Oracle® Communications Offline Mediation Controller

Installation Guide

ORACLE®

Oracle Communications Offline Mediation Controller Installation Guide, Release 12.0

E91393-04

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Preface

This guide provides instructions for installing Oracle Communications Offline Mediation Controller.

Audience

This guide is intended for system administrators, database administrators, and developers who install and configure Offline Mediation Controller.

This guide assumes that you:

- Have a working knowledge of the UNIX operating system

- Understand your network configuration and the equipment from which Offline Mediation Controller collects data

Downloading Oracle Communications Documentation

Product documentation is located on Oracle Help Center:

http://docs.oracle.com

Additional Oracle Communications documentation is available from the Oracle software delivery Web site:

https://edelivery.oracle.com

Documentation Accessibility

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Offline Mediation Controller Installation Overview

This chapter provides an overview of the installation process of Oracle Communications Offline Mediation Controller.

Overview of Offline Mediation Controller Installation

Offline Mediation Controller installation should be performed only by experienced system administrators. You must be familiar with the following before you begin the installation:

- UNIX operating system
- Oracle Database 12*c* R2 administration
- Oracle Unified Directory

Overview of the Offline Mediation Controller Installation Procedure

The installation procedure follows these steps:

1. Plan your installation. When planning your installation, you do the following:
   - Determine the scale of your implementation; for example, a small test system or a large production system.
   - Determine how many physical systems you need and which software components to install on each system.
   - Plan the system topology; for example, how the system components connect to each other over the network and determining whether you want a standalone deployment or a clustered deployment.

2. Review system requirements. System requirements include:
   - Hardware requirements, such as, disk space.
   - System software requirements, such as operating system (OS) versions and OS patch requirements.
   - Information requirements, such as IP addresses and host names.

3. Perform pre-installation tasks:
   - Install and configure Oracle Unified Directory.

4. Install Offline Mediation Controller:
   - Install on a single system.
   - Install on an Oracle Real Application Clusters (RAC) system.

5. Perform the post-installation configuration tasks.

6. Verify the installation.

Ensuring a Successful Offline Mediation Controller Installation

To ensure that the Offline Mediation Controller installation is successful, follow these guidelines:

- As you install each component (for example, Oracle Unified Directory), verify that the component installed successfully before continuing the installation process.

- Pay close attention to the system requirements. Before you begin installing the application, ensure that your system has the required base software. In addition, ensure that you know all 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.

2

Offline Mediation Controller System Requirements

This chapter describes the software and hardware requirements for installing Oracle Communications Offline Mediation Controller.

Software Requirements

You must install and connect all required software for optimal performance. For more information, see "Offline Mediation Controller Software Compatibility" in *Offline Mediation Controller Compatibility Matrix*.

> **Note:**
>
> You must have the same version of Offline Mediation Controller running on the Administration Server and the Administration Client.

Hardware Requirements

The number and configuration of the machines that you employ for your Offline Mediation Controller installation depend on the scale and the kind of deployment you have planned according to your networks.

Administration Server, Administration Client, and Node Manager and the Oracle Unified Directory server can reside on the same device.

Table 2-1 provides the minimal hardware requirements for installing Offline Mediation Controller.

Table 2-1   Offline Mediation Controller Minimum Hardware Requirements

Component	Requirement
Hard disk	5 GB of free disk space
Processor	Oracle recommends using twin cores, each running at 1.5 GHz CPU.
Memory	A minimum of 4 GB physical memory and 4 GB swap.
	If you plan to have the database installed on the same server as Offline Mediation Controller, the minimum memory requirements increase to 6 GB physical memory and 6 GB swap.

Information Requirements

This section describes the information that you will be required to provide during the Offline Mediation Controller installation process. You define some of these configuration values when you install and configure Oracle Database and Oracle Unified Directory for Offline Mediation Controller during the pre-installation tasks.

> **Note:**
>
> Oracle recommends that you print the tables and record the values for future reference.

Oracle Unified Directory Connection Information

Table 2-2 lists the Oracle Unified Directory details that are required during Offline Mediation Controller installation.

Table 2-2   Oracle Unified Directory Connection information

Field	Description	Value	Sample Value
Host Name	The IP address or the host name of the machine on which Oracle Unified Directory is installed.	-	example.com
LDAP Listen Port	The port used by LDAP to send and receive data.	-	1389
Administration Connector Port	The port used for administration traffic with Oracle Unified Directory.	-	4444
Root User DN	The root user distinguished name (DN).	-	cn=Directory Manager
Password	The root user bind password for Oracle Unified Directory.	-	-
OUD Instance Path	The path to the directory where the Oracle Unified Directory instance is installed.	-	-
Directory Base DN	The base DN for Oracle Unified Directory.	-	dc=ocomcexample.com

Database Connection Information

> **Note:**
>
> The database information is required only when using the JDBC Distribution Cartridge (DC). The Oracle database stores call records it receives from the JDBC DC.

Table 2-3 lists database details that are required when using the JDBC DC.

Table 2-3   Database Connection information

Field	Description	Value	Sample Value
Hostname	The IP address or the host name of the machine on which the Oracle database is installed.	-	-
Port number	The listener port number assigned to the Oracle database service.	-	-
User name	The database user name. This user must have the following capabilities on the database: create user, grant any role, grant any privileges, select any table for Enterprise edition, and DBA for XE.	-	-
Password	The password for the database user.	-	-
Service Name	The name of the Oracle database service or Oracle SID.	-	-

About Installing Multiple Administration Servers

The Administration Server is a daemon process that communicates through commands and log messages with the Administration Client. The Offline Mediation Controller system can have one or two Administration Servers (one primary and one backup server).

If you configure an Offline Mediation Controller system with two Administration Servers, the following considerations apply:

Each Administration Server must be installed on a supported Unix (Solaris) or Linux (Oracle/Red Hat Enterprise) platform workstation.

1. The primary and backup Administration Servers do not communicate with one another for automatic cutover. (You must manually effect cut-over from the primary to the backup Administration Server.)

2. Each Administration Server is aware of, and can independently control, the entire Offline Mediation Controller system, including all Node Managers and nodes.

3. Administration Clients connect to the system by using the IP address of a specific Administration Server. For this reason, an Administration Client cannot connect to multiple Administration Servers simultaneously. The Administration Client displays a list of currently configured Administration Servers for the Offline Mediation Controller system.

Using Multiple Node Managers on a Single Mediation Host

You can create multiple Node Managers on a single mediation host. Each Node Manager independently controls a different set of node chains. This feature allows you to create node chains under one Node Manager without affecting the operation of any node chains controlled by another Node Manager in the same Offline Mediation Controller system.

The use of multiple Node Managers also enables you to effectively partition an Offline Mediation Controller system into manageable pieces that have predictable resource requirements. If you create multiple Node Managers on the same Unix (Solaris) or Linux (Oracle/Red Hat Enterprise) host, you must start each one using a different UDP port number.

To administer node chains controlled by any Node Manager on an mediation host, you must connect from the Offline Mediation Controller client to the Administration Server associated with that Node Manager.

3

Offline Mediation Controller Pre-Installation Tasks

This chapter describes the tasks that you perform before installing Oracle Communications Offline Mediation Controller.

Overview of Pre-Installation Tasks

Pre-installation tasks for Offline Mediation Controller include installing and configuring Oracle Unified Directory.

Installing and Configuring Oracle Unified Directory

Oracle Unified Directory is used for user management in Offline Mediation Controller.

Download Oracle Unified Directory from the Oracle software delivery Web site:

http://edelivery.oracle.com

for more information on installing Oracle Unified Directory, see the Oracle Unified Directory documentation at the Oracle Technology Network Web site:

http://www.oracle.com/technetwork/middleware/id-mgmt/overview/
oud-433568.html

Creating an Oracle Unified Directory Instance for Offline Mediation Controller

You must create an Oracle Unified Directory instance before installing Offline Mediation Controller. See the Oracle Unified Directory installation documentation for information on creating an Oracle Unified Directory instance.

To create a separate Oracle Unified Directory instance with the default Base DN:

1. Start the Oracle Unified Directory configuration assistant by running the following command:

   oud-setup

2. Follow the instructions displayed on the screens.

3. On the Directory Data screen, set the **Directory Base DN** field to **dc=ocomcexample.com**.

4. Select **Leave Database Empty**.

To create a separate Oracle Unified Directory instance with a different Base DN:

1. Open the *OMC_home***/ocomc/bin** file in a text editor, where *OMC_home* is the directory in which Offline Mediation Controller is installed.

Verifying Oracle Unified Directory Installation

To verify the Oracle Unified Directory installation:

1. Go to the *OUD_Instance_Home***/bin/** directory.

   where *OUD_Instance_Home* is the directory in which you installed the Oracle Unified Directory instance.

2. Run the following command:

   ./status

   The **Administrator user bind DN [cn= Directory Manager]** prompt appears.

3. Enter the root user DN for Oracle Unified Directory. To accept the default value press Enter.

   The **Password for user '***root_user_DN***'** prompt appears.

4. Enter the root user bind password for Oracle Unified Directory and press Enter.

   The Oracle Unified Directory server instance status and details appear. For example:

   ```
    --- Server Status ---
   Server Run Status:      Started
   Open Connections:       1

           --- Server Details ---
   Host Name:              localhost
   Administrative Users:   cn=Directory Manager
   Installation Path:      /Oracle/Middleware/Oracle_OUD1
   Instance Path:          /Oracle/Middleware/asinst_1/OUD
   Version:                Oracle Unified Directory 11.1.2.3.0
   Java Version:           1.8.0_144
   Administration Connector: Port 4444 (LDAPS)

           --- Connection Handlers ---
   Address:Port : Protocol : State
   ------------:----------:---------
   --          : LDIF     : Disabled
   0.0.0.0:161  : SNMP     : Disabled
   0.0.0.0:636  : LDAPS    : Disabled
   0.0.0.0:1389 : LDAP     : Enabled
   0.0.0.0:1689 : JMX      : Disabled

           --- Data Sources ---
   Base DN:     dc=ocomcexample.com
   Backend ID:  userRoot
   Entries:     0
   Replication: Disabled
   ```

4

Installing Offline Mediation Controller

This chapter describes how to install Oracle Communications Offline Mediation Controller. Before installing Offline Mediation Controller, read the following chapters:

- Offline Mediation Controller Installation Overview
- Offline Mediation Controller System Requirements
- Offline Mediation Controller Pre-Installation Tasks

Offline Mediation Controller Installation Options

You can install Offline Mediation Controller in the GUI mode (using the Oracle Universal Installer) or in the silent mode.

- **GUI mode:** Use the GUI mode when you want to interact with the Offline Mediation Controller Installer GUI during installation. See "Installing Offline Mediation Controller in GUI Mode" for more information.
- **Silent mode:** Use the silent mode when you are installing Offline Mediation Controller using the same configuration repeatedly. The silent mode runs in the background. See "Installing Offline Mediation Controller in Silent Mode" for more information.

Offline Mediation Controller Installation Types

When installing Offline Mediation Controller in the GUI mode, you can select the type of installation:

- Install **complete** Offline Mediation Controller that contains all components. See "Installing Offline Mediation Controller in GUI Mode" for more information.
- Install Offline Mediation Controller **Node Manager**. See "Installing Offline Mediation Controller Node Manager" for more information.
- Install Offline Mediation Controller **Admin Server**. See "Installing Offline Mediation Controller Administration Server" for more information.
- Install Offline Mediation Controller **Admin Client**. See "Installing Offline Mediation Controller Administration Client" for more information.

Installing Offline Mediation Controller in GUI Mode

You can install all Offline Mediation Controller components on an Oracle Solaris 11.3 (64-bit) server or Oracle Linux or Red Hat Enterprise Linux (64-bit) 7.2 server.

To install Offline Mediation Controller in the GUI mode:

1. Create a temporary directory (*temp_dir*).
2. Go to the Oracle software delivery Web site:

http://edelivery.oracle.com

3. Sign in with your user name and password.

4. Search for Oracle Communications Offline Mediation Controller and select the Offline Mediation Controller 12.0 software pack from the search results.

5. From the **Platform** list, select the *platform*, where *platform* is **linux** or **solaris**.

> **✎ Note:**
>
> Offline Mediation Controller Node Manager and Admin Server is available only on Linux and Solaris. Offline Mediation Controller Administration Client is available on Windows, Linux, and Solaris.

6. Download the Offline Mediation Controller software pack to *temp_dir*.

7. Unzip the Offline Mediation Controller software pack and extract the contents to *temp_dir*.

8. Go to the *temp_dir* directory, and run one of the following commands:

   - To start the GUI installer:

     Java_home/**bin**/**java -jar OCOMC-12.0.0.0.0_generic.jar**

     where *Java_home* is the directory in which you installed the latest supported Java version.

   - To start the GUI installer and install Offline Mediation Controller using the **oraInventory** directory in a different location:

     Java_home/**bin**/**java -jar OCOMC-12.0.0.0.0_generic.jar -invPtrLoc** *FilePath*/**oraInst.loc**

     where *FilePath* is the path to the directory in which the **oraInst.loc** file is located.

   - To start the GUI installer and create logs for debugging:

     Java_home/**bin**/**java -jar OCOMC-12.0.0.0.0_generic.jar -debug -logLevel FINEST**

   - To start the GUI installer and create a silent installer response file during the installation:

     Java_home/**bin**/**java -jar OCOMC-12.0.0.0.0_generic.jar -record -destinationFile** *path*

     where *path* is the absolute path to the response file.

   The Welcome screen appears.

9. Click **Next**.

   The Installation Location screen appears.

10. In the **Path** field, enter the full path or browse to the directory in which you want to install Offline Mediation Controller.

11. Click **Next**.

   The Installation Type screen appears.

> **✎ Note:**
>
> The Offline Mediation Controller Installer creates an **oraInventory** directory if it does not detect any installed Oracle products on the system. The **oraInventory** directory contains information about all Oracle products installed on your system. The default location of the **oraInventory** directory is in the **/etc/oraInst.loc** (Linux) file or the **/var/opt/oracle/oraInst.loc** (Solaris) file.

12. Select **Complete** and click **Next**.

    The Oracle Unified Directory Information screen appears.

13. Enter the following information required to configure Oracle Unified Directory for Offline Mediation Controller:

    Table 2-2 lists the Oracle Unified Directory details that are required.

    a. In the **Host Name** field, enter the IP address or the host name of the machine on which Oracle Unified Directory is installed.

    b. In the **LDAP Listen Port** field, enter the port used by LDAP to send and receive data.

    c. In the **Administration Connector Port** field, enter the port used for administration traffic with Oracle Unified Directory.

    d. In the **Root User DN** field, enter the root user distinguished name (DN).

    e. In the **Password** field, enter the root user bind password for Oracle Unified Directory.

    f. In the **OUD Instance Path** field, enter the path to the directory where the Oracle Unified Directory instance is installed.

    g. In the **Directory Base DN** field, enter the base DN for Oracle Unified Directory.

    h. Click **Next**.

       The OCOMC Configuration screen appears.

14. Enter the following information to specify Offline Mediation Controller configuration details:

    • In the Offline Mediation Controller Admin User Password section, do the following to log in to the Offline Mediation Controller Administration client:

       a. In the **Password** field, enter a password for the Offline Mediation Controller user.

          > **✎ Note:**
          >
          > The Offline Mediation Controller administrator user password must contain at least six characters, one lowercase letter, one uppercase letter, one special character, and one numerical character.

       b. In the **Confirm Password** field, enter the password again, to confirm it.

- In the ECE Home Directory section, do the following to specify whether to integrate Elastic Charging Engine (ECE) with Offline Mediation Controller:

  a. Select the **Enable Integration with ECE** check box to enable integration with ECE.

  b. In the **ECE Path** field, enter the path to the directory in which ECE is installed.

- In the Wallet Configuration section, do the following to enter the details for the Oracle Communications Offline Mediation Controller wallet:

  a. In the **Wallet Path** field, enter the full path or browse to the directory in which to store the wallet credentials.

  b. In the **Wallet password** field, enter a password for the Offline Mediation wallet

  c. In the **Confirm Wallet Password** field, enter the Offline Mediation wallet password again.

- In the SSL Configuration section, deselect the **SSL Enabled** check box to disable SSL.

The Installation Summary screen appears.

15. Review your selections, and click **Install**.

    The Installation Progress screen appears, and the installation begins.

    > **Note:**
    >
    > After the installation begins, you cannot stop or cancel the installation.

    When the installation is done, click **Next**, the Installation Complete screen appears.

    The installer checks for all required software and displays errors if it detects any missing or unavailable components or if any connectivity issues occur.

16. Click **Finish** to complete the installation.

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

    The Install screen appears and then the Configuration Assistants screen appears.

    > **Note:**
    >
    > After the installation begins, if you click **Stop installation**, the installation process stops but the files that are already copied are not removed.

    The Installer runs the **createPasswordPolicy** and **createDefaultData** scripts and displays the results in the Configuration Assistants screen.

18. Click **Next**.

    The End of Installation screen appears.

> **Note:**
>
> Note down the path to the **configure** script. You must run the **configure** script to perform some additional configurations for Offline Mediation Controller. See "Adding Offline Mediation Controller Service to System Startup" for more information.

19. Click **Exit**.

    The Exit dialog box appears.

20. Click **Yes**.

See "Verifying the Offline Mediation Controller Installation" for information on verifying the successful installation of Offline Mediation Controller.

See "About Installation Logs" for information on the Offline Mediation Controller Installer logs.

Installing Offline Mediation Controller Node Manager

You can install Offline Mediation Controller Node Manager on an Oracle Solaris 11.3 (64-bit) server or Oracle Linux or Red Hat Enterprise Linux (64-bit) 7.2 server.

To install Offline Mediation Controller Node Manager in the GUI mode:

1. Create a temporary directory (*temp_dir*).

2. Go to the Oracle software delivery Web site:

   http://edelivery.oracle.com

3. Sign in with your user name and password.

4. Search for Oracle Communications Offline Mediation Controller and select the Offline Mediation Controller 12.0 software pack from the search results.

5. From the **Platform** list, select the *platform*, where *platform* is **linux** or **solaris**.

6. Download the Offline Mediation Controller software pack to *temp_dir*.

7. Unzip the Offline Mediation Controller software pack and extract the contents to *temp_dir*.

8. Go to the *temp_dir* directory, and run one of the following commands:

   • To start the GUI installer:

     Java_home/**bin**/**java -jar ocomc-12.0.0.0.0_generic.jar**

     where *Java_home* is the directory in which you installed the latest supported Java version.

   • To start the GUI installer and install Offline Mediation Controller using the **oraInventory** directory in a different location:

     Java_home/**bin**/**java -jar ocomc-12.0.0.0.0_generic.jar -invPtrLoc** *FilePath*/**oraInst.loc**

     where *FilePath* is the path to the directory in which the **oraInst.loc** file is located.

- To start the GUI installer and create logs for debugging:

  ```
  Java_home/bin/java -jar OCOMC -12.0.0.0.0_generic.jar -debug -logLevel
  FINEST
  ```

- To start the GUI installer and create a silent installer response file during the installation:

  ```
  Java_home/bin/java -jar ocomc-12.0.0.0.0_generic.jar -record -
  destinationFile path
  ```

  where *path* is the absolute path to the response file.

  The Welcome screen appears.

9. Click **Next**.

   The Installation Location screen appears.

10. In the **Path** field, enter the full path or browse to the directory in which you want to install Offline Mediation Controller.

11. Click **Next**.

    The Installation Type screen appears.

    > **Note:**
    >
    > The Offline Mediation Controller Installer creates an **oraInventory** directory if it does not detect any installed Oracle products on the system. The **oraInventory** directory contains information about all Oracle products installed on your system. The default location of the **oraInventory** directory is in the **/etc/oraInst.loc** (Linux) file or the **/var/opt/oracle/oraInst.loc** (Solaris) file.

12. Select **Node Manager** and click **Next**.

    The OCOMC Configuration screen appears.

13. Enter the following information to specify Offline Mediation Controller configuration details:

    - In the ECE Home Directory section, do the following to specify whether to integrate Elastic Charging Engine (ECE) with Offline Mediation Controller:

      a. Select the **Enable Integration with ECE** check box to enable integration with ECE.

      b. In the **ECE Path** field, enter the path to the directory in which ECE is installed.

    - In the Wallet Configuration section, do the following to enter the details for the Oracle Communications Offline Mediation Controller wallet:

      a. In the **Wallet Path** field, enter the full path or browse to the directory in which to store the wallet credentials.

      b. In the **Wallet password** field, enter a password for the Offline Mediation wallet

      c. In the **Confirm Wallet Password** field, enter the Offline Mediation wallet password again.

- In the SSL Configuration section, deselect the **SSL Enabled** check box to disable SSL.

  The Installation Summary screen appears.

14. Review your selections, and click **Install**.

    The Installation Progress screen appears, and the installation begins.

> ✎ **Note:**
>
> After the installation begins, you cannot stop or cancel the installation.

When the installation is done, click **Next**, the Installation Complete screen appears.

The installer checks for all required software and displays errors if it detects any missing or unavailable components or if any connectivity issues occur.

15. Click **Finish** to complete the installation.

16. Click **Next**.

    The End of Installation screen appears.

17. Click **Exit**.

    The Exit dialog box appears.

18. Click **Yes**.

See "Verifying the Offline Mediation Controller Installation" for information on verifying the successful installation of Offline Mediation Controller Node Manager.

See "About Installation Logs" for information on the Node Manager Installer logs.

Installing Offline Mediation Controller Administration Server

You can install Administration Server on an Oracle Solaris 11.3 (64-bit) server or Oracle Linux or Red Hat Enterprise Linux (64-bit) 7.2 server.

To install Administration Server in the GUI mode:

1. Create a temporary directory (*temp_dir*).

2. Go to the Oracle software delivery Web site:

   http://edelivery.oracle.com

3. Search for Oracle Communications Offline Mediation Controller and select the Offline Mediation Controller 12.0 software pack from the search results.

4. From the **Platform** list, select the *platform*, where *platform* is **linux** or **solaris**.

5. Download the Offline Mediation Controller software pack to *temp_dir*.

6. Unzip the Offline Mediation Controller software pack and extract the contents to *temp_dir*.

7. Go to the *temp_dir* directory, and run one of the following commands:

   - To start the GUI installer:

```
Java_home/bin/java -jar ocomc-12.0.0.0.0_generic.jar
```

where *Java_home* is the directory in which you installed the latest supported Java version.

- To start the GUI installer and install Offline Mediation Controller using the **oraInventory** directory in a different location:

```
Java_home/bin/java -jar ocomc-12.0.0.0.0_generic.jar -invPtrLoc FilePath/
oraInst.loc
```

where *FilePath* is the path to the directory in which the **oraInst.loc** file is located.

- To start the GUI installer and create logs for debugging:

```
Java_home/bin/java -jar OCOMC -12.0.0.0.0_generic.jar -debug -logLevel
FINEST
```

- To start the GUI installer and create a silent installer response file during the installation:

```
Java_home/bin/java -jar ocomc-12.0.0.0.0_generic.jar -record -
destinationFile path
```

where *path* is the absolute path to the response file.

The Welcome screen appears.

8. Click **Next**.

The Installation Location screen appears.

9. In the **Path** field, enter the full path or browse to the directory in which you want to install Offline Mediation Controller.

10. Click **Next**.

The Installation Type screen appears.

> **Note:**
>
> The Offline Mediation Controller Installer creates an **oraInventory** directory if it does not detect any installed Oracle products on the system. The **oraInventory** directory contains information about all Oracle products installed on your system. The default location of the **oraInventory** directory is in the **/etc/oraInst.loc** (Linux) file or the **/var/opt/oracle/oraInst.loc** (Solaris) file.

11. Select **Admin Server** and click **Next**.

The Oracle Unified Directory Information screen appears.

12. Enter the following information required to configure Oracle Unified Directory for Offline Mediation Controller:

Table 2-2 lists the Oracle Unified Directory details that are required.

a. In the **Host Name** field, enter the IP address or the host name of the machine on which Oracle Unified Directory is installed.

    b. In the **LDAP Listen Port** field, enter the port used by LDAP to send and receive data.

    c. In the **Administration Connector Port** field, enter the port used for administration traffic with Oracle Unified Directory.

    d. In the **Root User DN** field, enter the root user distinguished name (DN).

    e. In the **Password** field, enter the root user bind password for Oracle Unified Directory.

    f. In the **OUD Instance Path** field, enter the path to the directory where the Oracle Unified Directory instance is installed.

    g. In the **Directory Base DN** field, enter the base DN for Oracle Unified Directory.

    h. Click **Next**.

    The OCOMC Configuration screen appears.

13. Enter the following information to specify Offline Mediation Controller configuration details:

- In the Offline Mediation Controller Admin User Password section, do the following to log in to the Offline Mediation Controller Administration client:

    a. In the **Password** field, enter a password for the Offline Mediation Controller user.

> **Note:**
>
> The Offline Mediation Controller administrator user password must contain at least six characters, one lowercase letter, one uppercase letter, one special character, and one numerical character.

    b. In the **Confirm Password** field, enter the password again, to confirm it.

- In the SSL Configuration section, deselect the **SSL Enabled** check box to disable SSL.

The Installation Summary screen appears.

14. Review your selections, and click **Install**.

The Installation Progress screen appears, and the installation begins.

> **Note:**
>
> After the installation begins, you cannot stop or cancel the installation.

When the installation is done, click **Next**, the Installation Complete screen appears.

The installer checks for all required software and displays errors if it detects any missing or unavailable components or if any connectivity issues occur.

15. Click **Finish** to complete the installation.

16. Click **Next**.

    The End of Installation screen appears.

17. Click **Exit**.

    The Exit dialog box appears.

18. Click **Yes**.

See "Configuring Authentication For Administration Server" for information on configuring authentication for Administration Server.

See "Verifying the Offline Mediation Controller Installation" for information on verifying the successful installation of Administration Server.

See "About Installation Logs" for information on the Administration Server Installer logs.

Configuring Authentication For Administration Server

Administration Server uses Oracle Unified Directory for authentication.

To configure authentication for Administration Server:

1. Log on to the system on which Offline Mediation Controller is installed.

2. Open the *OMC_Home***/web/htdocs/AdminServerImpl.properties** file in a text editor, where *OMC_Home* is the directory in which you installed Offline Mediation Controller.

3. Enter the values for the following parameters:

   • **com.nt.udc.admin.server.AdminServerImpl.ldapURL**. Specifies the URL and the LDAP listening port of the Oracle Unified Directory system.

   • **com.nt.udc.admin.server.AdminServerImpl.ldapDomain**. Specifies the base DN for Oracle Unified Directory.

   For example:

   ```
   com.nt.udc.admin.server.AdminServerImpl.ldapURL       ldap://localhost:1389
   com.nt.udc.admin.server.AdminServerImpl.ldapDomain    dc=ocomcexample.com
   ```

4. Save and close the file.

5. Open the *OMC_Home***/bin/createPasswordPolicy** file in a text editor.

6. Enter the values for the following parameters:

   • OUD_HOME. Specifies the path to the directory where the Oracle Unified Directory instance is installed.

   • OUD_HOST. Specifies the IP address or the host name of the machine on which Oracle Unified Directory is installed.

   • OUD_ADMIN_PORT. Specifies the port used for administration traffic with Oracle Unified Directory.

   • OUD_BINDDN. Specifies the root user DN.

   For example:

   ```
   OUD_HOME=/Oracle/Middleware/asinst_1/OUD;
   OUD_HOST=localhost;
   ```

```
OUD_ADMIN_PORT=4444;
OUD_BINDDN="cn=Directory Manager";
```

7. Save and close the file.

8. Open the *OMC_Home***/bin/createDefaultData** file in a text editor.

9. Enter the values for the following parameters:

   • OUD_HOME. Specifies the path to the directory where the Oracle Unified Directory instance is installed.

   • OUD_HOST. Specifies the IP address or the host name of the machine on which Oracle Unified Directory is installed.

   • OUD_ADMIN_PORT. Specifies the port used for administration traffic with Oracle Unified Directory.

   • OUD_BINDDN. Specifies the root user DN.

   • OUD_BASEDN. Specifies the base DN for Oracle Unified Directory.

   • OUD_LDAPPORT. Specifies the port used by LDAP to send and receive data.

   For example:

```
OUD_HOME=/Oracle/Middleware/asinst_1/OUD;
        OUD_HOST=localhost;
        OUD_ADMIN_PORT=4444;
        OUD_BINDDN="cn=Directory Manager";
        OUD_BASEDN="dc=ocomcexample.com"
OUD_LDAPPORT="1389"
```

10. Save and close the file.

11. Open the *OMC_Home***/bin/populateDirTemp.ldif** file in a text editor.

12. Enter the value for the following parameter:

    userpassword: Specifies the password for the Offline Mediation Controller administrator user.

13. Save and close the file.

14. Ensure that the Oracle Unified Directory server instance is running.

15. Go to the *OMC_Home***/bin** directory and run the following command:

    ./createPasswordPolicy -p *OUD_Password*

    where *OUD_Password* is the root user bind password for Oracle Unified Directory.

    The default password policies are set in Oracle Unified Directory. See the discussion about the default password policies in *Offline Mediation Controller System Administrator's Guide*.

16. Go to the *OMC_Home***/bin** directory and run the following command:

    ./createDefaultData -p *OUD_Password*

    The default user data is added in Oracle Unified Directory.

> **Note:**
>
> The **populateDirTemp.ldif** file is automatically deleted after the default user data is added in Oracle Unified Directory.

Configuring Authentication Using Different Base DN

By default, the base DN is set to **ocomcexample.com**. You can configure the authentication using a different base DN.

To configure the authentication using a different base DN:

1. Create the **populateDirTemp.ldif** file in the *OMC_Home*/**bin** directory with the following parameters:

    • **uid**: Specifies the Offline Mediation Controller administrator user.

    • **ou**: Specifies the organizational unit.

    • **dc**: Specifies the domain component; the new base DN.

    • **changetype**: Specifies the type of change.

    • **replace**: Specifies the parameter value to be replaced.

    • **userpassword:** Specifies the password for the Offline Mediation Controller administrator user.

    For example:

    ```
    uid=admin,ou=People,dc=xyz.com
    changetype: modify
    replace: userpassword
    userpassword:Password
    ```

2. Edit the *OMC_Home*/**bin/ populateDir.ldif** file and replace all the occurrence of **ocomcexample.com** with the new base DN; for example, xyz.com.

3. Go to the *OMC_Home*/**bin** directory and run the following command:

    ./createDefaultData -p *OUD_Password*

    The new user data is added in Oracle Unified Directory.

> **Note:**
>
> The **populateDirTemp.ldif** file is automatically deleted after the default user data is added in Oracle Unified Directory.

Installing Offline Mediation Controller Administration Client

You can install Administration Client on an Oracle Solaris 11.3 (64-bit) server or Oracle Linux or Red Hat Enterprise Linux (64-bit) 7.2 server.

To install Administration Client in the GUI mode:

1. Create a temporary directory (*temp_dir*).

2. Go to the Oracle software delivery Web site:

   http://edelivery.oracle.com

3. Sign in with your user name and password.

4. Search for Oracle Communications Offline Mediation Controller and select the Offline Mediation Controller 12.0 software pack from the search results.

5. From the **Platform** list, select any platform.

6. Download the Offline Mediation Controller software pack to *temp_dir*.

7. Unzip the Offline Mediation Controller software pack and extract the contents to *temp_dir*.

8. Go to the *temp_dir* directory, and run one of the following commands:

   • To start the GUI installer:

     Java_home/**bin**/**java -jar ocomc-12.0.0.0.0_generic.jar**

     where *Java_home* is the directory in which you installed the latest supported Java version.

   • To start the GUI installer and install Offline Mediation Controller using the **oraInventory** directory in a different location:

     Java_home/**bin**/**java -jar ocomc-12.0.0.0.0_generic.jar -invPtrLoc** *FilePath*/
     oraInst.loc

     where *FilePath* is the path to the directory in which the **oraInst.loc** file is located.

   • To start the GUI installer and create logs for debugging:

     Java_home/**bin**/**java -jar OCOMC -12.0.0.0.0_generic.jar -debug -logLevel**
     FINEST

   • To start the GUI installer and create a silent installer response file during the installation:

     Java_home/**bin**/**java -jar ocomc-12.0.0.0.0_generic.jar -record -**
     destinationFile *path*

     where *path* is the absolute path to the response file.

   The Welcome screen appears.

9. Click **Next**.

   The Installation Location screen appears.

10. In the **Path** field, enter the full path or browse to the directory in which you want to install Offline Mediation Controller.

11. Click **Next**.

   The Installation Type screen appears.

> **✎ Note:**
>
> The Offline Mediation Controller Installer creates an **oraInventory** directory if it does not detect any installed Oracle products on the system. The **oraInventory** directory contains information about all Oracle products installed on your system. The default location of the **oraInventory** directory is in the **/etc/oraInst.loc** (Linux) file or the **/var/opt/oracle/oraInst.loc** (Solaris) file.

12. Select **Admin Client** and click **Next**.

    The Installation Summary screen appears.

13. Review your selections, and click **Install**.

    The Installation Progress screen appears, and the installation begins.

> **✎ Note:**
>
> After the installation begins, you cannot stop or cancel the installation.

When the installation is done, click **Next**, the Installation Complete screen appears.

The installer checks for all required software and displays errors if it detects any missing or unavailable components or if any connectivity issues occur.

14. Click **Finish** to complete the installation.

15. Click **Next**.

    The End of Installation screen appears.

16. Click **Exit**.

    The Exit dialog box appears.

17. Click **Yes**.

See "Verifying the Offline Mediation Controller Installation" for information on verifying the successful installation of Administration Client.

See "About Installation Logs" for information on the Administration Client Installer logs.

Installing Offline Mediation Controller in Silent Mode

The silent mode installation is a way of setting installation configurations only once and then using those configurations to duplicate the installation on many systems. In this mode, you use a response file template that contains a predefined set of values to install Offline Mediation Controller.

> **Note:**
>
> The silent installation is not meant for production environments and it should be used only in test environments for setting up quickly or backing up the properties for later use in another test environment.

Creating a Response File

To create a response file:

1. Create a response file by doing one of the following:

   • Create a copy of the response file that was generated during the GUI installation. See "Installing Offline Mediation Controller in GUI Mode" for more information.

   > **Note:**
   >
   > The GUI Installer does not store passwords provided during installation in the response file. You must manually add the passwords after creating a copy of the response file.

   • Create the response file using the template by running the following command:

   ```
   Java_home/bin/java -jar ocomc-12.0.0.0.0_generic.jar -
   getResponseFileTemplates
   ```

   where *Java_home* is the directory in which you installed the latest supported Java version.

   The following response files are created with the default values.

   – **oracle.communications.ocomc.Complete.rsp**

      Use this file if you are doing a complete installation.

   – **oracle.communications.ocomc.AdminClient.rsp**

      Use this file if you are installing only Administration Client.

   – **oracle.communications.ocomc.AdminServer.rsp**

      Use this file if you are installing only Administration Server.

   – **oracle.communications.ocomc.NodeManager.rsp**

      Use this file if you are installing only Node Manager.

   You can create as many response files as needed.

2. Modify the response files you copied by specifying the key-value information for the following parameters as per your installation requirements:

   • **ORACLE_HOME**: Specifies the path to the directory in which you want to install Offline Mediation Controller.

   • **ORACLE_HOME_NAME**: Specifies the Offline Mediation Controller installation name.

- **AdminUserPwd**: Specifies the password for the Offline Mediation Controller administrator user.

- **OUD_DETAILS**: Specifies the Oracle Unified Directory server details using the following syntax:

```
OUD_DETAILS={"Host_Name","Ldap_Listen_Port","Administration_Connector_Por
t","Root_User_DN","Password","OUD_Instance_Path","Directory_Base_DN"}
```

where:

- *Host_Name* is the IP address or the host name of the machine on which Oracle Unified Directory is installed.

- *LDAP_Listen_Port* is the LDAP listening port to send and receive data.

- *Administration_Connection_Port* is the port used for administration traffic with Oracle Unified Directory.

- *Root_User_DN* is the root user distinguished name (DN).

- *Password* is the root user bind password for Oracle Unified Directory.

- *OUD_Instance_Path* is the path to the directory where the Oracle Unified Directory instance is installed.

- *Directory_Base_DN* is the base DN for Oracle Unified Directory.

For example:

```
OUD_DETAILS={"localhost","1389","4444","cn=Directory Manager","oracle","/
home/oracle/Oracle/Middleware/asinst_1/OUD","dc=ocnmexample.com"}
```

> **Note:**
>
> - The response file template contains guidelines and examples on how to enter the values.
>
> - The Offline Mediation Controller Installer treats incorrect context, format, or type values within a response file as if no value were specified.

Running the Silent Mode Installation

To install Offline Mediation Controller in the silent mode:

1. Create the response file. See "Creating a Response File".

2. Copy the response file you created to the machine on which you run the silent installation.

3. On the machine on which you run the silent installation, go to the *temp_dir* directory to which you have downloaded the Offline Mediation Controller software pack, and run the following command:

```
Java_home/bin/java -jar ocomc-12.0.0.0.0_generic.jar -debug -invPtrLoc
Inventory_home/oraInventory/oraInst.loc [parameter=value] -responseFile path
-silent
```

where:

- *path* is the absolute path to the response file.

- *parameter* is the name of an installation parameter.

- *value* is the value of the installation parameter.

  For example:

  ```
  Java_home/bin/java -jar ocomc-12.0.0.0.0_generic.jar -debug -
  invPtrLoc Inventory_home/oraInventory/oraInst.loc INSTALL_TYPE=Complete -
  responseFile /tmp/oracle.communications.ocomc.Complete.rsp -silent
  ```

  The installation runs silently in the background.

See "Adding Offline Mediation Controller Service to System Startup" for more information on additional configurations for Offline Mediation Controller.

See "Verifying the Offline Mediation Controller Installation" for information on verifying the successful installation of Offline Mediation Controller.

See "About Installation Logs" for information on the Offline Mediation Controller Installer logs.

Installing Offline Mediation Controller on an Oracle Real Application Clusters System

> **✎ Note:**
>
> This is an optional installation configuration.

To install Offline Mediation Controller on an Oracle Real Application Clusters (RAC) system:

1. Ensure that the servers in the RAC system are running. for more information on RAC system, see the Oracle Real Application Clusters documentation.

2. Install the Offline Mediation Controller on each server. See "Installing Offline Mediation Controller in GUI Mode" for more information on installing Offline Mediation Controller.

About Installation Logs

You can check the log files in the **oraInventory/logs** directory. The default location of the **oraInventory** directory is in the **/etc/oraInst.loc** (Linux) file or the **/var/opt/oracle/oraInst.loc** (Solaris) file.

Use the following log files to monitor installation and post-installations:

- **installAction***TimeStamp***.log**

- **oraInstall***TimeStamp***.err**

- **oraInstall***TimeStamp***.out**

- **silentInstall***TimeStamp***.log** (for the silent mode installation)

where *TimeStamp* is the date and time the log file was created.

5

Offline Mediation Controller Post-Installation Tasks

This chapter provides instructions for Oracle Communications Offline Mediation Controller post-installation tasks.

Post-Installation Tasks

After installing Offline Mediation Controller, perform the following post-installation tasks:

1. Set the JAVA_HOME environment variable. For more information, see "Setting the JAVA_HOME Environment Variable".

2. Add the Offline Mediation Controller service to the system startup scripts. For more information, see "Adding Offline Mediation Controller Service to System Startup".

3. (Optional) Create certificates to use secure communication between Offline Mediation Controller components. For more information, see "Enabling Secure Communication Using Certificates".

4. Install the JDBC library. For more information, see "Installing the JDBC Library".

Setting the JAVA_HOME Environment Variable

You must set the JAVA_HOME environment variable to the latest version of JRE certified with Offline Mediation Controller before running any Offline Mediation Controller components. For more information, see "Additional Offline Mediation Controller Software Requirements" in *Offline Mediation Controller Compatibility Matrix*.

To set the JAVA_HOME environment variable on the Linux or Solaris system on which Offline Mediation Controller is installed:

1. Stop all Offline Mediation Controller components and all Java processes.

   For more information, see "Starting and Stopping Offline Mediation Controller" in *Offline Mediation Controller System Administrator's Guide*.

2. Copy the *JDK_home***/lib/tools.jar** file to the *JRE_home***/lib** directory.

   where:

   • *JDK_home* is the directory in which the latest version of JDK certified with Offline Mediation Controller is installed.

   • *JRE_home* is the directory in which the latest version of JRE certified with Offline Mediation Controller is installed.

3. Set the JAVA_HOME environment variable to the latest version of JRE certified with Offline Mediation Controller.

   For example, in C shell, do the following:

a. Open the **.cshrc** file in a text editor.

b. Add or modify the following entries:

```
setenv JAVA_HOME JRE_home
setenv PATH ${JAVA_HOME}:${PATH}
```

c. Save and close the file.

d. Update the environment by running the following command:

```
source .cshrc
```

To set the JAVA_HOME environment variable on the Windows system on which Administration Client is installed:

1. Close Administration Client.

2. Copy the *JDK_home***\lib\tools.jar** file to the *JRE_home***\lib** directory.

3. Open the *OMC_home***\bin\UDCEnvironment.bat** file in a text editor, where *OMC_home* is the directory in which Offline Mediation Controller is installed.

4. Search for the following entry:

```
set JAVA_HOME=%UDC_HOME%\jre
```

5. Change this entry to:

```
set JAVA_HOME=JRE_home
```

For example:

```
set JAVA_HOME= C:\Program Files\Java\jre7
```

6. Save and close the file.

Adding Offline Mediation Controller Service to System Startup

After installing Offline Mediation Controller, run the **configure** script to add the Offline Mediation Controller service to the system startup scripts in the **/etc/init.d/** directory.

To add the Offline Mediation Controller service to the system startup scripts:

1. Log on as root to the system on which Offline Mediation Controller is installed.

2. Set the JAVA_HOME environment variable to the latest version of JRE certified with Offline Mediation Controller. For more information, see "Additional Offline Mediation Controller Software Requirements" in *Offline Mediation Controller Compatibility Matrix*.

   For example, in C shell, do the following:

   a. Open the **.cshrc** file in a text editor.

   b. Add or modify the following entries:

   ```
   setenv JAVA_HOME JRE_home
   setenv PATH ${JAVA_HOME}:${PATH}
   ```

   c. Save and close the file.

   d. Update the environment by running the following command:

   ```
   source .cshrc
   ```

3. Go to the *OMC_home*/**bin** directory, where *OMC_home* is the directory in which Offline Mediation Controller is installed.

4. Run the following command:

   ```
   ./configure OMC_home
   ```

   The configurations required to run Offline Mediation Controller are performed.

5. Start all Offline Mediation Controller components.

Enabling Secure Communication Using Certificates

To enable secure communication between the Offline Mediation Controller components, create trusted certification authority (CA) certificates for Administration Server and Node Manager. For more information, see the discussion about secure communication using secure sockets layer (SSL) in *Offline Mediation Controller System Administrator's Guide*.

> **✎ Note:**
>
> You must create the CA certificates after installing and before starting the Offline Mediation Controller components.

Creating the Administration Server's Certificate

Administration Server has its own certificate in a secure keystore. This certificate has a private and a public key pair. Administration Server shares the certificate containing only the public key with all its known Administration Clients. Administration Client adds the server's certificate to its truststore, indicating that Administration Server is added to the trusted list.

To create the Administration Server's certificate:

1. Log on to the system on which Offline Mediation Controller is installed.

2. Go to the *OMC_home*/**bin** directory.

3. Run the following command:

   ```
   ./createAdminSvrCert
   ```

   The **Enter keystore password** prompt appears.

4. Enter the keystore password.

   The **Re-enter new password** prompt appears.

5. Re-enter the keystore password.

6. You are prompted to enter the following information:

   • First and last name

   • Organizational unit

   • Organization

   • City or locality

- State or province

- Two-letter country code

The information confirmation prompt appears.

7. Enter **y**, which confirms the information.

    The **Enter key password for <adminServer>** prompt appears.

8. Leave the key password blank and press Enter. The keystore password is used for the key password. Note the key password because this is required to access the keystore entry containing the key.

    The key pair for Administration Server is created, and the **Enter keystore password** prompt appears.

9. Enter the keystore password.

    The certificate is created and stored in the *OMC_home*/**config/adminserver/ adminServer.cer** file.

    The **Enter keystore password** prompt appears.

10. Enter the Administration Client's keystore (truststore) password.

    The **Re-enter new password** prompt appears.

11. Re-enter the Administration Client's keystore password.

    The **Trust this certificate** prompt appears.

12. Enter **y**, which trusts the certificate.

> **✎ Note:**
>
> If you enter **n**, you must manually import the Administration Server's public certificate into the Administration Client's truststore. For more information, see "Manually Importing Administration Server's Public Certificate into Administration Client's Truststore".

The Administrator Server certificate is created added to keystore, and the public certificate is imported to the Administration Client's truststore.

Manually Importing Administration Server's Public Certificate into Administration Client's Truststore

To manually import the Administration Server's public certificate into the Administration Client's truststore:

1. Log on to the system on which Offline Mediation Controller is installed.

2. Run the following command:

    ```
    OMC_home/jre/bin/keytool -import -v -trustcacerts -alias adminServer -file
    OMC_home/config/adminserver/adminServer.cer -keystore OMC_home/config/GUI/
    adminClientTruststore.jks
    ```

    The **Enter keystore password** prompt appears.

3. Enter the Administration Client's keystore (truststore) password.

The **Trust this certificate** prompt appears.

4. Enter **y**, which trusts the certificate.

    The Administration Server's public certificate is imported to the Administration Server's truststore.

Encoding the Administration Server's Keystore Password

When secure communication is enabled, you must manually encode the Administration Server's keystore password and store the encoded password in a configuration file. Offline Mediation Controller uses the configuration file to run the Administration Server daemon.

To encode the Administration Server's keystore password:

1. Log on to the system on which Offline Mediation Controller is installed.

2. Go to the *OMC_home*/**bin** directory and run the following command:

    ```
    ./encode keystore_password
    ```

    where *keystore_password* is the Administration Server's keystore password.

    The command window displays *keystore_password* in encoded form. For example:

    ```
    72,-46,62,71,41,-115,14,-68,-34,-4,-105,-113,-125,1,-18,-70
    ```

3. Copy the encoded password.

4. Open the *OMC_home*/**config/adminserver/ASkeystore.cfg** file in a text editor.

5. Find the following entry:

    ```
    KEYSTORE_PASSWORD= value
    ```

    If the file does not have this entry, add it.

6. Replace *value* with the copied encoded password.

7. Save and close the file.

Creating the Node Manager's Certificate

Node Manager has its own certificate in a secure keystore. This certificate has a private and a public key pair. Node Manager shares the certificate containing only the public key with Administration Server. Administration Server adds the Node Manager's certificate to its truststore.

To create the Node Manager's certificate:

1. Log on to the system on which Offline Mediation Controller is installed.

2. Go to the *OMC_home*/**bin** directory.

3. Run the following command:

    ```
    ./createNodeMgrCert
    ```

    The **Enter keystore password** prompt appears.

4. Enter the keystore password.

ORACLE

The **Re-enter new password** prompt appears.

5. Re-enter the keystore password.

   You are prompted to enter the following information:

   - First and last name

   - Organizational unit

   - Organization

   - City or locality

   - State or province

   - Two-letter country code

   The information confirmation prompt appears.

6. Enter **y**, which confirms the information.

   The **Enter key password for <nodeManager>** prompt appears.

7. Leave the key password blank and press Enter. The keystore password is used for the key password. Note the key password because this is required to access the keystore entry containing the key.

   The key pair for Node Manager is created, and the **Enter keystore password** prompt appears.

8. Enter the keystore password.

   The certificate is created and stored in the *OMC_home***/config/nodemgr/ nodeManager.cer** file.

   The **Enter keystore password** prompt appears.

9. Enter the Administration Server's keystore (truststore) password.

   The **Re-enter new password** prompt appears.

10. Re-enter the Administration Server's keystore password.

    The **Trust this certificate** prompt appears.

11. Enter **y**, which trusts the certificate.

> **Note:**
>
> If you enter **n**, you must manually import the Node Manager's certificate into the Administration Server's truststore. For more information, see "Manually Importing Node Manager's Public Certificate into Administration Server's Truststore".

The Node Manager's certificate is created added to keystore, and the public certificate is imported to the Administration Server's truststore.

Manually Importing Node Manager's Public Certificate into Administration Server's Truststore

To manually import the Node Manager's public certificate into the Administration Server's truststore:

1. Log on to the system on which Offline Mediation Controller is installed.

2. Run the following command:

   ```
   OMC_home/jre/bin/keytool -import -v -trustcacerts -alias nodeManager
   -file OMC_home/config/nodemgr/nodeManager.cer -keystore OMC_home/config/
   adminserver/adminServerTuststore.jks
   ```

   The **Enter keystore password** prompt appears.

3. Enter the Administration Server's keystore (truststore) password.

   The **Trust this certificate** prompt appears.

4. Enter **y**, which trusts the certificate.

   The Node Manager's public certificate is imported to the Administration Server's truststore.

Encoding the Node Manager's Keystore Password

When secure communication is enabled, you must encode the Node Manager's keystore password and store the encoded password in a configuration file. Offline Mediation Controller uses the configuration file to run the Node Manager daemon.

To encode the Node Manager's keystore password:

1. Log on to the system on which Offline Mediation Controller is installed.

2. Go to the *OMC_home*/**bin** directory and run the following command:

   ```
   ./encode keystore_password
   ```

   where *keystore_password* is the Node Manager's keystore password.

   The command window displays *keystore_password* in encoded form. For example:

   ```
   72,-46,62,71,41,-115,14,-68,-34,-4,-105,-113,-125,1,-18,-70
   ```

3. Copy the encoded password.

4. Open the *OMC_home*/**config/nodemgr/NMkeystore.cfg** file in a text editor.

5. Find the following entry:

   ```
   KEYSTORE_PASSWORD= value
   ```

   If the file does not have this entry, add it.

6. Replace *value* with the copied encoded password.

7. Save and close the file.

Installing the JDBC Library

Before using the cartridges that require JDBC, install the JDBC library for the installed Java version and the database into which you want to insert data.

To install the JDBC library:

1. Stop all Offline Mediation Controller components.

2. Go to the Oracle JDBC Drivers Web site:

   `https://www.oracle.com/database/technologies/appdev/jdbc.html`

3. From the list of JDBC drivers, click the link for the database into which you want to insert data.

   The JDBC Driver Downloads page appears.

4. Download the **ojdbc**_version_**.jar** file to the _OMC_home_**/3rdparty_jars** directory, where _version_ is the latest version of Java certified with Offline Mediation Controller.

5. Start all the Offline Mediation Controller components. For more information, see the discussion about starting and stopping Offline Mediation Controller in _Offline Mediation Controller System Administrator's Guide_.

6

Verifying the Offline Mediation Controller Installation

This chapter describes how to verify that Oracle Communications Offline Mediation Controller is installed correctly.

Verifying the Offline Mediation Controller Installation

To verify the Offline Mediation Controller installation:

- Start the individual component daemons. See "Starting Component Daemons".
- Start the application. See "Starting Offline Mediation Controller".
- Restart the entire system.

Starting Component Daemons

You can verify your Offline Mediation Controller installation by starting component daemons. Because you can install components on different UNIX systems, you must start each component separately.

To start a component daemon:

1. Log on to the system on which Offline Mediation Controller is installed.

   To log in to a newly installed or upgraded Offline Mediation Controller system for the first time, use the default User ID (Admin) and password (admin). Customize your own login profile, and then create user login profiles. Each profile requires a user name and a password.

2. Go to the *OMC_Home*/**bin** directory, where *OMC_Home* is the directory in which you installed Offline Mediation Controller.

3. Run the following command.

   ./*daemon_name*

   where *daemon_name* is the daemon name for the Offline Mediation Controller component as follows:

Component	Daemon Name
Administration Server	adminsvr
Node Manager	nodemgr
Administration Client	gui

Starting Offline Mediation Controller

To start Offline Mediation Controller:

1. Log on to the system on which Offline Mediation Controller is installed.

2. Go to the *OMC_Home***/bin/** directory.

3. Run the following command:

   `./ProcessControl start`

   ProcessControl starts the specified servers on the specified ports.

   See the discussion about the **ProcessControl** script in *Offline Mediation Controller System Administrator's Guide*.

4. Run the following command:

   `./gui`

   The Welcome to Oracle Communications Offline Mediation Controller dialog box appears.

5. In the **IP Address** field, enter the IP address of Administration Server to which you want to connect.

6. In the **Port** field, accept the default port number.

   If the system to which you want to connect resides on a UDP port other than the default, change the port number.

7. Enter your user ID and password.

   If you are the system administrator logging on to a newly installed Offline Mediation Controller system for the first time, enter **admin** for the user ID and enter the password that you entered during Offline Mediation Controller installation for the OCOMC admin user. The first time log in, you are requested to change your password. See the discussion about the password policies in *Offline Mediation Controller System Administrator's Guide* for more information.

   > **Note:**
   >
   > Oracle recommends that you change your password at regular intervals to ensure security.

8. Click **Connect**.

   The Offline Mediation Controller Administration Client window appears.

7
Upgrading Offline Mediation Controller

This chapter describes how to upgrade to the latest release of Oracle Communications Offline Mediation Controller.

In this chapter, the Network Mediation 6.0 release running on your system is called the *old* release. The Offline Mediation Controller 12.0 release you are upgrading to is called the *new* release.

About Upgrading Offline Mediation Controller

The upgrade process includes these tasks:

1. Ensure that the old release components are started.

2. Install and start the new release. See "Installing and Starting the New Release" for more information.

3. Export and import:

   > **Note:**
   >
   > You cannot directly upgrade from the old release to the new release; instead you must export the configuration of the old release and import the configuration to the new release.

   a. Export the configuration of the old release.

      See "Exporting a Configuration" for more information.

   b. Import the configuration of the old release into the new release.

      See "Importing a Configuration" for more information.

4. View all node and node chain configurations in the new release Administration Client to verify that all nodes and node chain configurations of the old release are duplicated on the new release.

   See "Verifying the New Release Configuration" for more information.

5. Switch operations from the old release to the new release.

   See "Upgrading the Node Chains" for more information.

6. Configure and save any new features or settings that you require in the new release.

7. Keep or remove the software and node chain configurations of the old release.

Upgrade System Requirements

See "Software Requirements" and "Hardware Requirements" for more information on the software and hardware requirements to upgrade to Offline Mediation Controller 12.0.

After you complete the upgrade procedure and start using the Offline Mediation Controller 12.0 system, you can keep or remove the previous Offline Mediation Controller version and configured node chains.

Information Requirements

This section describes the information that you must provide during the upgrade process. You define some of these configuration values when you install and configure the new release.

> **Note:**
>
> Oracle recommends that you print the table and record the values for future reference.

The following information is required while upgrading from the old release to the new release:

- Determine whether each system has the system resources to support the new release.

- Determine the IP address, port number, and name of the old release Administration Server and its node managers. You can obtain this information from the Mediation Hosts screen in Administration Client.

- Determine where you want to install the new release Administration Server, Node Manager, and Administration Client. Record the planned IP address, port number, and name of the new release Administration Server and its node managers.

  You can either use the default ports for your new release installation or change them in the **offline_mediation.conf** file, which is used by the **ProcessControl** script. **ProcessControl** starts Administration Server, and Node Manager in the *OMC_Home* directory on the appropriate ports when the system starts. See the discussion about managing the **ProcessControl** script in *Offline Mediation Controller System Administrator's Guide* for more information.

- Determine how you want to map the old release Administration Server and Node Manager addresses, ports, and names to the new release Administration Server and Node Manager IP addresses, ports, and names. Table 7-1 lists the details to map the old release to a new release.

Table 7-1   Administration Server and Node Manager Map Table

Offline Mediation Controller Component	Old Release IP Address	Old Release Port Number	Old Release Assigned Name	New Release IP Address	New Release Port Number	New Release Assigned Name
Administration Server	-	-	NA	-	55105	NA
Node Manager	-	-	-	-	55109	-
Node Manager	-	-	-	-	-	-

Installing and Starting the New Release

To install and start the new release, follow these steps:

> **Note:**
>
> See "Installing Offline Mediation Controller" for more information on installing Offline Mediation Controller 12.0.

1. Install the new release Administration Server on at least one system that you want as part of the final system.

2. Install the new release Node Manager on each system that you want as part of the final system.

3. Install the new release Administration Client on a system that you want as part of the final system.

4. Start the new release Administration Server and Node Manager daemons. See "Starting Component Daemons" for more information.

Exporting a Configuration

To upgrade to the new release, you must capture the node configurations of the old release in an export file, and import that file after the installing the new release.

To export the old release host configurations:

1. Start the old release Administration Server and Node Manager daemons.

2. Start the old release Administration Client.

3. From the **Admin** menu, select **Export Configuration**.

   The Export Configuration dialog appears.

4. Do one of the following:

   • If you want to export all the mediation hosts, select **Export All Mediation Hosts**.

   • If you want to select the mediation hosts to export, select **Selected Mediation Hosts**, and then select the hosts whose configurations you want to export.

5. Click **Browse** and locate the directory in which you want to save the configuration files and click **Select**.

6. Do one of the following:

    • To export a **.nmx** customization file that includes the exported **.xml** file, a **.log** file, an **adminserver_ip_port.jar** file, and a version information **.xml** file, click **Export**.

    • To export only the **.xml** file, deselect **Export Customization** and click **Export**.

    The node configurations are stored in the directory.

Importing a Customized Configuration

While importing, Offline Mediation Controller upgrades the node configurations, provides default values for new parameters, and maps nodes as necessary.

To import a customized configuration from the old release:

1. Start the new release Administration Server and Node Manager daemons. See "Starting Component Daemons" for more information.

2. Go to *OMC_Home*/**bin** and run the following command:

    ```
    ./gui
    ```

    The Welcome to Oracle Communications Offline Mediation Controller dialog appears.

3. Log on as the **admin** user.

> ✎ **Note:**
>
> You can create, modify, or delete users only as the administrator user.

The Oracle Communications Offline Mediation Controller Administration window appears.

4. From the **Admin** menu, select **Import Customization**.

    The Import Customization dialog box appears.

5. Click **Browse** and select the desired **.nmx** export file.

    The node managers display under the **Old Node Manager** column in the Node Manager mapping pane.

6. Select a Node Manager from the list and click **Map**.

    The Map dialog box appears.

7. Enter **Name**, **IP address or host name**, and **Port number** for the new Node Manager.

    For the **Port number**, use the Node Manager default of **55109** or the port number in Table 7-1.

8. Repeat step 6 and step 7 for the rest of the node managers in the list.

9. After mapping all node managers, click **Import**.

During the import customization process, the new release upgrades the nodes and provides default parameters for any new configuration options for the updated nodes.

After distribution is completed, restart Administration Server and all the Node Managers.

Importing a Configuration

While importing, Offline Mediation Controller upgrades the node configurations, provides default values for new parameters, and maps nodes as necessary.

To import a configuration:

1. Start the new release Administration Server and Node Manager daemons. See "Starting Component Daemons" for more information.

2. Go to *OMC_Home*/**bin** and run the following command:

   ```
   ./gui
   ```

   The Welcome to Oracle Communications Offline Mediation Controller dialog appears.

3. Log on as the **admin** user.

   > ✎ **Note:**
   >
   > You can create, modify, or delete users only as the administrator user.

   The Oracle Communications Offline Mediation Controller Administration window appears.

4. From the **Admin** menu, select **Import Configuration**.

   The Import Configuration dialog box appears.

5. Click **Browse** and select the desired **.xml** export file.

   The node managers display under the **Old Node Manager** column in the Node Manager mapping pane.

6. Select a Node Manager from the list and click **Map**.

   The **Map** dialog box appears.

7. Enter **Name**, **IP address or host name**, and **Port number** for the new Node Manager.

   For the **Port number**, use the Node Manager default of **55109** or the port number in Table 7-1.

8. Repeat **Step** 5 and **Step** 6 for the rest of the node managers in the list.

9. After mapping all node managers, click **Import**.

   The new node managers are added and the corresponding nodes are created. Any errors are recorded in the upgrade log and displayed after the import.

During the import process, Offline Mediation Controller upgrades nodes and provides default parameters for any new configuration options for the updated nodes.

Verifying the New Release Configuration

When you finish exporting and importing, verify whether the nodes and node chain configurations with their current parameter settings are duplicated. Also verify that you can start the nodes and node chains.

If any nodes were removed due to node obsolescence, you can upgrade the affected node chain configurations. For more information, see "Configuring New Features". Refer to the upgrade log file for the Node Destinations list and the Node ID Conversion Table to aid the verification procedure.

Upgrading the Node Chains

When you complete the export and import tasks, you must upgrade from the old release node chains to the new release.

To upgrade the node chains:

1. Configure the new release Collection Cartridge (CC) to look for incoming records in a directory different from the one in which the old release CC looks for records.

2. Configure the network devices to send records to the directory monitored by the new release CC.

3. Start all nodes in the new release node chain.

4. Verify data output from the new release node chain.

5. Stop the old release CC.

6. Verify the input directories of all nodes in the old release chains to ensure all files are processed.

7. Stop all nodes in the old release chain.

Upgrading the Wireless GGSN/SGSN Node Chain

To upgrade the GGSN/SGSN node chain from the old release to the new release, complete the following procedure.

> **Note:**
>
> The upgrade occurs between two separate systems so there is no connectivity between the node chains. PDP sessions that are open during the upgrade may contain partial and duplicate records since the Enhancement Processor (EP) and the Aggregation Processor (AP) cannot process these records.

To upgrade the old release GGSN/SGSN node chain:

1. Stop the old release GGSN/SGSN CC, Session Sequencing EP and Session Aggregation AP.

2. Start all nodes in the new release node chain, except the Distribution Cartridge (DC).

3. Open the node configuration window for the old release GGSN/SGSN CC and on the **GSM3GPP** tab, change the **Receive Port** number to **3396** and the **Send Port** number to **1225**.

4. Open the node configuration window for the old release Session Sequencing EP and on the **Sequencing** tab change the **Expiry Interval** to **2 minutes**.

5. Open the node configuration window for the old release Session Aggregation AP and on the **Aggregator** tab, change the **Flush Time** to **300 seconds (5 minutes)**.

6. Open the node configuration window for the old release DC and on the **File Output** tab, change the **Output Push Time Unit** to **minutes** and the **Output Push Time Period** to **5**.

7. Start the old release GGSN/SGSN CC, Session Sequencing EP and Session Aggregation AP to clear the chain and wait twenty minutes to ensure the old release chain processes and outputs all data.

8. Verify the input directories of all nodes in the old release chain to ensure all files are processed and then stop the chain.

9. Start the new release DC.

10. Verify data output from the new release node chain.

Troubleshooting Import Errors

The import process uses a best effort approach where any successfully created node managers and nodes remain intact, even if errors occur during the import.

If an import has errors or terminates abnormally, examine the following files:

- Console session history

- Import log

  You can find the import log file in the log directory of the installation directory. For example:

  *OMC_Home***/log/import_***DateTime***.log**

The import log file resides on the same system as Administration Client.

If needed, call Oracle Global Support and supply information from the console session history or the upgrade log file.

Switching to a New LDAP Installation

If you are switching from an existing to a new LDAP installation, you must perform the following procedure after completing the installation and upgrade steps.

To change LDAP versions

1. On the host system running LDAP, locate the old slapd process in the installation directory.

The following list shows the default installation directories.

- 5.0.1: **NetworkMediation501**

- 6.0: **ocomc**

2. Run the following command using the appropriate installation directory:

 # ps -eaf | grep slapd

The following information is displayed:

```
   root 2821   1 0 10:11:37 ?   0:00 /
Install_Directory/ldap/libexec/slapd -f /
Install_Directory/...
```

Where *Install_Directory* is the directory where you have installed the LDAP server.

3. Run the following command to kill the old LDAP process:

 # kill 2821

4. Run the following command to populate directory script:

*OMC_Home***# /ocomc/ldap/data/populateDir**

Where *OMC_Home* is the directory in which you installed Offline Mediation Controller.

The following information is displayed:

```
Starting slapd on TCP/IP port 389...
/OMC_Home/ldap/libexec/slapd -f
/OMC_Home/ldap/etc/slapd.conf -p 389
Waiting 5 seconds for slapd to start...
Populating the directory...
Verifying entries...
Directory populated successfully.
```

5. Run the following command to verify that **slapd** is running:

 # ps -eaf | grep slapd

The following information is displayed:

```
   root 4529   1 0 11:04:02 ?   0:00 /OMC_Home/ldap/libexec/slapd -f /
OMC_Home/ldap/etc/slapd.conf
```

You can now log on using the new LDAP installation. The default login user ID and password is **admin**.

Data from the old LDAP system is not transferred into the new LDAP system. You must re-create users and passwords for the new LDAP system.

6. When you are satisfied with the new LDAP installation, modify the host system startup scripts so the former LDAP server does not startup upon reboot using the following command:

 # rm /etc/rc2.d/S81slapd

Configuring New Features

After upgrading from the old release to the new release, you must configure any features that are new to Offline Mediation Controller 12.0. For a list of new features, see *Offline Mediation Controller 12.0 Release Notes*.

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Uninstalling Offline Mediation Controller

This chapter describes how to uninstall Oracle Communications Offline Mediation Controller.

Uninstalling Offline Mediation Controller

To uninstall Offline Mediation Controller:

1. Go to the *OMC_home*/**oui/bin** directory, where *OMC_home* is the directory in which Offline Mediation Controller is installed.

2. Run the following command:

   ./deinstall.sh

   The Distribution to Uninstall screen appears.

3. Select the components you want to uninstall.

4. Click **Next**.

   The Welcome screen appears.

5. Click **Next**.

   The Uninstallation Summary screen appears.

6. Click **Uninstall**.

   The Uninstallation Progress screen appears.

7. Click **Next**.

   The Uninstallation Complete screen appears.

8. Click **Finish**.

When you uninstall Offline Mediation Controller, the Oracle Universal Installer does not remove all the files from the *OMC_Home* directory, where *OMC_Home* is the directory in which you installed Offline Mediation Controller. You must manually delete the *OMC_Home* directory and its contents.

Uninstalling Offline Mediation Controller Using the Silent Mode

To uninstall Offline Mediation Controller using the silent mode:

1. Go to the *temp_dir*/**ocomc/Disk1/install** directory.

2. Run the following command:

   ./runInstaller -responseFile *path* **-silent -deinstall**

where *path* is the location of the response file that you created during the GUI installation of Offline Mediation Controller.

You receive a message indicating that Offline Mediation Controller has been uninstalled successfully.