the user name that you provided in the **User Name** field.
   d. Click **Next**.

      The Oracle RAC Database Nodes Connection Information screen appears.

14. Enter the Oracle RAC Database Nodes Connection information, by doing the following:
   a. In the **Oracle RAC Database Connection String** field, enter the connection details to connect to the Oracle RAC database.
      
      For example:
      
      \[
      \text{HOST\_NAME1:PORT1:SERVICE\_NAME; HOST\_NAME2:PORT2:SERVICE\_NAME}
      \]

   b. In the **User Name** field, enter the user name for the Oracle RAC database server.
      
      **Note:** The user must have the following privileges: CATALOG, CONNECT, Create User, Create Session, Grant Any Privilege, Grant Any Role, Select Any Table, Select any Dictionary.

   c. In the **Password** field, enter the password for the user name that you provided in the **User Name** field.
   d. Click **Next**.

      The UIM User Information (Optional) screen appears.

      Proceed to step 22.

15. Enter the MDS Schema information by doing the following:
   a. In the **Host Name** field, enter the IP address or host name of the machine where the database server is installed.
b. In the **Port Number** field, enter the port number with which the installer will connect to the database server.

c. In the **User Name** field, enter the user name for the MDS schema.

d. In the **Password** field, enter the password for the user name that you provided in the **User Name** field.

e. In the **Service Name** field, enter the service name for that uniquely identifies your database on the system.

f. Click **Next**.

The DataBase Connection Information screen appears.

16. Enter the DataBase Connection information by doing the following:

   a. In the **Host Name** field, enter the IP address or host name of the machine where the database server is installed.

   b. In the **Port Number** field, enter the port number with which the installer will connect to the database server.

   c. In the **User Name** field, enter the user name for the database server.

   d. In the **Password** field, enter the password for the user name that you provided in the **User Name** field.

   e. In the **Service Name** field, enter the service name for that uniquely identifies your database on the system.

   f. Click **Next**.

The UIM database schema creation screen appears.

17. Select whether or not to create the UIM database schema and click **Next**.

   **Note:** If you select to create the UIM database schema, the schema will be empty.

   If you select not to create the UIM database schema, then you are using an existing schema (from a previous install or a manually created UIM schema).

The Unified Inventory Management Schema Information screen appears.

18. Enter the UIM database schema information, by doing the following:

   a. In the **User Name** field, enter the user name for the Unified Inventory Management schema.
b. In the **Password** field, enter the password for the user name that you provided in the **User Name** field.

c. In the **System Tablespace** field, enter the name for the permanent tablespace.

d. In the **Temp Tablespace** field, enter the name for the temporary tablespace.

e. Click **Next**.

The Security Provider Selection screen appears.

19. Select the security provider you want to use and click **Next**.

   ■ If you select the **Default WebLogic Security Provider (Embedded LDAP)** option, the CMWS User Information screen appears. Continue with step 21.

   ■ If you select **External Security Provider** option, the External Security Provider Connection Information screen appears. Continue with step 20.

20. Enter the External Security Provider information, by doing the following:

   a. In the **LDAP Server Host Name** field, enter the host name for the external LDAP server.

   b. In the **LDAP Server Port Number** field, enter the port number for the external LDAP server.

   c. In the **LDAP Server User Name** field, enter the user name for the external LDAP server.

   d. In the **LDAP Server Password** field, enter the password for the external LDAP server.

   e. In the **User Base DN** field, enter the user base DN.

   f. In the **Group Base DN** field, enter the group base DN.

   g. Click **Next**.

The CMWS User Information screen appears.

21. Enter the CMWS User information, by doing the following:

   a. In the **User Name** field, enter the user name for the CMWS user.

   b. In the **Password** field, enter the password for the user name that you provided in the **User Name** field.

   c. In the **Confirm Password** field, enter the password again.

   d. Click **Next**.

The UIM User Information (Optional) screen appears.

22. In the Unified Inventory Management User Information (Optional) screen, do the following:

   a. In the **User Name** field, enter the user name for the UIM user.

   This user accesses and uses Unified Inventory Management.

   b. In the **Password** field, define a password for the UIM user.

   **Note:** The UIM user password can be a maximum of 12 letters long, and should contain at least one numeric value and one capital letter. For example, Weblogic123.

   Also, the user name must not be part of the password.
In the **Confirm Password** field, enter the password again, to confirm it.

c. Click **Next**.

The Do you want to create the UIM file store or JDBC store? screen appears.

23. Select the type of store to create, and click **Next**.

---

**Note:** If File Store is selected, a file store (inv_jms_store) is created at the *Domain_Home/UIM* location.

---

The SSL enable Information screen appears.

24. Select whether or not to enable SSL, and click **Next**.

---

**Note:** If you select **Yes**, enter the **Port** number and click **Next**.

---

The Do you want to deploy MapViewer? screen appears.

25. Select whether or not to deploy MapViewer from the default location:

- If you select **Yes** and click **Next**, the Summary screen appears.
  Continue with step 26.
- If you select **No** and click **Next**, the MapViewer information screen appears.
  Do the following:
  
  a. If MapViewer is already installed, enter the URL for MapViewer in the **URL** field.
  
  b. Click **Next**.
  
  The Summary screen appears.

26. Review the selections you have made in the preceding screens, and click **Install**.

The Install screen appears.

27. You can view the installation progress.

On successful installation of Unified Inventory Management, the End of Installation screen appears.

---

**Note:** Record the URL that is displayed in the End of Installation screen, to access UIM.

---

28. Install and configure the aspectJ libraries, which are not included in the UIM installation. To do this:

a. Download the **aspectj-1.7.x.jar** library from the following web site:


b. Manually extract the **aspectj-1.7.x.jar** file to a temporary folder (aspectj-1.7.x), enter the following command, replacing *x* with the appropriate number:

   ```java
   java -jar aspectj-1.7.x.jar
   ```

c. Copy the **aspectjweaver.jar** file from the **aspectj-1.7.x/lib** folder to the **UIM_Home/lib** folder.
Installing UIM by Using Silent Install

Use silent install when you are installing UIM using the same configuration repeatedly. Silent install does not use the installer UI, instead it uses a response file that must be setup with the configuration values required for your specific installation. Silent install runs in the background and is not visible to the user.

About the Response File

The installer uses a response file, which contains a pre-defined set of values, such as server connection details.

The following two response file templates come as part of the UIM installation package:

- `oracle.communications.uim.Complete.rsp`
  
  Use this file template if you are doing a complete installation.

- `oracle.communications.uim.Custom.rsp`
  
  Use this file template if you are doing a custom installation.

The response file templates contain all the fields that the installer requires values for to connect to various servers during the silent, unattended installation.

When you untar the UIM package, the response file templates are saved in the `Response` folder at the following location:
Installing UIM by Using Silent Install

Installing Unified Inventory Management

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uim/Disk1/stage/Response

Populate the response file with the required server and connection values for the installer to use during installation, before you begin the silent installation. The provided response file is a template with pre-defined places where you fill in the required values of the required type. Shown here is sample section of a response file:

```plaintext
#Name       : DATABASE_TYPE
#Datatype   : String
#Description:
#Example: DATABASE_TYPE =
#---------------------------------------------------------------
DATABASE_TYPE="Non Clustered-DB"
#---------------------------------------------------------------
#Name       : MANAGED_SERVER_NAME
#Datatype   : String
#Description:
#Example: MANAGED_SERVER_NAME =
#---------------------------------------------------------------
MANAGED_SERVER_NAME="Managed_Server_1"
```

In this section of the response file sample, you would provide values for the following:

DATABASE_TYPE=
MANAGED_SERVER_NAME=

Similarly, provide values for all variables described in the response file.

Populating the Response File

To populate the response file manually:

1. Navigate to the following directory:
   
uim/Disk1/stage/Response

2. Open the appropriate .rsp template and make a copy for your current requirement.

3. Enter the required input values in the provided locations.

Starting Silent Install

Before you begin installing UIM by using silent install, ensure that you have provided all required input values in the response file template.

To install UIM by using silent install:

1. Use the following command, where path is the response file location, to start the installation:

   ```
   ./runInstaller -responseFile path -silent -jreloc jre_Path
   ```

   Where path is the response file location and jre_Path is the JRE location.
   The installation will run silently in the background.

2. When the installation completes, manually shut down all of the servers.

3. Install and configure the aspectJ libraries, which are not included in the UIM installation. To do this:
   
a. Download the aspectj-1.7.x.jar library from the following web site:

b. Manually extract the `aspectj-1.7.x.jar` file to a temporary folder (`aspectj-1.7.x`), enter the following command, replacing `x` with the appropriate number:

```
java -jar aspectj-1.7.x.jar
```

c. Copy the `aspectjweaver.jar` file from the `aspectj-1.7.x/lib` folder to the `UIM_Home/lib` folder.

Note: The following step is required if dynamic extensibility (for custom extension points) is to be used.

d. Copy the `aspectjrt.jar` and `aspectjtools.jar` files from the `aspectj-1.7.x/lib` folder to the `UIM_Home/lib` folder.

4. Perform the UIM post-installation tasks. See "Unified Inventory Management Post-Installation Tasks" for more information.

5. Restart the Administration server by using the following command from within the `Domain_Home/bin` directory:

```
./startWebLogic.sh
```

6. Restart the managed servers by using the following command:

```
./startUIM.sh Managed_Server_Name Admin_URL
```

7. After the installation is complete, open the following file to get the URL to access UIM:

```
Oracle_Home/install/readme.txt
```

For example: `/opt/uim/OracleCommunications/install/readme.txt`

8. Copy and paste the URL in a Web browser and press **Enter** to access UIM.

You can now access the UIM application.

For information on verifying the successful installation of UIM, see "Verifying the Unified Inventory Management Installation".
Unified Inventory Management Post-Installation Tasks

This chapter provides instructions for Oracle Communications Unified Inventory Management (UIM) post-installation tasks.

Post-installation tasks for UIM include:

- Configuring a Trusted Certificate for UIM
- Deploying UIM Cartridges
- Connecting the UIM Web Service Interface to a Remote Application
- Configuring Ehcache for the Cluster

Configuring a Trusted Certificate for UIM

Oracle WebLogic Server provides a default certificate that automatically configures the Secure Sockets Layer (SSL) settings in your Web browser. To use another certificate, you must manually reconfigure SSL.

**Note:** UIM uses a default certificate provided by Oracle WebLogic Server. As a result, when you connect to the UIM UI for the first time, the Web browser displays a warning page with a message indicating that the security certificate presented is not issued by a trusted certificate authority.

This is expected behavior. Accept this untrusted certificate to continue to connect to the UIM UI.

For information about configuring SSL for UIM, see *UIM System Administrator’s Guide*.

Deploying UIM Cartridges

Oracle recommends that you deploy all of the base cartridges into UIM. Base cartridges are located in the `UIM_Home/cartridges/base` directory. For information on base cartridges, see *UIM Cartridge and Technology Pack Guide*.

**Important:** The `ora_uim_mds_cartproj.zip` and `ora_uim_model_cartproj.zip` cartridges are located in this same directory, but these two cartridges should not be deployed into UIM.
You can deploy a cartridge into UIM from Oracle Communications Design Studio, or from the Cartridge Deployer Tool. Design Studio can only deploy a single cartridge; it cannot deploy a cartridge that contains other cartridges, such as a technology pack. For instructions on how to deploy a cartridge into UIM from Design Studio, see the Design Studio Help. For instructions on how to deploy a cartridge using the Cartridge Deployer Tool, see UIM Cartridge and Technology Pack Guide.

**Note:** When working in a Development Environment, with several cartridge deployments, you might see NullPointerException and ORA-01653 errors. See Knowledge Article 1505444.1 - NullPointerException and 'ORA-01653: unable to extend table DEV_MDS.MDS_COMPONENTS' Errors When Deploying UIM Cartridges to resolve the errors.

---

**Connecting the UIM Web Service Interface to a Remote Application**

Oracle recommends that you create a SAF agent between the UIM WebLogic server and a remote application server. Oracle recommends this SAF agent for the Web Service interfaces to ensure reliable communication.

Figure 6–1 illustrates an example SAF configuration between the Web Service interface on UIM and a Web Service client on a remote application, in this case, the Oracle Order Service and Management (OSM) application.

*Figure 6–1  SAF Agent Configuration Between UIM and a Remote Application (OSM)*

In this example, an OSM SAF agent sends requests to the UIM request queue, and UIM returns responses through the UIM SAF agent to the OSM reply-to queue.
For detailed instructions for creating SAF queues and topics between UIM and OSM, see Knowledge Article 1431235.1 - Configuring WebLogic Resources for OSM Integration With ASAP And UIM On Different Domains on the My Oracle Support web site:

https://support.oracle.com

This article is applicable to any remote application that uses a WebLogic JMS server to send and receive Web Service messages.

**Configuring Ehcache for the Cluster**

This section provides instructions for configuring the **ehcache** file for the clustered server.

The configuration tasks include:

- Enabling Ehcache for the Cluster
- Enabling Ehcache Manual Discovery
- Enabling Ehcache for JGroups

**Enabling Ehcache for the Cluster**

To enable ehcache for the cluster, do the following:

1. Ensure you are logged in to the shared disk storage through a command window.
2. Make a backup copy of `ehcache.xml`. For example, you can copy the file to `ehcache.xml.single`.
3. Open the `ehcache.xml` file in a text editor.
4. Scroll down to the `cacheManagerPeerProviderFactory` entry.
5. Change the value of the `port` entry to any unused port number.
6. Save and close the file.

**Enabling Ehcache Manual Discovery**

Use the following checklist to verify that manual discovery is the correct setting to use, for peer discovery:

- By default, the peer discovery setting for ehcache is automatic (which employs multi-casting). Multi-cast is known to be unreliable, has bandwidth overload issues and is unsecure. If you feel multi-casting is not the right setting for your environment, perform the steps to enable the ehcache manual discovery setting for the cluster.

- The `cacheManagerPeerListenerFactory` port defined in the `ehcache.xml` file shouldn’t conflict with any other process running on the same port. Use the `netstat` command or `lsof` command to find out which ports are available.

- When the ehcache manual discovery setting is enabled, instead of automatic discovery, the port numbers in the `rmi URLS` setting should be same as the `cacheManagerPeerListenerFactory` port defined in the `ehcache.xml` file.

- In case of single node cluster (i.e different managed servers on the same node), before starting each managed server the `cacheManagerPeerListenerFactory` port should be modified so that each managed server gets started with a unique `cacheManagerPeerListenerFactory` port to listen to and avoiding any port binding exceptions.
To enable the ehcache manual discovery setting, do the following:

1. Ensure you are logged in to the shared disk storage through a command window.
2. Open the `ehcache.xml` file in a text editor.
3. Scroll down to the `cacheManagerPeerProviderFactory` entry.
4. Comment out the `cacheManagerPeerProviderFactory` entry.

   Example of automatic discovery entry:

   ```xml
   <cacheManagerPeerProviderFactory
     class="net.sf.ehcache.distribution.RMICacheManagerPeerProviderFactory"
     properties="peerDiscovery=automatic, multicastGroupAddress=230.0.0.1, multicastGroupPort=4446"/>
   ``

5. Add the following entry to the file:

   Example of manual discovery entry:

   ```xml
   <cacheManagerPeerProviderFactory
     class="net.sf.ehcache.distribution.RMICacheManagerPeerProviderFactory"
   ```

   where `host1` and `host2` are host names of managed servers, correspondingly

   **Note:** The port values for the `host1` and `host2` are for example purposes only. Use the `netstat` command or `lsof` command to find an available port.

6. Change the value of the `port` entry to any unused port number.
7. Save and close the file.

**Enabling Ehcache for JGroups**

To enable the ehcache for Jgroups (UDP + Unicasting), do the following:

1. Ensure you are logged in to the shared disk storage through a command window.
2. Open the `ehcache.xml` file in a text editor.
3. Scroll down to the `cacheManagerPeerProviderFactory` entry.
4. Comment out the `cacheManagerPeerProviderFactory` entry which uses the "RMICacheManagerPeerProviderFactory", which by default makes the transport mechanism as multicast.

   Example of automatic discovery entry:

   ```xml
   <!-- <cacheManagerPeerProviderFactory
     class="net.sf.ehcache.distribution.RMICacheManagerPeerProviderFactory"
     properties="peerDiscovery=automatic, multicastGroupAddress=230.0.0.1, multicastGroupPort=4446"/> -->
   ```

5. Add the following entry to the file:

   Example of manual discovery entry:

   ```xml
   <cacheManagerPeerProviderFactory
     class="net.sf.ehcache.distribution.jgroups.
   ```
JGroupsCacheManagerPeerProviderFactory*  
properties="connect=UDP(ip_mcast=false;mcast_addr=224.0.0.35;  
mcast_port=45566;ip_ttl=32;mcast_send_buf_size=150000;  
mcast_recv_buf_size=80000):PING(gossip_host=adminserverhost;gossip_port=5555;  
gossip_refresh=15000;timeout=2000;num_initial_members=3):MERGE2:FD_SOCK:  
VERIFY_SUSPECT:pbcast.NAKACK:UNICAST:pbcast.STABLE:FRAG:pbcast.GMS"  
propertySeparator="::" />

Note: The protocol stack with UDP and PING as the bottom protocols uses IP multicasting by default to send messages to all members (UDP) and for discovery of the initial members (PING). However, if multicasting cannot be used, the UDP and PING protocols can be configured to send multiple unicast messages instead of one multicast message (UDP) and to access a well-known server (GossipRouter) for initial membership information (PING).

To configure UDP to use multiple unicast messages to send a group message instead of using IP multicasting, the ip_mcast property has to be set to false.

To configure PING to access a GossipRouter instead of using IP multicast the following properties have to be set:

- **gossip_host**: The name of the host on which GossipRouter is started.
- **gossip_port**: The port on which GossipRouter is listening.
- **gossip_refresh**: The number of milliseconds to wait before refreshing the address entry of the GossipRouter.

Before any members are started, the GossipRouter has to be started and the administration server is the ideal candidate to be the Gossip Router.

6. Save and close the file.
7. Start the Gossip router, by using the following command:

    java org.jgroups.stack.GossipRouter -port gossip_port -bindaddress gossip_host
8. Configure the caches in the ehcache.xml file to use JGroupCacheReplicatorFactory. For example:

```xml
<cache name="inv"
       maxElementsInMemory="10000"
       eternal="true"
       timeToIdleSeconds="0"
       timeToLiveSeconds="0"
       overflowToDisk="false"
       memoryStoreEvictionPolicy="LRU">
  <cacheEventListenerFactory
      class="net.sf.ehcache.distribution.jgroups.JGroupsCacheReplicatorFactory"
      properties="replicateAsynchronously=false, replicatePuts=true,
      replicateUpdates=true, replicateUpdatesViaCopy=true, replicateRemovals=true "/>
</cache>
```

---

**Note:** The GossipRouter is essentially a lookup service for groups and members. It is a process that runs on a well-known host and port and accepts GET (group) and REGISTER(group, member) requests. The REGISTER request registers a member's address and group with the GossipRouter. The GET request retrieves all member addresses given a group name. Each member has to periodically (gossip_refresh) re-register their address with the GossipRouter, otherwise the entry for that member will be removed (accommodating for crashed members).

The property ip_mcast is set to false in UDP and the gossip properties in PING define the GossipRouter to be on the local host at port 5555 with a refresh rate of 15 seconds. If PING is parameterized with the GossipRouter's address and port, then gossiping is enabled, otherwise it is disabled. If only one parameter is given, gossiping will be disabled. Make sure to run the GossipRouter before starting any members, otherwise the members will not find each other and each member will form its own group.
Verifying the Unified Inventory Management Installation

This chapter describes how to verify that Oracle Communications Unified Inventory Management (UIM) is installed correctly.

Checking the Installation Logs

You can verify the UIM installation by viewing the installation logs. The installation logs can be found at CentralInventorylocation/logs. You can use the following log files to monitor installation and post-installation events:

- installActionsTimeStamp.log
- oraInstallTimeStamp.err
- dbScriptsTimeStamp.log
- silentInstall(TimeStamp.log (for Silent Mode installation)

Checking the State of Installed Components

You can verify that UIM is installed by checking the state of all installed components.

To check the state of all installed components:

1. Log in to the WebLogic Administration Server Console.
2. In the left section, under Domain Structure, click Deployments.
   The Summary of Deployments page appears.
3. Ensure that all of the managed servers are running.
4. If UIM is installed successfully, the following deployments appear in the Active state:
   - cartridge_management_ws
   - DMS Application
   - em
   - FMW Welcome Page Application
   - oracle.communications.inventory
   - oracle.communications.inventory.cartridgeadapter
   - oracle.communications.inventory.javadoc
Logging In to Unified Inventory Management

You can verify that UIM is installed by logging in to the UIM application.

To log in to UIM:

1. Open a Web browser. See Table 2–3, "Required Client-Side Software" for supported Web browsers.
2. Enter the URL as provided by the installer at the end of the installation.
3. Press the Enter key.
   The Unified Inventory Management login page appears.
4. Do the following:
   a. In the User Name field, enter the UIM user name.
   b. In the Password field, enter the password for the UIM user name.

   **Note:** Use the same UIM user name and password that you provided when you installed UIM.

The Unified Inventory Management home page appears, verifying that UIM is installed successfully.
Troubleshooting the Unified Inventory Management Installation

This chapter describes how to troubleshoot the Oracle Communications Unified Inventory Management (UIM) installation. To verify that the installation was successful, see "Verifying the Unified Inventory Management Installation".

Common Problems and Their Solutions

This section describes the following installation problems, and how to resolve them:

- Problem: Installer Fails to Update Application KEYSTORE Table
- Problem: Installer Fails to Update Application INFORMATION Table
- Problem: Database Server and Application Server Have Different Dates
- Problem: Unable to Create the UIM Administrator User Except During Installation
- Problem: Unable to Run SQL Script
- Problem: Timers are Not Started
- Problem: Unable to Load Performance Pack

Problem: Installer Fails to Update Application KEYSTORE Table

If the installer fails to update the application KEYSTORE table, the installer is interrupted and the following error message appears:

Unable to update application key store 'AppKeyStore', please check log files for more details. Refer UIM documentation for executing this step manually.

Solution

Click the Continue button to complete the installation. Manually update the application KEYSTORE table when the installation is complete.

To manually update the application KEYSTORE table:

1. Navigate to Oracle_HOME/POMSClient.
2. Execute the following command:

   ```
   Java_HOME/bin/java -javaagent:lib/eclipselink.jar -cp POMSClient.jar oui.j2ee.poms.client.UpdateAppKeyStore DB_HostName DB_Port DB_ServiceName UIM_Schema_UserName UIM_Schema_Password default aes 128
   ```

   where:
Common Problems and Their Solutions

- **DB_HostName** is the database host name
- **DB_Port** is the database port number
- **DB_ServiceName** is the database service name or system ID
- **UIM_Schema_UserName** is a valid UIM database user name for the schema
- **UIM_Schema_Password** is the password for the UIM schema user name

3. Connect to the application KEYSTORE table and verify the following:
   - That the COMPONENT column has a value of `default`.
   - That the ENCRYPTALGORITHM column has a value of `aes`.
   - That the KEYLENGTH column has a value of 128.

**Problem: Installer Fails to Update Application INFORMATION Table**

If the installer fails to update the application INFORMATION table, the installer is interrupted and the following error message appears:

Unable to update application details 'ApplicationInfo', please check log files for more details. Refer UIM documentation for executing this step manually.

**Solution**

Click the **Continue** button to complete the installation. Manually update the application INFORMATION table when the installation is complete.

To manually update the application INFORMATION table:

1. Navigate to `Oracle_Home/POMSClient`.
2. Execute the following command:

   ```
   Java_Home/bin/java -javaagent:lib/eclipselink.jar -cp POMSClient.jar
   oui.j2ee.poms.client.UpdateAppInfoTable DB_HostName DB_Port DB_ServiceName UIM_Schema_UserName UIM_Schema_Password "UIM" UIM_Version SUCCESS
   ```

   where:
   - **DB_HostName** is the database host name
   - **DB_Port** is the database port number
   - **DB_ServiceName** is the database service name or system ID
   - **UIM_Schema_UserName** is a valid UIM database user name for the schema
   - **UIM_Schema_Password** is the password for the UIM schema user name
   - **UIM_Version** is the version of UIM being installed

3. Connect to the application INFORMATION table and verify the following:
   - That the NAME column has a value of `UIM`.
   - That the VERSION column has the correct version of UIM.
   - That the STATUS column has a value of `SUCCESS`.

**Problem: Database Server and Application Server Have Different Dates**

If the DB server and the Application server have different dates, then the two servers will not be able to communicate with each other.
Solution
Ensure that the Database server and Application server dates are set close to each other. They can have different dates due to time zone differences, but they should not be in different weeks.
See Oracle Database Globalization Support Guide for information and instructions on setting the date.

Problem: Unable to Create the UIM Administrator User Except During Installation
If the UIM Administrator user is not created during installation, then the user will not be able to login to the UIM user interface or the UIM Web services.

Solution
To create the UIM Administrator user, after UIM the UIM installation has been completed, perform the following:
1. Log in to the WebLogic Administration Server Console.
2. In the left section, under Change Center, click Lock & Edit.
3. In the left section, under Domain Structure, click SecurityRealms.
   The Summary of Security Realms page appears.
4. Click myrealm.
   The Settings for myrealm page appears.
5. Click the Users and Groups tab.
6. Click the Groups tab, click New and enter the following group properties:
   ■ Group name
   ■ Group description
   ■ Provider (select from the list)
7. Create the new group, click OK.
8. Click the Users tab, click New and enter the following user properties:
   ■ User name
   ■ User description
   ■ Provider (select from the dropdown list)
   ■ User password
9. Create the new user, click OK.
10. Click Release Configuration.
11. Log in to the Enterprise Manager console.
12. In the left section, expand WebLogic Domain and select the domain name.
13. Right-click the domain name, select Security, and then select Application Roles.
   The Application Roles page appears.
14. In the Application Stripe field, select oracle.communications.inventory from the dropdown list, and then click the search icon.
   A list of role names will appear.
15. Select the **uimuser** role and click **Edit**.

   The Edit Application Role: uimuser page appears.

16. In the Members section, click **Add**.

   The Add Principal dialog box appears.

17. In the **Type** field, select **Group** from the dropdown list and then click the search icon.

18. Select the group created in steps 6 and 7, then click **OK**.

19. Click **OK** to save and close the Edit Application Role: uimuser page.

**Problem: Unable to Run SQL Script**

If the number of processes is not set high enough to accommodate your installation, the installer is interrupted and the following error message appears:

```
Unable to run SQL Script.
```

If you click **Retry**, the same error message appears.

If you click **Continue**, errors regarding JMS connections and JDBC connections not being found are encountered.

After the installation completes, you may notice that several database resources in the WebLogic domain were not created. In this situation, the UIM installer log reflects the following:

```
Exception Name: oui.j2ee.core.exception.JOUIUnabletoConnectException
Exception String: Error: Unable to run SQL Script.
SQL Exception: Error Code = 17002, SQL State = null,
Oracle DB Message = Io exception: Connection refused
.DESCRIPTION=(TMP=)(VSNUM=186647296) (ERR=12516) (ERROR_STACK=
  (ERROR=(CODE=12516) (EMFI=4)))).
Exception signaled in a connect operation.
Please check installer log files for more details.
Exception Severity: 1
```

And the UIM installer error log reflects the following:

```
INFO: Creating SQL script execution log file at
[scratch/share/domains/clusterUim723b240/UIM/scripts/llr_log.txt]
Sep 4, 2013 2:29:12 PM oui.j2ee.core.common.JDBCComponent
getEncryptedConnectionImpl
SEVERE: SQL Exception: Error Code = 17002, SQL State = null, Oracle DB Message =
Io exception: Connection refused
.DESCRIPTION=(TMP=)(VSNUM=186647296) (ERR=12516) (ERROR_STACK=
  (ERROR=(CODE=12516) (EMFI=4)))).
Sep 4, 2013 2:29:12 PM oui.j2ee.actions.database.AI_RunSQLScriptSP insta
SEVERE: Error: Unable to run SQL Script. SQL Exception: Error Code = 17002, SQL
State = null , Oracle DB Message = Io exception: Connection refused
.DESCRIPTION=(TMP=)(VSNUM=186647296) (ERR=12516) (ERROR_STACK=
  (ERROR=(CODE=12516) (EMFI=4)))). Exception signaled in a connect operation.
Please check installer log files for more details.
```

This problem is encountered when your total number of processes exceeds the specified number of processes. The problem can occur when running multiple managed servers, which multiplies the number of database connections used. For example, if you have 3 persistent stores per managed server, and you have 20 managed servers, 60 processes are consumed just for the persistent stores.
Solution
Change the number of processes to a higher number. The default number of processes is 150 and Oracle recommends that this value be set to 2000 when installing the database, as described in "Tuning the Database".

To change the number of processes:

1. Open a command prompt and login to sqlplus.
2. Execute the following command to determine the current number of processes:
   
   ```sql
   show parameter process;
   ```

   The output shows the following:

<table>
<thead>
<tr>
<th>NAME</th>
<th>TYPE</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>aq_tm_processes</td>
<td>integer</td>
<td>1</td>
</tr>
<tr>
<td>cell_offload_processing</td>
<td>boolean</td>
<td>true</td>
</tr>
<tr>
<td>db_writer_processes</td>
<td>integer</td>
<td>1</td>
</tr>
<tr>
<td>gcs_server_processes</td>
<td>integer</td>
<td>0</td>
</tr>
<tr>
<td>global_txn_processes</td>
<td>integer</td>
<td>1</td>
</tr>
<tr>
<td>job_queue_processes</td>
<td>integer</td>
<td>1000</td>
</tr>
<tr>
<td>log_archive_max_processes</td>
<td>integer</td>
<td>4</td>
</tr>
<tr>
<td>processes</td>
<td>integer</td>
<td>150</td>
</tr>
<tr>
<td>processor_group_name</td>
<td>string</td>
<td></td>
</tr>
</tbody>
</table>

3. Execute the following command to change the number of processes:
   
   ```sql
   alter system set processes=2000 scope=spfile;
   ```

4. Execute the following command to validate the current number of processes:
   
   ```sql
   show parameter process;
   ```

The output should show the following:

<table>
<thead>
<tr>
<th>NAME</th>
<th>TYPE</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>aq_tm_processes</td>
<td>integer</td>
<td>1</td>
</tr>
<tr>
<td>cell_offload_processing</td>
<td>boolean</td>
<td>true</td>
</tr>
<tr>
<td>db_writer_processes</td>
<td>integer</td>
<td>1</td>
</tr>
<tr>
<td>gcs_server_processes</td>
<td>integer</td>
<td>0</td>
</tr>
<tr>
<td>global_txn_processes</td>
<td>integer</td>
<td>1</td>
</tr>
<tr>
<td>job_queue_processes</td>
<td>integer</td>
<td>1000</td>
</tr>
<tr>
<td>log_archive_max_processes</td>
<td>integer</td>
<td>4</td>
</tr>
<tr>
<td>processes</td>
<td>integer</td>
<td>2000</td>
</tr>
<tr>
<td>processor_group_name</td>
<td>string</td>
<td></td>
</tr>
</tbody>
</table>

Problem: Timers are Not Started
If the timers are not started for any reason, you need to manually restart them.

Solution
To restart the timers:

1. Log in to the WebLogic Server Administration Console.
3. Expand oracle.communications.inventory.
4. Expand EJBs.
5. Click the TimerBean link.
   The Settings for TimerBean page appears.
6. Click the Control tab.
7. Select a timer and click Activate Timers.
   This restarts the selected timer.

**Problem: Unable to Load Performance Pack**

This procedure is only applicable if you are running WebLogic Server 10.3.6 on a Solaris platform with a 64-bit JVM.

There is a known issue that is encountered when starting the WebLogic server. Specifically, the 64-bit native libraries are not loaded correctly. To confirm that you have this issue, search the standard output log for the following error:

Unable to load performance pack

If you have this issue, do the following:

1. Back up and edit the `domain_home/bin/setDomainEnv.sh` file.
2. Add the following lines to the end of the file:
   ```
   LD_LIBRARY_PATH_64=${BEA_HOME}/wlserver_10.3/server/native/solaris/sparc64
   export LD_LIBRARY_PATH_64
   ```
3. Save and close the file.

**Reporting Problems**

Before calling Oracle Global Support, perform the following:

- Problems can often be fixed by shutting down UIM and restarting the computer that it runs on. See **UIM System Administrator’s Guide** for more information.
- If that does not solve the problem, the first troubleshooting step is to look at the error log for the application or process that reported the problem.
- Prepare and gather the following pertinent information:
  - A clear and concise description of the problem, including when it began to occur.
  - Relevant portions of the relevant log files.
  - Relevant configuration files.
  - Recent changes in your system, even if you do not think they are relevant.
  - List of all UIM components and patches installed on your system.

When you are ready, report the problem to Oracle Global Support.
Upgrading Unified Inventory Management

This chapter explains how to upgrade your existing system to the latest release of Oracle Communications Unified Inventory Management (UIM).

This chapter explains how to recover your system after an upgrade failure. See "About Rolling Back UIM" for more information.

In this chapter, the release you are upgrading from is called the old release. The release you are upgrading to is called the new release.

About Upgrading UIM

Upgrading to a new release of UIM consists of the following tasks:

- Planning the upgrade
- Performing the pre-upgrade tasks
- Upgrading UIM
- Performing the post-upgrade tasks

Supported Upgrade Paths

This release of UIM supports the following direct upgrade paths:

- From release 7.2.0 to release 7.2.4
- From release 7.2.2 to release 7.2.4
- From release 7.2.3 to release 7.2.4

Note: If you are currently at UIM 7.1.x or earlier, you must first upgrade to UIM 7.2.x and then you can upgrade to UIM 7.2.4.

Planning Your Upgrade

Depending on the components affected by the upgrade, your upgrade team may include the following:

- A database administrator, to manage the database upgrade and tune the database.
- A system integrator, to handle new and existing customizations.
- A system administrator, to manage the WebLogic Server and UIM software upgrade.
- A UNIX administrator, to manage accounts, network setup, and IP configurations.
Identify who might be affected by the upgrade. For example:

- You might need to give your system administrators and UIM users notice of any system downtime.
- Tell your system administrators in advance about any changes to the system architecture (for example, Oracle database, client, or WebLogic Server upgrades).
- Train your administrators, users, cartridge developers, or system integrators on new functionality introduced by the upgrade that has an impact on their role.

You might need to make changes to your system after the upgrade is complete to accommodate new or modified features or functionality. For example, if the new release provides new security functionality, additional system configuration steps may be required. See "Upgrade Impacts" for more information.

The best way to estimate the duration of an upgrade is to perform the upgrade procedure on a test system with a copy of the production data. See "Testing the Upgrade in a Test Environment" for more information.

It is not necessary to shut down UIM or the UIM WebLogic Server domain before an upgrade. However, you must ensure that UIM is not running any operations. Oracle recommends scheduling your upgrade during non-peak hours to minimize the disruption to your operations.

Testing the Upgrade in a Test Environment

Oracle recommends running the upgrade procedure on a test system with a copy of your production data before upgrading your production system. Test the upgrade by doing the following:

- Successfully completing all the pre-upgrade, upgrade, and post-upgrade tasks.
- Comparing the default behavior between the old and the new releases.
- Recreating any custom configurations and extensions.
- Confirming that all new behavior and functionality works.
- Ensuring that the database tables are properly installed.
- Ensuring that the database data is correct.
- Starting the WebLogic Server domain.
- Ensuring that users and user permissions are correct.
- Ensuring that productized and custom cartridges build and deploy properly.
- Logging into UIM and verifying the version number of installed components.

Upgrade Impacts

This section explains any important system changes introduced by an upgrade. New features and new functionality are described in UIM Release Notes.

Upgrade Impacts From 7.2.x to 7.2.4

Upgrading to UIM 7.2.4 applies the following changes:

- Fusion Middleware Changes
- Java Development Kit Changes
Upgrade Impacts

- WebLogic Server Changes
- Database Software Changes
- Database Schema Changes
- Application Component Changes
- Design Studio Changes
- Cartridge Changes
- Localization Changes

Fusion Middleware Changes
If upgrading from:
- UIM 7.2.0: You must upgrade your version of Application Development Runtime (and apply applicable patches), and install Repository Creation Utility.
- UIM 7.2.2: You must upgrade your version of Application Development Runtime (and apply applicable patches), and install Repository Creation Utility.
- UIM 7.2.3: You may need to upgrade your version of Application Development Runtime (and apply applicable patches), depending on the version you are currently using in UIM 7.2.3. You must install Repository Creation Utility.

See "Software Requirements" for version information regarding Oracle Fusion Middleware Application Development Runtime (and applicable patches) and Repository Creation Utility.

See "Pre-Upgrade Tasks (7.2.x to 7.2.4)" for more information.

Java Development Kit Changes
This section applies to all supported upgrade paths.

This version of UIM requires an updated version of the Java Development Kit (JDK). Regardless of the UIM release from which you are upgrading, you must update the JDK version. See "Software Requirements" for version information regarding Sun Hotspot (JDK) for Linux or Solaris.

See "Pre-Upgrade Tasks (7.2.x to 7.2.4)" for more information.

WebLogic Server Changes
If upgrading from:
- UIM 7.2.0: You must upgrade your version of WebLogic Server and apply applicable patches.
- UIM 7.2.2: You do not need to upgrade your version of WebLogic Server, but you do need to apply applicable patches.
- UIM 7.2.3: You do not need to upgrade your version of WebLogic Server, but you do need to apply applicable patches.

See "Software Requirements" for version information regarding Oracle WebLogic Server Enterprise Edition and applicable patches.

See "Pre-Upgrade Tasks (7.2.x to 7.2.4)" for more information.

Database Software Changes
This section applies to all supported upgrade paths.
The new version of UIM supports the same Oracle Database software version as the old versions of UIM, as well as a new version of the Oracle Database software. See "Software Requirements" for more information.

If you decide to upgrade to a new version of the Oracle Database software, you must also update your database client software.

See "Pre-Upgrade Tasks (7.2.x to 7.2.4)" for more information.

**Database Schema Changes**
This section applies to all supported upgrade paths.

The new version of UIM requires an updated database schema. Regardless of the UIM release from which you are upgrading, and regardless of whether you opt to upgrade the Oracle Database software, you must update the database schema.

See "Pre-Upgrade Tasks (7.2.x to 7.2.4)" for more information.

**Application Component Changes**
The Oracle Application Installer updates all the UIM components.

**Design Studio Changes**
This section applies to all supported upgrade paths.

This version of UIM requires an updated version of Oracle Communications Design Studio. See "Software Requirements" for version information regarding Design Studio.

Design Studio can be set up before or after you upgrade UIM. See the Design Studio installation documentation for more information. Rather than upgrading Design Studio, install the new version and keep the old version until after you have finished upgrading UIM.

**Cartridge Changes**
You must undeploy cartridges that you do not want to migrate to the new release before beginning the upgrade. See "Pre-Upgrade Tasks (7.2.x to 7.2.4)" for more information.

After the upgrade is complete, cartridges must be migrated to the new release of UIM using the Design Studio Cartridge Migration Tool. It is possible that migrated cartridges contain minor compilation errors that prevent them from building and deploying. If a cartridge fails to build, open it in Design Studio and correct any compilation errors. See "Post-Upgrade Tasks (7.2.x to 7.2.4)" for more information.

**Localization Changes**
The Oracle Universal Installer updates the localization pack to be compatible with the new release of UIM, however any new fields and labels introduced in the new release are not localized. Edit the localization pack for the new fields and labels. See "Post-Upgrade Tasks (7.2.x to 7.2.4)" for more information.

**Upgrading from 7.2.x to 7.2.4**

This section details the upgrade procedure to upgrade UIM from 7.2.x to 7.2.4, where 7.2.x is 7.2.0, 7.2.2, or 7.2.3. In other words:

- From release 7.2.0 to release 7.2.4
- From release 7.2.2 to release 7.2.4
Pre-Upgrade Tasks (7.2.x to 7.2.4)

Complete all of the following pre-upgrade tasks before upgrading UIM:

2. Back up the UIM WebLogic Server domain. See the WebLogic Server documentation for more information.

**Note:** Verify that the file/folder being backed up meets the file size or pathname length requirements for the backup utility being used. For example, the maximum pathname length for the tar application is 256 characters.

3. If the old version of your UIM user interface was customized, back up the changes.

**Caution:** UIM does not maintain backward compatibility for the user interface. If the old version of your UIM user interface was customized and you do not back up the changes, you will lose them. (You will re-apply the changes when performing the post-upgrade tasks.)

4. Stop the UIM Domain Servers.
5. If applicable, upgrade the Fusion Middleware Application Development Runtime:
   - If you are upgrading from UIM 7.2.0 or UIM 7.2.2:
     a. Upgrade the Fusion Middleware Application Development Runtime.
     b. Apply any required patches. See "Installing Patches" for more information.
   - If you are upgrading from UIM 7.2.3, you may need to upgrade your version of Fusion Middleware Application Development Runtime, depending on the version you are currently using in UIM 7.2.3. See "Software Requirements" for version information regarding Fusion Middleware Application Development Runtime and any applicable patches.
     If you determine that you do need to upgrade your Fusion Middleware Application Development Runtime, perform steps a and b, above.
6. Upgrade the Java Runtime Environment (JRE), which is contained in the Java Development Kit (JDK), by following the steps documented in the knowledge article How to Upgrade the JDK Used by Oracle Web Logic Server UNIX Installations to a Different Version [ID 1309855.1].
7. If applicable, upgrade WebLogic Server:
   - If you are upgrading from UIM 7.2.0:
     a. Upgrade WebLogic Server to 10.3.6 and ADF 11.1.1.7 following the steps documented in the knowledge article How to upgrade a WLS domain extended with ADF libraries [ID 1408663.1].
     b. Apply any required patches. See "Installing Patches" for more information.
■ If you are upgrading from UIM 7.2.2 or from UIM 7.2.3:
  a. Apply any required patches. See "Installing Patches" for more information.

8. Update the setDomainEnv.sh files for the UIM domains to use the new JDK:
  a. Go to Domain_Home/bin.
  b. Modify the following entries in the setDomainEnv.sh file:
     - Find the entry
       ```
       SUN_JAVA_HOME="path/jdk1.6.0_update"
       ```
       and replace it with
       ```
       SUN_JAVA_HOME="path/jdk1.7.0_update"
       ```
     - Find the entry
       ```
       JAVA_HOME="path/jdk1.6.0_update"
       ```
       and replace it with
       ```
       JAVA_HOME="path/jdk1.7.0_update"
       ```
     where path is the path to the directory where the JDKs are installed, and where
     update is the update version of the installed JDK (for example, jdk1.6.0_37 or
     jdk1.7.0_51).

9. Apply any required EclipseLink patches.
   See "Software Requirements" for more information on the EclipseLink patches.

10. (Optional) Upgrade the Oracle Database software. See "Database Software
    Changes" for more information.
    See the Oracle Database documentation for information on upgrading the
    database software to a newer version.
11. If you upgraded your Oracle Database Software, import the old data to the new
    database using the import data pump (impdp) utility.
    See the Oracle Database documentation for information on the impdp utility.
12. Apply any required Oracle Database patches.
    See "Software Requirements" for more information on the Oracle Database
    patches.
    See the Oracle Database documentation for information on applying patches to the
    database.
13. Upgrade the UIM database schema by performing the following steps:
    a. Create two temporary directories, temp_dir and temp_dir_schema.
    b. Download the software for your operating system from the Oracle Software
       Delivery Cloud and save it to temp_dir.
    c. In temp_dir, open the downloaded ZIP file.
       The ora_uim_dbtools.jar file is located in the root of the downloaded ZIP file.
    d. Extract the ora_uim_dbtools.jar file into temp_dir_schema.
    e. In temp_dir_schema, open the ora_uim_dbtools.jar file and extract the contents
       into temp_dir_schema.
Upgrading from 7.2.x to 7.2.4

Upgrading Unified Inventory Management

f. Open the `temp_dir_schema/config/databases.xml` file, where you will see the following:

```xml
<db:database name="SID">
    <db:driver>oracle.jdbc.driver.OracleDriver</db:driver>
    <db:connectionUrlString>
        jdbc:oracle:thin:@DBHostName:port:SID
    </db:connectionUrlString>
    <db:schemaComparison fromSchema="UIM_701" fromFile="\filepath\dist\scripts\create.sql" toSchema="UIM_710" toFile="\filepath\dist\scripts\create.sql">
    </db:schemaComparison>
</db:database>
```

Modify the `<database>` element name attribute value (SID in the above XML) to be the SID value of the database you are upgrading.

Modify the `<connectionUrlString>` element value (`DBHostName:port:SID` in the above XML) to be the database you are upgrading.

Note: For a clustered environment, the `DBHostName:port:SID` must specify the primary Oracle RAC node.

g. Grant the execute permission for the `runDB.sh` script.

h. Run the DB upgrade by running the following command:

```bash
runDB.sh DBTOOLS_PATH JAVA_HOME MODE
```

where `DBTOOLS_PATH` is the directory location of the `ora_uimdbtools.jar` file, where `JAVA_HOME` is the directory location of your Java installation (up to the `jdk/bin` directory), and where `MODE` is `admincreate`, `report`, or `upgrade`. (To upgrade, `MODE` must be `upgrade`.)

For example:

```bash
./runDB.sh /home/uimdev/download/dbupgrade/temp_dir_schema /usr/jdk1.7.0_51/bin upgrade
```

You will be prompted to enter the database SID, and the UIM DB userid and password for the DB you want to migrate.

You will also be prompted to enter the mode (upgrade) a second time to confirm that an upgrade is to be performed on the database.

Note: The database contains tables that record if a script has been run against the database and if the script can be re-run. If the script has been previously run and it has been identified as `Not re-runnable`, the message `Update has already run` displays next to the script name in the `DbVersionController.log` file.

The following is an example of the `DbVersionController.log` file:
View the `DbVersionController.log` file to verify that all the scripts were successful or have already been run.

### 14. Upgrade the UIM MDS Schema by performing the following steps:

**a.** Navigate to the `MW_Home/oracle_common/bin` directory.

This directory contains the Patch Set Assistant (psa) tool, which you use to upgrade the schema.

**b.** Launch the psa tool to upgrade the schema.

The Welcome screen appears.

**c.** Click Next.

The Select Component screen appears.

**d.** Select the Oracle Metadata Services check box, and click Next.

The Prerequisites screen appears.

**e.** Confirm that the database backup is complete by selecting the **Database backup completed** and **Database version is certified by Oracle for Fusion Middleware upgrade** check boxes, and click Next.

The MDS Schema screen appears.

**f.** From the Database Type list, select the database type.

**g.** In Connect String, enter the `hostname:portnumber/SID` string.

---

**Note:** For a clustered environment, the `hostname:portnumber/SID` must specify the primary Oracle RAC node.

**h.** In DBA User Name, enter the database administrator user name.

**i.** In DBA Password, enter the password for the user name you provided in DBA User Name.

**j.** Click Connect.

If the provided details are valid, the Schema User Name and Schema Password fields become enabled.

**k.** From the Schema User Name list, select the UIM MDS schema.

**l.** In Schema Password, enter the database password, and click Next.

The Examine screen appears.

**m.** Click Next.

The Upgrade Summary screen appears.
n. Verify the details of the Oracle Metadata services to be upgraded and click Upgrade.

The Upgrading Components screen appears. You can monitor the progress of the upgrade from this screen.

o. After the upgrade completes, click Next.

The Upgrade Success screen appears.

p. Verify that the upgrade was successful and click Close.

15. Delete the UIM database schema tables named WL_LLR_servername.

For example, if there were two managed servers (uim_ms1 and uim_ms2) from the previous UIM 7.2.x release, you would need to delete the following tables: WL_LLR_UIM_MS1 and WL_LLR_UIM_MS2

16. Restart the WebLogic server.

17. Undeploy all cartridges that you do not want migrated to the new version of UIM.

For example, you should undeploy cartridges that you are no longer licensed to use or cartridges that provide functionality you no longer want to use.

---

Caution: It is not possible to undeploy a non-migrated cartridge after upgrading UIM. Failure to undeploy cartridges that cannot or are not migrated causes UIM to not function.

---

Upgrading UIM (7.2.x to 7.2.4)

---

Note: This section assumes you have already performed the pre-upgrade steps described in "Pre-Upgrade Tasks (7.2.x to 7.2.4)", including downloading the software pack to temp_dir.

---

To upgrade UIM:

1. Open a command prompt, navigate to the temp_dir directory, and run the following command to extract the contents of the downloaded software pack:

   \[ \text{unzip -xvf UnifiedInventoryManagement-7.2.4.0.0-<OS>.zip} \]

   The extracted software pack has the following structure:

   uim/Disk1/install/

2. In the command prompt, navigate to the temp_dir/uim/Disk1/install/ directory, and run the following command to start the installer:

   \[ \text{./runInstaller -jreloc jre_path} \]

   where jre_path is the JRE location.

   The installer Welcome screen appears.

3. Click Next.

4. In the Select Installation Type screen, select Complete, and click Next.

   The Specify Home Details screen appears.

5. Do the following:
a. In **Name**, enter, browse to, or confirm the name of the folder that contains the installation files for the old version of UIM.

b. In **Path**, enter, browse to, or confirm the directory where the folder specified in the **Name** field is located.

c. Click **Next**.

The installer scans the specified directory and folder.

The installer displays a warning message if it detects a pre-existing installation of UIM.

6. Click **Yes** to acknowledge the message.

The WebLogic Administration Server Connection Information screen appears.

7. Do the following:

   a. In **Host Name**, enter the Listen address of the Administration server (IP address or the host name of the host machine).

   b. In **Port Number**, enter the Administration server port number.

   c. In **User Name**, enter the user name with which you connected to the Administration Server.

   ![Note: This user should belong to the WebLogic Server Administrator’s group.]

   d. In **Password**, enter the password for the user name you provided in **User Name**.

   e. Click **Next**.

   The WebLogic Server/Cluster Selection screen appears.

   ![Note: In the following steps, the WebLogic Server should be running.]

8. Select the same target WebLogic server or cluster of servers belonging to the WebLogic Server domain to upgrade, and click **Next**.

If you are upgrading a cluster of servers, the Cluster Member Server Selection screen appears, where you can select a cluster member for UIM to install or upgrade.

The Database Type Selection screen appears.

9. Select the same database type that is used by your old UIM installation:

   - If your old installation is connected to a standalone database, select **Standard Oracle 11g Enterprise Database** and click **Next**.

   The Database Connection Information screen appears.

   Do the following:

   a. Verify that the retrieved field values are correct, and click **Next**.

   b. In **Password**, enter the database server password for the user name you provided in **User Name**.
c. Click Next.

If your old installation is connected to an Oracle RAC database, select **Oracle 11g Real Application Cluster Database** and click Next.

The Oracle RAC DB for MDS screen appears.

Do the following:

a. Verify that the retrieved field values are correct, and click Next.

b. In **Password**, enter the database server password for the user name you provided in **User Name**.

c. Click Next.

The Oracle RAC DB Nodes Connection Information screen appears.

Do the following:

a. Verify that the retrieved field values are correct, and click Next.

b. In **Password**, enter the database server password for the user name you provided in **User Name**.

c. Click Next.

The MDS Schema Information screen appears.

10. Enter the MDS Schema information by doing the following:

   a. In **Host Name**, enter the IP address or host name of the machine where the database server is installed.

   b. In **Port Number**, enter the port number with which the installer will connect to the database server.

   c. In **User Name**, enter the user name for the MDS schema.

   d. In **Password**, enter the password for the user name you provided in **User Name**.

   e. In **Service Name**, enter the service name for that uniquely identifies your database on the system.

   f. Click Next.

The Database Connection Information screen appears.

11. Provide the database user name and password, and click Next.

---

**Caution:** You must use the same user name and password that you provided when you set up the database schema using the Repository Creation Utility (RCU).

The user must have the following privileges: CATALOG, CONNECT, Create User, Create Session, Grant Any Privilege, Grant Any Role, Select Any Table, Select any Dictionary.

See "Creating the Database (MetaData) Schema for UIM" for more information.

---

The UIM database schema creation screen appears.

12. Enter the UIM database schema information, by doing the following:
Upgrading from 7.2.x to 7.2.4

a. In **User Name**, enter the user name for the Unified Inventory Management schema.

b. In **Password**, enter the password for the user name you provided in **User Name**.

c. In **System Tablespace**, enter the name for the permanent tablespace.

d. In **Temp Tablespace**, enter the name for the temporary tablespace.

e. Click **Next**.

The Security Provider Selection screen appears.

13. Select the security provider you want to use, and click **Next**.

The CMWS User Information screen appears.

14. Enter the CMWS User information, by doing the following:

   **Note:** The user will be created in WebLogic embedded LDAP. Provide the CMWS user name and password which you entered in the installation of the UIM 7.2.x application.

   a. In **User Name**, enter the user name for the CMWS user.
   
   b. In **Password**, enter the password for the user name you provided in **User Name**.
   
   c. In **Confirm Password**, enter the password again.
   
   d. Click **Next**.

   A warning message appears because the "cmwsuser" already exists.

15. Click **OK** to acknowledge the message.

The UIM Administrator user creation (Optional) screen appears.

16. Enter the UIM User information, by doing the following:

   a. In **User Name**, enter the user name for the UIM user.
   
   b. In **Password**, define a password for the UIM user.

   **Note:** The UIM user password can be a maximum of 12 letters long, and should contain at least one numeric value and one capital letter. For example, Weblogic123.

   Also, the user name must not be part of the password.

   c. **Confirm Password**, enter the password again.
   
   d. Click **Next**.

   A warning message appears because "uimuser" already exists.

17. Click **OK** to acknowledge the message.

The Do you want to create the UIM file store or JDBC store? screen appears.

18. Select the same type of store you selected when UIM was initially installed, and click **Next**.

The SSL enable Information screen appears.
19. Select whether or not to enable SSL, and click **Next**.
   The Do you want to deploy MapViewer? screen appears.

20. Select whether or not to deploy MapViewer from the default location:
   - If you select **Yes** and click **Next**, the Summary screen appears.
     Continue with step 21.
   - If you select **No** and click **Next**, the MapViewer information screen appears.
     Do the following:
     a. If MapViewer is already installed, enter the URL for MapViewer in the **URL** field.
     b. Click **Next**.
        The Summary screen appears.

21. Review the selections you have made in the preceding screens, and click **Install**.
   The Install screen appears.

22. You can view the installation progress.
   On successful installation of Unified Inventory Management, the End of Installation screen appears.

23. Perform the post-upgrade tasks. See "Post-Upgrade Tasks (7.2.x to 7.2.4)" for more information.

**Post-Upgrade Tasks (7.2.x to 7.2.4)**

Complete all of the following post-upgrade tasks after upgrading UIM, if necessary:

1. Verify that the upgrade process completed successfully before performing the remaining post-upgrade tasks. See "Verifying the Unified Inventory Management Installation" for more information.

2. If your UIM system is set up using Oracle RAC, and runs on multiple systems or across networks, update and re-enable cache coordination. See "Configuring Ehcache for the Cluster" for more information.

3. If the old version of your UIM user interface was customized, apply the changes to the new version of UIM. (You backed up these changes when performing the pre-upgrade tasks.)

4. Deploy all the 7.2.4 base cartridges into the upgraded UIM 7.2.4 environment. For information on base cartridges, see *UIM Cartridge and Technology Pack Guide*.

5. Redeploy any custom cartridges and technology packs, after migrating and compiling the cartridges and technology packs using Design Studio 7.2.4. See the Design Studio documentation for more information.

6. Install and configure the aspectJ libraries. To do this:
   a. Download the **aspectj-1.7.x.jar** library from the following web site:
      
   b. Manually extract the **aspectj-1.7.x.jar** file to a temporary folder (aspectj-1.7.x), enter the following command, replacing x with the appropriate number:
      
      java -jar aspectj-1.7.x.jar
c. Copy the aspectjweaver.jar file from the aspectj-1.7.x/lib folder to the UIM_Home/lib folder.

**Note:** The following step is required if dynamic extensibility (for custom extension points) is to be used.

d. Copy the aspectjrt.jar and aspectjtools.jar files from the aspectj-1.7.x/lib folder to the UIM_Home/lib folder.

7. Repackage the 7.2.4 custom.ear file by doing the following, regardless of whether any custom code needs to be added:
   a. In the Oracle WebLogic Server Administration Console, undeploy the existing 7.2.x custom.ear file.
   b. Make a backup copy of the 7.2.4 custom.ear file located in the UIM_Home/app/7_2_4 directory.
   c. Extract the contents of the 7.2.4 custom.ear file to a temporary directory, such as tempDirCustom.
   d. Copy any custom code from 7.2.x custom.ear to 7.2.4 custom.ear (which is extracted to tempDirCustom).
   e. Repackage the 7.2.4 custom.ear file with the upgraded content in the tempDirCustom directory.
   f. Copy the upgraded and repackaged custom.ear file to the UIM_Home/app/7_2_4 directory.

**Note:** You will deploy the repackaged custom.ear file in a later post-upgrade step, after you have restarted the WebLogic server.

8. For cluster server upgrades, increase the Stuck Thread Max Time value of each server from 600 to 1200. To do this:
   a. Login to the WebLogic Server Administration Console.
   b. In the left section, under Domain Structure, expand Environment.
   c. Click Servers.
      The Summary of Servers page appears.
   d. Click the link for each managed server.
      The Settings for ManagedServer page appears, where ManagedServer is the name of the managed server you selected.
   e. Click the Configuration tab.
   f. Click the Tuning sub-tab.
   g. In Stuck Thread Max Time, change the value from 600 to 1200.
   h. Click Save.

9. For clustered server upgrades, configure the WebLogic Server proxy timeout value. To do this:
b. Add the following parameter to the `web.xml` file:

```xml
<init-param>
    <param-name>WLIOTimeoutSecs</param-name>
    <param-value>1800</param-value>
</init-param>
```

c. Save and close the `web.xml` file.

d. Restart the WebLogic server.

10. If upgrading from UIM 7.2.0, convert logical devices from UIM 7.2.0 to UIM 7.2.4. (In UIM 7.2.2, logical devices were enhanced to define rate codes; so, if upgrading from UIM 7.2.2 or 7.2.3, logical devices are already converted.) To convert logical devices, execute the ruleset `CONVERT_LD_SR1_TO_SR2`, by giving it a list of associated Logical Device specifications. The list of Logical Device specifications is passed to the ruleset via a text file. For example, if you text file contains the following specifications:

- Analog Telephony Adapter
- IP Phone
- Data Networking Device

Then all the Logical Device instances that have those respective specifications will be converted.

To execute the ruleset, perform the following:

a. Create a text file and list all the Logical Device Specifications for which you want to upgrade. You should list one specification per line.

b. Login to UIM and from the Tasks menu select the link Execute Rule.

c. From the Ruleset dropdown menu, select `CONVERT_LD_SR1_TO_SR2`.

d. Using the Browse button, select the text file that contains the list of Logical Devices to be converted.

e. Click the Process button (upper-right corner of the UIM UI) to start the conversion.

If there is a large number of Logical Device instances per Logical Device specifications, then the conversion process should be split into multiple executions.

11. Restart the WebLogic server.

12. In the Oracle WebLogic Server Administration Console, deploy the `custom.ear` from the `UIM_Home/app/7_2_4` directory.

---

**About Rolling Back UIM**

If the installer fails to successfully upgrade UIM, you must manually restore the WebLogic server domain, the database schema, and the database domain. See *UIM System Administrator’s Guide* for more information about restoring the database. See the WebLogic Server documentation for more information about restoring the WebLogic Server domain.
This chapter describes how to install patches on Oracle Communications Unified Inventory Management (UIM).

See the patch ReadMe file, included in the patch download, for information about the contents of a patch.

**About Patching UIM**

UIM patches are posted on the My Oracle Support Web site:

[https://support.oracle.com](https://support.oracle.com)

Most UIM patches are installed using the Oracle Universal Installer. If the installer fails to install the patch, you must restore your database schema and domain, and your WebLogic Server domain.

The patch ReadMe file specifies whether to use the installer to install a patch or whether to follow other installation instructions.

---

**Important:** Always read the patch ReadMe file in its entirety before installing a patch.

---

UIM patches are released as cumulative patches. This means that if there is more than one patch, the last patch will contain the changes for the other patches. For example, patch #3 will contain the changes for patch #1 and patch #2.

Some patches contain fixes and functionality that may not be of any interest to you or may apply to features that you have not installed or purchased. Read the patch ReadMe file to determine if you must install the patch.

Some patches are password protected. To request the password to download a protected patch, open a Service Request on the My Oracle Support web site.
Planning Your Patch Installation

Before installing a patch, verify your version of UIM and ensure the patch is not already installed.

Oracle recommends scheduling your patch installation during non-peak hours to minimize the disruption to your operations.

Ensure that UIM is not running any operations.

As a precaution against a failed patch installation, Oracle recommends that you back up your database schema for UIM, database domain for UIM, WebLogic Server domain for UIM, the UIM_Home directory, and the installer inventory directory. See UIM System Administrator’s Guide for more information about backing up and restoring the database. See your WebLogic Server documentation for more information about backing up your WebLogic Server domain.

Oracle recommends installing a patch on a test system with a copy of your production data before installing the patch on your production system. Test the patch by logging into UIM and verifying the version number of installed components.

Installing a Patch

To install a patch on UIM:

1. Create a temporary directory (temp_dir).
2. Download the patch from the My Oracle Support web site:
   
   "https://support.oracle.com"
   
   and save it to temp_dir.
3. Unzip the patch package and select a patch installer package based on your specific platform.
   
   Note: The package contains patch installer packages for the Linux, Solaris, and AIX platforms.
4. Extract the contents of the installer package to temp_dir.
   
   The extracted software pack has the following structure:
   
   "PatchSet-UnifiedInventoryManagement-7.2.4.0.0-version/uim/Disk1/install/"
5. Run the following command:

```
/dir/PatchSet-UnifiedInventoryManagement-7.2.4.0.0-version/Disk1/install/runInstaller
```

The JRE Location command prompt appears.

6. Enter the path to the JRE location.

The Oracle Universal Installer Welcome screen appears.

7. Click Next.

The Specify Home Details screen appears.

8. Do the following:
   a. In the Name field, confirm the name of the folder that contains the installation files for UIM.
   b. In the Path field, confirm the directory where the folder specified in the Name field is located.
   c. Click Next.

The installer scans the specified directory and folder and retrieves information about your UIM installation, such as connection details and user names.

The WebLogic Administration Server Connection Information screen appears, displaying the current connection information.

9. Do the following:
   a. In the Host Name field, confirm the IP address or host name for the server that UIM was installed on.
   b. In the Port Number field, confirm the port used by UIM.
   c. If SSL is not being used, uncheck the Use SSL? box.
   d. In the Password field, enter the WebLogic Administration server password.
   e. Click Next.

The WebLogic Server/Cluster Selection screen appears.

10. Select the same target WebLogic server or cluster of servers belonging to the WebLogic Server domain and click Next.

If you are installing a patch on a cluster of servers, the Cluster Member Server Selection screen appears, where you can select a cluster member for UIM to patch.

The Database Type Selection screen appears.

11. Select the same database type that is used by your old UIM installation:
   - If your old installation is connected to a standalone database, select Standard Oracle 11g Enterprise Database and click Next.

The Database Connection Information screen appears.

Do the following:
a. Verify that the retrieved field values are correct and click Next.

b. In the Password field, enter the database server password for the user specified in the User Name field.

c. Click Next.

The UIM Schema User Information screen appears.

If your old installation is connected to an Oracle Real Application Clusters (Oracle RAC) database, select Oracle 11g Real Application Cluster Database and click Next.

The Oracle RAC DB Nodes Connection Information screen appears.

Do the following:

a. Verify that the retrieved field values are correct and click Next.

b. In the Password field, enter the database server password for the user specified in the User Name field.

c. Click Next.

The UIM Schema User Information screen appears.

---

**Note:** The installer does not proceed from either the Database Connection Information screen or the Oracle RAC DB Nodes Connection Information screen if any field on these screens contains errors.

---

12. Do the following:

   a. Verify that the retrieved value in the Schema User Name field is correct.

   b. In the Schema User Password field, enter the schema user password for the user specified in the Schema User Name field.

   c. Click Next.

   The Summary screen appears.

13. Review the Summary screen and click Install.

   The Install screen appears, showing the status of the installation.

   When the installer completes the installation, the End of Installation screen appears. This screen provides the URLs for accessing the new release of UIM. Make a note of the URLs.

14. Click Installed Products and verify that the patch is listed.

15. Click Exit.

16. It is recommended to restart the WebLogic Administration server by using the following command from within the Domain_Home/bin directory:

   ./startUIM.sh
This chapter provides instructions on configuring Oracle MapViewer for use with Oracle Communications Unified Inventory Management (UIM). Configuration tasks include:

- Choosing a Map Option
- Configuring MapViewer
- Viewing MapViewer Documentation

**Choosing a Map Option**

UIM provides different options for you to point to your map data. UIM supports the following options:

- Point to the Oracle Map service (default). See "Pointing to the Oracle Map Service (Default)".
- Use existing map data. See "Using Existing Map Data".
- No existing map data. See "Using a Sample Map".

**Pointing to the Oracle Map Service (Default)**

UIM is preconfigured for the Oracle Map service.

The default map can be previewed from the following link:
http://elocation.oracle.com/elocation/ajax/

To review the proprietary information statements, see:
http://elocation.oracle.com/elocation/legal.html

World Mercator (Oracle Spatial SRID 54004) is a projection coordinate system widely used by tile-based online mapping services. The `elocation_mercator.world_map` served by `elocation.oracle.com` is rendered in this coordinate system.

See "Linking UIM Map Profile to MapViewer".

**Using Existing Map Data**

If you already have map data, you can define a custom data source that points to it. See the steps starting from "Defining the Map Data Source".
Configuring MapViewer

Using a Sample Map

If you do not have map data but would like to see your UIM data on a map background, you may download a world sample map from the Oracle Technology Network at the following link:


After you have accessed the link, download the sample:

1. You must accept the OTN License Agreement to download this software. Click Accept License Agreement.
2. Click Download Data Bundle.
3. Follow the instructions in the downloaded ZIP file.

Next, see the steps starting from "Defining the Map Data Source".

Configuring MapViewer

To configure MapViewer for UIM, perform the procedures in the following sections:

1. Defining the Map Data Source
2. Defining Base Maps
3. Modifying the Map Profile Defaults
4. Linking UIM Map Profile to MapViewer
5. Installing Map Builder

Defining the Map Data Source

To define the data source:

1. Log in to MapViewer by entering the following in a Web browser:

   http://ServerName:PortNumber/mapviewer

   where ServerName is the application server used by UIM and Port is the port used by UIM.

2. Select Admin in the top right corner.

   The Log In page is displayed.

3. Enter the user name and password that you used for the WebLogic Server installation and then select Log In.

   The Manage MapViewer page is displayed.

4. Select DataSources.

   The predefined UIMDATA data source is displayed. UIMDATA is the connection between the map data and the UIM data.

5. To point to your local map data, you must build a map data source to connect the map data to the UIM data. This map data can be your own map data (in Oracle Spatial format) or the world sample map.

6. To define the map data source, select Configuration.

   The Edit mapViewerconfig.xml file is displayed.
7. Scroll down to the **Predefined Data Sources** section within the file, as shown in Example 11–1.

**Example 11–1  mapViewerConfig.xml File**

```xml
<!--***************************************************************************-->  
<!--**************************Predefined Data Sources**************************-->  
<!--***************************************************************************-->  

<!--Uncomment and modify the following to predefine one or more data sources. Note: You must precede the jdbc_password value with a "!" (exclamation point), so that when MapViewer starts the next time, it will encrypt and replace the clear text password. -->  
<map_data_source name ="mvdemo"  
jdbc_host ="elocation.us.oracle.com"  
jdbc_sid="orcl"  
jdbc_port="1521"  
jdbc_user="scott"  
jdbc_password="tiger"  
jdbc_mode="thin"  
number_of_mappers="3"  
allow_jdbc_theme_based_foi="fals"  
>  
<map_data_source name="UIMDATA" container-ds="jdbc/InventoryMapDataSource"  
number_of_mappers="7"/>
```

8. Copy the entire contents starting from the map_data_source tag to the end and paste the copied information below the existing predefined data source information within the Predefined Data Sources section. See Example 11–2.

**Example 11–2  Contents of mapViewerConfig.xml File to Copy**

```xml
<!--<map_data_source name ="mvdemo"  
jdbc_host ="elocation.us.oracle.com"  
jdbc_sid="orcl"  
jdbc_port="1521"  
jdbc_user="scott"  
jdbc_password="tiger"  
jdbc_mode="thin"  
number_of_mappers="3"  
allow_jdbc_theme_based_foi="fals"  
>  
<map_data_source name="UIMDATA" container-ds="jdbc/InventoryMapDataSource"  
number_of_mappers="7"/>-->
```

9. Modify the copied XML code, using settings that match your environment. Use the database connection that points to your map data.

```xml
<map_data_source name="Give your data source name"  
container_ds="JNDI URL of Map Datasource" number_of_mappers="7"/>
```

The data source should be created on the domain where the mapviewer is installed and should be pointing to the UIM database, otherwise this step will fail.

10. Click **Save & Restart**.
Two messages File mapViewerConfig.xml has been saved and MapViewer has been restarted are displayed above the Config area. The jdbc_password is displayed as encrypted.

11. Select Datasources and verify that MAPDATA, for example, is displayed in the Existing data sources table.

**Defining Base Maps**

There is no limit to the number of base maps that can be used for UIM. For example, you can use an existing world map as the base map.

To point to the world map:

1. Select Manage Map Tile Layers from the blue menu bar.
   
The Managing Map Tile Layers page is displayed.
2. Select Create.
3. From the Select type of map source, select Internal.
4. Click Continue.
   
The Create a map tile layer page is displayed.
5. In the Name field, enter a name. Do not use spaces in the name that you enter.
6. For the Data Source, select MAPDATA.
7. For the Base map, select TELECOM. You must select a base map.
8. Leave the rest of the default data in the other fields.
9. Select Submit.
10. Verify the map is set up correctly by looking at the existing map tile layers.

Figure 11–1 shows an example of existing map tile layers.

The map tile layer is the link between UIM and MapViewer. In UIM, the base map is defined as the Data Source name plus the Base Map name separated by a period. In this example, the UIM base map is MAPDATA.NW_REGION.

There is no limit to the number of map tile layers you can set up.
Modifying the Map Profile Defaults

If you want to change the default settings for the map profile, set the *UIM_Home/config/resources/event/topologyProcess.properties* file on the application server to:

```
# Map Profile Default Settings
defaultBaseMap=elocation_mercator.world_map
defaultApplicationDatasource=UIMDATA
defaultMapTileServerUrl=http://elocation.oracle.com/mapviewer/mcserver
defaultMapCopyright=©2008 Oracle Corp.©2008 NAVTEQ
```

**Note:** If you are pointing to an internal base map and not the Oracle map service, leave the `defaultMapTileServerUrl` blank.

Linking UIM Map Profile to MapViewer

To link the UIM map profile to MapViewer:

1. Ensure you are logged into UIM.
2. Select the **Network** link.
3. Search for and open any **Network**.
4. From the Related Pages drop-down, select Map Profile.
   The Map Profile page is displayed.
5. Enter Map Center Latitude.
6. Enter Map Center Longitude.
   **Figure 11–2** points to a MapViewer DataSource/Map Tile Layer Name combination.

**Figure 11–2  Example of Network Information**

![Network Information](image)

7. Click **Save**.
   The Network Summary page is displayed.
8. From the **Related Pages** drop-down, select Map View.
   **Note:** The Map View is not enabled until you enter the map center latitude and longitude in the Map Profile.
9. The **Map View canvas** is displayed.
Installing Map Builder

Oracle Map Builder is a standalone application that lets you create and manage the mapping metadata (styles, themes, and base maps) that is stored in the database.

Oracle Map Builder is downloaded as a JAR file (mapbuilder.jar) from the Oracle Software Delivery Cloud. You can run it as a standalone Java application in the JRE:

```
java -jar mapbuilder.jar [Options]
```

It is important to use the Mapbuilder.jar file that is downloaded from the Oracle Software Delivery Cloud in order to stay on the same release with the MapViewer application that is shipped with UIM.

See the User's Guide For Oracle MapViewer for detailed information on MapViewer. For a link to the document, see "Viewing MapViewer Documentation".

Viewing MapViewer Documentation

The Oracle Fusion Middleware User's Guide For Oracle MapViewer contains detailed MapViewer documentation. The following is a link to the library page, where the document is located:

Uninstalling Unified Inventory Management

This chapter describes how to uninstall Oracle Communications Unified Inventory Management (UIM).

About Uninstalling UIM

You use the Oracle Universal Installer to uninstall UIM. The installer uninstalls the core application and other components of UIM.

Interactive mode: Use the interactive mode when you want to interact with the installer UI during installation. See "Uninstalling UIM or UIM Components".

Note: WebLogic Server must be running before proceeding with the uninstall procedure.

Uninstalling UIM or UIM Components

To uninstall UIM, or a component belonging to the UIM product:

1. From a command line, navigate to the Oracle_Home/oui/bin directory and run the following command to initiate the Oracle Universal Installer runInstaller executable file:

   ./runInstaller

   The Oracle Universal Installer installation wizard starts.

   The Welcome screen appears.

2. Click Deinstall Products.

   The Inventory screen appears.

3. Select the components you want to uninstall.

4. Click Remove.

   Note: Selecting Show Empty Homes displays any previously created Oracle product homes. Select displayed homes, or folders, to remove them.

   The User Input screen appears.

5. In the WebLogic User Password field, enter your WebLogic user password, and click OK.
6. View and confirm your selection, and click **Next**.

You can see the progress as the selected components are uninstalled.

The installer removes all of the files except the logs. If required, delete the log files manually. The logs can be found at the following location:

`CentralInventorylocation/logs/`

---

**Important:** Ensure that the correct password is entered. There is no password validation for this step. If the password is incorrect, the uninstall will continue and the UIM .jar and .ear files are not undeployed from the WebLogic domain.

---

**Note:** The UIM schema, UIM user, Cartridge Deployer Client and CMWS user will not be removed during uninstallation. The database schema and application users can be used by other applications, so they should not be deleted.

---

This appendix provides information on the SEQUENCE table, specifically:

- Specification-based Sequence Generation
- Context-based Sequence Generation

### Specification-based Sequence Generation

A specification-based sequence is used to generate a sequence within a specified context, where the sequence is defined by a sequence specification. A sequence specification is defined in Oracle Communications Design Studio. It defines the minimum value, maximum value, and increment by value for the sequence.

A specification-based sequence is requested by invoking the `next(String sequenceSpecName, String context)` method on the `SequenceGenerator` interface, where `sequenceSpecName` is the name of the sequence specification. The method returns the next sequence value for the combination of sequence specification name and context.

Prior to the Oracle Communications Unified Inventory Management (UIM) 7.2.0 release, the first time a sequence was requested for the combination of sequence specification name and context, a SEQUENCE row was created that stored the context value, the sequence specification, and the last generated value for the sequence. Each subsequent request for a sequence value for the combination of sequence specification name and context returns a value equal to the last generated value plus the increment by value defined on the sequence specification, and results in an update to the current value on the SEQUENCE row.

In UIM 7.2.0, the request for a specification-based sequence results in the creation of an Oracle native sequence, created with a name that follows the naming convention:

```
<CONTEXT>_<SequenceSpecification ENTITYID>
```

where `<SequenceSpecification ENTITYID>` is the internal primary key ENTITYID value on the SEQUENCESPECIFICATION row for the given sequence specification, and `<CONTEXT>` is the given context value. This Oracle sequence is used to generate subsequent sequence values for the combination of sequence specification name and context.

The maximum length for the CONTEXT portion of the name for a specification-based Oracle native sequence is 10 characters. This constraint is due to the fact that the maximum length of an Oracle native sequence name is 30 characters, and the ENTITYID, (defined as NUMBER(19)) and the underscore take up 20 of the 30 characters.
Context-based Sequence Generation

A context-based sequence is used to generate a sequence within a specified context, where the sequence is not defined by a Sequence specification.

A context-based sequence is requested by invoking the `next(String context)` method on the SequenceGenerator interface. The method returns the next sequence value for the given context. The starting sequence value is 1 and increments by 1 with each request for a new value.

Prior to the UIM 7.2.0 release, the first time a sequence was requested for the context, a SEQUENCE row was created that stored the context value and the last generated value for the sequence. Each subsequent request for a sequence value for the context returns a value equal to the last generated value incremented by 1, and results in an update to the current value on the SEQUENCE row.

In UIM 7.2.0, the request for a context-based sequence results in the creation of an Oracle native sequence with a name that equals the context value. This Oracle sequence is used to generate subsequent sequence values for the context. The maximum length of an Oracle sequence name is 30 characters. Therefore, the context value for a context-based sequence cannot exceed 30 characters.