Oracle® Health Sciences Clinical Development Analytics

Secure Installation and Configuration Guide

Release 2.2 for Standard Configuration

E25025-04

May 2013

ORACLE®

Oracle Health Sciences Clinical Development Analytics Secure Installation and Configuration Guide, Release 2.2 for Standard Configuration

E25025-04

Contents

Preface

This guide provides information about how to install Oracle Health Sciences Clinical Development Analytics Standard Configuration (OHSCDA).

This preface contains the following topics:

Audience

This installation guide is intended for users who are responsible for installing Oracle Health Sciences Clinical Development Analytics Standard Configuration. You should be familiar with:

- Oracle Database
- Oracle Business Intelligence Enterprise Edition (OBIEE) application
- Oracle Business Intelligence Data Warehouse Administration Console (DAC) application
- Informatica PowerCenter application
- Oracle Healthcare Master Person Index (OHMPI) application

  OHMPI is required only if you want to use deduplication.

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.

Finding Certification Information

Certifications provide access to product certification information for Oracle and third party products. A product is certified for support on a specific release of an operating system on a particular hardware platform, for example, Oracle Database 10g Release 2 (10.2.0.1.0) on Sun Solaris 10 (SPARC). To find certification information:

1. Sign in to My Oracle Support at http://support.oracle.com.
2. Click the **Certifications** tab. The Certifications page opens and displays the Find Certifications region.
3. In Select Product, enter `Oracle Health Sciences Clinical Development Analytics`.
4. Click the Go to Certifications icon.

   The right pane displays the certification information.
5. Select a certification to view the certification details.

Finding Information and Patches on My Oracle Support

Your source for the latest information about Oracle Health Sciences Clinical Development Analytics Standard Configuration is Oracle Support's self-service Web site, My Oracle Support (formerly MetaLink).

Before you install and use an Oracle software release, always visit the My Oracle Support Web site for the latest information, including alerts, release notes, documentation, and patches.

Creating a My Oracle Support Account

You must register at My Oracle Support to obtain a user name and password account before you can enter the Web site.

To register for My Oracle Support:

1. Open a Web browser to http://support.oracle.com.
2. Click the **Register here** link to create a My Oracle Support account. The registration page opens.
3. Follow the instructions on the registration page.

Signing In to My Oracle Support

To sign in to My Oracle Support:

1. Open a Web browser to http://support.oracle.com.
2. Click **Sign In**.
3. Enter your user name and password.
4. Click **Go** to open the My Oracle Support home page.

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The fastest way to search for product documentation, release notes, and white papers is by the article ID number.

To search by the article ID number:

1. Sign in to My Oracle Support at http://support.oracle.com.
2. Locate the Search box in the upper right corner of the My Oracle Support page.
3. Click the sources icon to the left of the search box, and then select Article ID from the list.
4. Enter the article ID number in the text box.
5. Click the magnifying glass icon to the right of the search box (or press the Enter key) to execute your search.

   The Knowledge page displays the results of your search. If the article is found, click the link to view the abstract, text, attachments, and related products.

In addition to searching by article ID, you can use the following My Oracle Support tools to browse and search the knowledge base:

- Product Focus — On the Knowledge page, you can drill into a product area through the Browse Knowledge menu on the left side of the page. In the Browse any Product, By Name field, type in part of the product name, and then select the product from the list. Alternatively, you can click the arrow icon to view the complete list of Oracle products and then select your product. This option lets you focus your browsing and searching on a specific product or set of products.
- Refine Search — Once you have results from a search, use the Refine Search options on the right side of the Knowledge page to narrow your search and make the results more relevant.
- Advanced Search — You can specify one or more search criteria, such as source, exact phrase, and related product, to find knowledge articles and documentation.

Finding Patches on My Oracle Support

Be sure to check My Oracle Support for the latest patches, if any, for your product. You can search for patches by patch ID or number, or by product or family.

To locate and download a patch:

1. Sign in to My Oracle Support at http://support.oracle.com.
2. Click the **Patches & Updates** tab.

   The Patches & Updates page opens and displays the Patch Search region. You have the following options:

   - In the Patch ID or Number is field, enter the primary bug number of the patch you want. This option is useful if you already know the patch number.
   - To find a patch by product name, release, and platform, click the Product or Family link to enter one or more search criteria.
3. Click **Search** to execute your query. The Patch Search Results page opens.
4. Click the patch ID number. The system displays details about the patch. In addition, you can view the Read Me file before downloading the patch.
5. Click **Download**. Follow the instructions on the screen to download, save, and install the patch files.

Finding Documentation on Oracle Technology Network

The Oracle Technology Network Web site contains links to all Oracle user and reference documentation. To find user documentation for Oracle products:

1. Go to the Oracle Technology Network at

   http://www.oracle.com/technetwork/index.html and log in.

2. Mouse over the Support tab, then click the **Documentation** hyperlink.

   Alternatively, go to Oracle Documentation page at

   http://www.oracle.com/technology/documentation/index.html

3. Navigate to the product you need and click the link.

   For example, scroll down to the Applications section and click Oracle Health Sciences Applications.

4. Click the link for the documentation you need.

Related Documents

For more information, see the following documents in the Oracle Business Intelligence Data Warehouse Administration Console 11.1.1.6.4 documentation set, the Oracle Business Intelligence Enterprise Edition Release 11.1.1.6.4 documentation set, and Oracle Healthcare Master Person Index Release 1.1 documentation set.

Oracle Business Intelligence Data Warehouse Administration Console (DAC) Documentation

The Oracle Business Intelligence Data Warehouse Administration Console (DAC) documentation set includes:

- *Oracle Business Intelligence Data Warehouse Administration Console User's Guide*
- *Oracle Business Intelligence Data Warehouse Administration Console Installation, Configuration, and Upgrade Guide*

Oracle Business Intelligence Enterprise Edition (OBIEE) Documentation

The *Oracle Business Intelligence Suite Enterprise Edition Online Documentation Library* documentation set includes:

- *Oracle® Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition 11g Release 1 (11.1.1)*
- *Oracle® Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition 11g Release 1 (11.1.1)*
- *Oracle® Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition 11g Release 1 (11.1.1)*
- *Oracle® Fusion Middleware Scheduling Jobs Guide for Oracle Business Intelligence Enterprise Edition 11g Release 1 (11.1.1)*
- *Oracle® Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition 11g Release 1 (11.1.1)*
- *Oracle® Fusion Middleware Developer's Guide for Oracle Business Intelligence Enterprise Edition 11g Release 1 (11.1.1)*
- *Oracle® Fusion Middleware Integrator's Guide for Oracle Business Intelligence Enterprise Edition 11g Release 1 (11.1.1)*

Oracle Healthcare Master Person Index (OHMPI) Documentation

For more information and instructions for implementing and using a master index application, see the following documents in the Oracle Healthcare Master Person Index Release 1.1 documentation set:

- *Oracle Healthcare Master Person Index Installation Guide*
- *Oracle Healthcare Master Person Index Release Notes*
- *Oracle Healthcare Master Person Index User's Guide*
- *Oracle Healthcare Master Person Index Configuration Guide*
- *Oracle Healthcare Master Person Index Configuration Reference*
- *Oracle Healthcare Master Person Index Data Manager's Guide*
- *Oracle Healthcare Master Person Index Match Engine Reference*
- *Oracle Healthcare Master Person Index Standardization Engine Reference*
- *Oracle Healthcare Master Person Index Analyzing and Cleansing Data User's Guide*
- *Oracle Healthcare Master Person Index Loading the Initial Data Set User's Guide*
- *Oracle Healthcare Master Person Index Command Line Reports and Database Maintenance User's Guide*
- *Oracle Healthcare Master Person Index Working With IHE Profiles*
- *Oracle Healthcare Master Person Index WebLogic User's Guide*

Conventions

The following text conventions are used in this document:

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

1 Before You Begin

This section presents an overview of the Oracle Health Sciences Clinical Development Analytics (OHSCDA) requirements. It also describes the tasks that you must complete before you can install the application.

This chapter includes the following section:

1.1 Technology Stack and System Requirements

The requisite technology stack for OHSCDA configuration is provided in the media pack, with the exception of Informatica. It consists of the following products:

- Oracle Database 11.2.0.3
- Oracle WebLogic Server 10.3.5
- Oracle Business Intelligence Enterprise Edition (OBIEE) 11.1.1.6 and patches 14538078, 14538128, 14285344, 14538164, 14415773, 14405222, and 14409674.
- Oracle Business Intelligence Data Warehouse Administration Console 10.1.3.4.1 and patch 14306642.
- Informatica PowerCenter 9.0.1 HotFix 2

Note: Informatica is not part of the media pack. You need to acquire its license separately.

All references to *media pack server* in this document refer to the computer onto which you download the media pack for Oracle Health Sciences Clinical Development Analytics (Standard Configuration).

Make sure that the domain information of the Informatica repository, where you plan to import OHSCDA related Informatica mappings, is added to domains.infa file of the Informatica client.

- Oracle Healthcare Master Person Index (OHMPI) 1.1.2 with patch 12735093 (Optional)

Table 1–1 System Requirements References

Product	Reference
Oracle Database 11.2.0.3	*Database Installation Guide for <platform>*
Oracle WebLogic Server 10.3.5	*Oracle WebLogic Server Documentation Library*
Oracle Business Intelligence Enterprise Edition (OBIEE) 11.1.1.6 and patches 14538078, 14538128, 14285344, 14538164, 14415773, 14405222, and 14409674.	*System Requirements and Supported Platforms for Oracle Business Intelligence Suite Enterprise Edition* *Oracle Business Intelligence Infrastructure Installation and Configuration Guide*
Oracle Business Intelligence Data Warehouse Administration Console 10.1.3.4.1 and patch 14306642	*Oracle Business Intelligence Data Warehouse Administration Console Installation, Configuration, and Upgrade Guide* *Data Warehouse Administration Console User's Guide*
Informatica PowerCenter 9.0.1 HotFix 2	*Informatica PowerCenter Installation Guide*
Oracle Healthcare Master Person Index 1.1.2 patch 12735093	*Oracle Healthcare Master Person Index* Documentation Library
Other Technology Stack Components	My Oracle Support / Certifications

Note: It is important to get the technology stack products from the OHSCDA media pack because newer versions of the technology stack products may have become available but may not be compatible with OHSCDA.

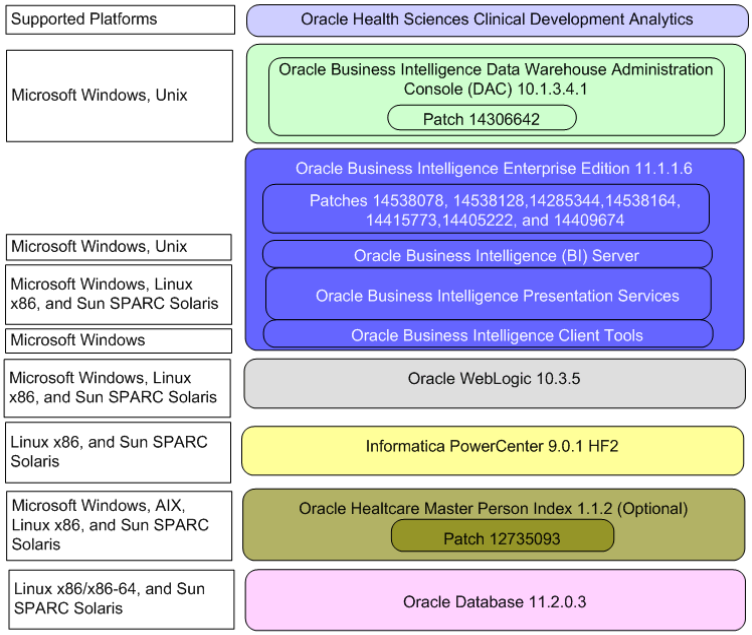
Installation Considerations

- Determine the computer on which you will install each component of OHSCDA (Standard Configuration).
- You may select to install each product on a different server, if required. The OHSCDA (Standard Configuration) media pack server does not have to act as server for any of the products, though it may. You may consult Figure 1–1, and the documentation listed in Table 1–1 for information on installing each product.
- Determine the databases you need to create.
- You must create a database schema to serve as the warehouse for OHSCDA.
- If you have already installed OHSCDA for Plus Configuration, you may not create the OHSCDA schema for Standard Configuration in the same database that has Oracle LSH; doing so would create a name collision.
- It is a good practice to create the schema for the OHSCDA Standard Configuration warehouse in a new database.
- You may select to create schemas for repositories for the other OHSCDA components in the same database that will be used for the OHSCDA warehouse. It minimizes the number of databases that you need to maintain for OHSCDA. However, if you will be using the component applications for purposes other than OHSCDA, Oracle recommends that you create their repositories in instances other than the one holding the OHSCDA warehouse.
- If you plan to implement deduplication, you may create the schemas for the OHMPI Master Indexes either in the OHSCDA warehouse database, or in a separate database specific to OHMPI Master Indexes. If you are using OHMPI for

purposes in addition to OHSCDA, Oracle recommends that the Master Index schemas be created in a database specific to OHMPI.

- OHMPI Projects need to be deployed on Oracle WebLogic Server. You may select to deploy the OHMPI projects on the same Oracle WebLogic Server used for OBIEE by creating a new WebLogic domain running on different port (which is not used by any other domains) or you may choose to deploy the projects on a different Oracle WebLogic Server instance.

Figure 1–1 Oracle Health Sciences Clinical Development Analytics Technology for Standard Configuration



For more information about certifications, refer to Finding Certification Information on page vi.

1.1.1 Supported Browsers

OHSCDA supports those Internet browsers supported by OBIEE. For a list of the browsers supported by OBIEE, refer to *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*

11g Release 1 (11.1.1).

1.1.2 Source Systems

CDA is designed to extract data from the following two systems:

1. OC 4.5.0.23 or higher
2. SC 8.0.x or 8.1.1.

1.2 General Security Principles

The following principles are fundamental to using any application securely.

1.2.1 Keep Software Up To Date

One of the principles of good security practice is to keep all software versions and patches up to date.

1.2.2 Keep Up To Date on Latest Security Information Critical Patch Updates

Oracle continually improves its software and documentation. Critical Patch Updates are the primary means of releasing security fixes for Oracle products to customers with valid support contracts. They are released on the Tuesday closest to the 17th day of January, April, July and October. We highly recommend customers apply these patches as soon as they are released.

1.2.3 Configure Strong Passwords on the Database

Although the importance of passwords is well known, the following basic rule of security management is worth repeating:

Ensure all passwords are strong passwords.

You can strengthen passwords by creating and using password policies for your organization. For guidelines on securing passwords and for additional ways to protect passwords, refer to the *Oracle® Database Security Guide* specific to the database release you are using.

You should modify the following passwords to use your policy-compliant strings:

- Passwords for the database default accounts, such as SYS and SYSTEM.
- Passwords for the database application-specific schema accounts, such as RXI.
- The password for the database listener. Oracle recommends that you do not configure a password for the database listener as that will enable remote administration. For more information, refer to *Oracle® Database Net Services Reference 11g Release 2 (11.2)*

1.2.4 Follow the Principle of Least Privilege

The principle of least privilege states that users should be given the least amount of privilege to perform their jobs. Overly ambitious granting of responsibilities, roles, grants — especially early on in an organization's life cycle when people are few and work needs to be done quickly — often leaves a system wide open for abuse. User privileges should be reviewed periodically to determine relevance to current job responsibilities.

1.2.5 Managing Default User Accounts

Lock and expire default user accounts.

1.2.6 Closing All Open Ports Not in Use

Keep only the minimum number of ports open. You should close all ports not in use.

1.2.7 Disabling the Telnet Service

Oracle Health Sciences Clinical Development Analytics Standard Configuration does not use the Telnet service.

Telnet listens on port 23 by default.

If the Telnet service is available on any computer, Oracle recommends that you disable Telnet in favor of Secure Shell (SSH). Telnet, which sends clear-text passwords and user names through a log-in, is a security risk to your servers. Disabling Telnet tightens and protects your system security.

1.2.8 Disabling Other Unused Services

In addition to not using Telnet, the Oracle Health Sciences Clinical Development Analytics Standard Configuration does not use the following services or information for any functionality:

- Simple Mail Transfer Protocol (SMTP): This protocol is an Internet standard for E-mail transmission across Internet Protocol (IP) networks.
- Identification Protocol (identd): This protocol is generally used to identify the owner of a TCP connection on UNIX.
- Simple Network Management Protocol (SNMP): This protocol is a method for managing and reporting information about different systems.

Restricting these services or information does not affect the use of Oracle Health Sciences Clinical Development Analytics Standard Configuration. If you are not using these services for other applications, Oracle recommends that you disable these services to minimize your security exposure. If you need SMTP, identd, or SNMP for other applications, be sure to upgrade to the latest version of the protocol to provide the most up-to-date security for your system.

1.2.9 Designing for Multiple Layers of Protection

When designing a secure deployment, design multiple layers of protection. If a hacker should gain access to one layer, such as the application server, that should not automatically give them easy access to other layers, such as the database server.

Providing multiple layers of protection may include:

- Enable only those ports required for communication between different tiers, for example, only allowing communication to the database tier on the port used for SQL*NET communications (1521 by default).
- Place firewalls between servers so that only expected traffic can move between servers.

1.2.10 Enabling SSL

Due to the complexity in setting up SSL it is not enabled by default during installation. Communications between the browser and the application servers should be restricted to SSL. See the Oracle WebLogic Server 11g guidelines for instructions on enabling SSL.

1.3 Security Guidelines for Oracle Business Intelligence Data Warehouse Administration Console

While installing and configuring the DAC Server, follow the guidelines documented in *Oracle Business Intelligence Data Warehouse Administration Console Installation, Configuration, and Upgrade Guide*.

The OHSCDA DAC metadata consists of DAC Repository which must be deployed on the DAC Server.

After deploying the DAC Repository, make sure all connection configurations are altered as described in the DAC Installation Guide to point to the customer database connection parameters.

The DAC Repository contains only metadata for OHSCDA Informatica ETLs. The metadata is used within the context of the DAC Server. Follow the security guidelines applicable to the DAC Server while importing the metadata.

1.4 Security Guidelines for Oracle Healthcare Master Person Index

While installing and configuring OHMPI, follow the guidelines documented in *Oracle Healthcare Master Person Index Installation Guide*.

OHSCDA need to store the OHMPI username and password that is needed to set Context and call the OHMPI EJB during incremental dedup ETL execution. This user name and password is encrypted and stored in secret store wallet files. Key management is built in using a Java program, eliminating the complex task of creating, managing, and securing information.

Java program code in Informatica Java transformation is used to retrieve the password during incremental OHMPI program executions which are then used for setting context and executing the OHMPI EJB. These programs are executed with the privileges of Informatica OS user which works implicitly granting access to restricted folders and wallet files in them.

Note: During the installation, the folder and Wallet files within are given restricted access at Operating System privileges; this is key technique by which OHSCDA secures the user_id and password.

While importing and setting up OHSCDA's OHMPI projects, follow the guidelines documented in OHMPI documents.

The OHSCDA's OHMPI metadata consists of 15 OHMPI projects which are zipped into individual files. Ensure that only an Administrator is given access to these files.

After importing the projects, make sure that the data source connection, JMS Servers, and JMS Topics are created in Oracle WebLogic Server console and the user created in Oracle WebLogic Server is assigned to MasterIndex.Admin group.

1.5 Security Guidelines for Oracle Business Intelligence Enterprise Edition

While installing and configuring the OBIEE Server, you should follow guidelines in the document *Oracle® Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition 11g Release 1 (11.1.1)Part Number E10543-02*.

1.5.1 Checking External Links that May Expose Account Data

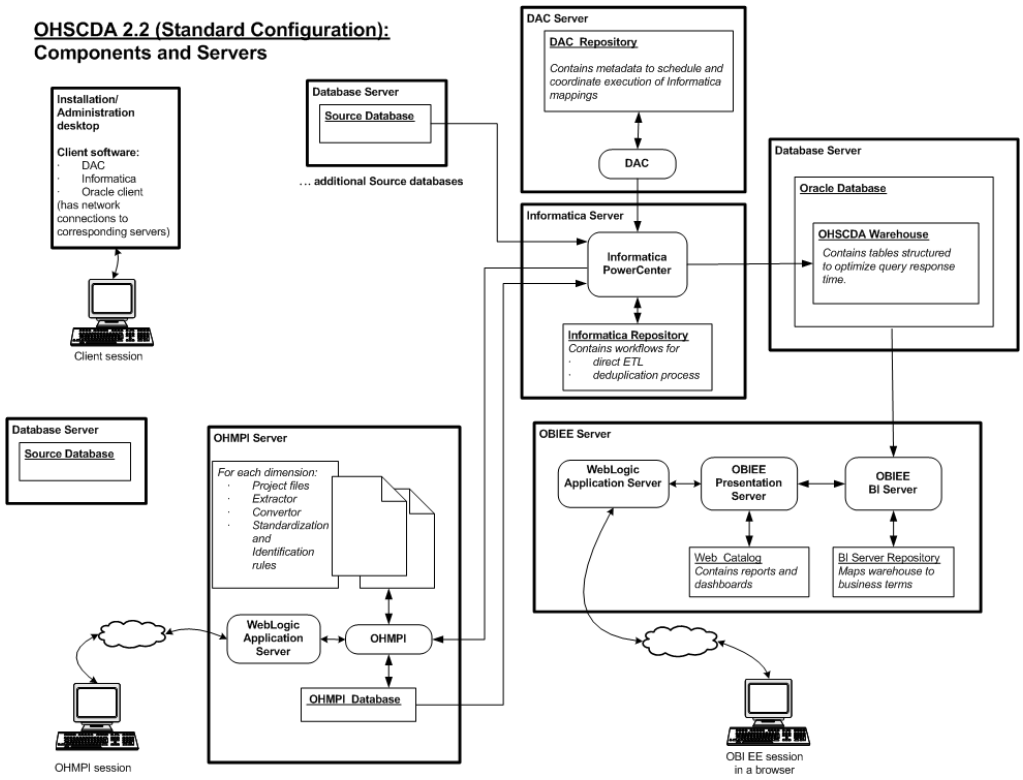
It is possible to add customized links to web applications that are deployed in a web server. Through this mechanism, any information that can be made available through a URL can be made accessible to OHSCDA users. In addition, your customized links may support passing session parameters, such as the log-in user ID, and currently selected Product, Program, Study and Site to a URL. By passing these session parameters, you can access Web pages specific to you current selections on these

attributes. However, you should be aware that in links that access external Web sites, passing account data and session information may pose a security risk.

1.6 Installing the Prerequisite Software

Following is a sample topology of technology components for OHSCDA:

Figure 1–2 Sample Topology



Before you can install the OHSCDA application, you must complete the following pre-installation tasks:

❑ Install Oracle Database 11.2.0.3

> **Note:** You must set the init parameter *processes* for the database to a minimum of 500.

Follow the instructions in *Database Installation Guide for <platform>*.

❑ Install Oracle WebLogic Server 10.3.5

Follow the instructions in *Oracle WebLogic Server Documentation Library*.

Note: If you plan to implement deduplication, you may choose to use the same instance of Oracle WebLogic for deploying OHMPI Projects by creating a new WebLogic domain running on different port (which is not used by any other domains) or create a fresh instance of Oracle WebLogic.

You must set the MaxPermSize to 2 GB.

- ❏ Install Oracle Business Intelligence Enterprise Edition (OBIEE) 11.1.1.6.4 with the following components:
  - Oracle Business Intelligence Server (Supported only on Windows and Unix)
  - Oracle Business Intelligence Presentation Services (Supported on Windows and Unix)
  - Oracle Business Intelligence Client Tools (Supported only on Windows)

  Follow the instructions in *Oracle Business Intelligence Infrastructure Installation and Configuration Guide*.
- ❏ Install Oracle Business Intelligence Data Warehouse Administration Console (DAC) 10.1.3.4.1
  - Install Oracle Business Intelligence Data Warehouse Administration Console (DAC)

    Follow the instructions in *Oracle Business Intelligence Data Warehouse Administration Console Installation, Configuration, and Upgrade Guide*.
  - Install patch number 14306642

    The patch is available in OHSCDA_HOME/software. Follow the instructions in the patch readme to install it.

    Important: If DAC and Informatica Servers are on different systems, *do not* copy infa_command.xml from 14306642 patch.
- ❏ Install Informatica PowerCenter 9.0.1 HotFix 2

  Follow the instructions in *Informatica PowerCenter Installation Guide*.
- ❏ If you plan to implement deduplication, install Oracle Healthcare Master Person Index (OHMPI) 1.1.2 patch 12735093.

  Note: Oracle recommends that you enable HTTPS on middle-tier computers that are hosting the Web services, since otherwise the trusted user name and password that are passed can be intercepted.

2

Installing Oracle Health Sciences Clinical Development Analytics Standard Configuration

This chapter describes the OHSCDA Installation tasks that you must complete.

This chapter includes the following section:

2.1 Installing Oracle Health Sciences Clinical Development Analytics Standard Configuration

This section describes the OHSCDA Installation tasks that you must complete.

Note:

- All references to ${DAC_INSTALL_DIR} in this document refer to DAC installation folder.

OHSCDA application installation consists of seven components:

- Running the OHSCDA Installer
- Setting Up Relational Connections in the Informatica Workflow for OHSCDA
- Preparing a DAC Repository for OHSCDA
- Emplacing the OHSCDA Help and Image Files
- Preparing the OBIEE Web Catalog and Repository for OHSCDA
- Setting Up OHMPI Projects (Optional)

2.1.1 Running the OHSCDA Installer

The basic OHSCDA components are installed using the Oracle Universal Installer. The installer gathers all the information about the database connectivity, data mart, Informatica repository by presenting a sequence of prompt screens and then installs the components accordingly.

Important: Make sure that both the Oracle Database client and the Informatica client are available on the same system where you plan to execute the installer.

Perform the following steps to install the OHSCDA application on Windows:

1. Extract the contents of the media pack into a temporary directory (For example, C:\ocda_temp).
2. Navigate to the \install directory under the extracted temporary folder.
3. Double-click the setup.exe file to launch the Oracle Universal Installer with the Welcome screen.

   The installer will take you through a series of screens having fields. Attend to the Installer's prompts. The following sections describe each Installer screen, and the required action.
4. Review the Oracle Universal Installer Welcome screen and click **Next**.

   The Welcome screen provides information about the Oracle Universal Installer. The following function buttons appear on the installation screens:

   - **Deinstall Products**: Deinstall individual components or the entire product. This button appears only on the Welcome screen.
   - **About Oracle Universal Installer:** View the version number of the installer in use.
   - **Help:** Access detailed information about the functionality of each screen.
   - **Installed Products:** View currently installed products or deinstall the entire product or components.
   - **Next:** Proceed to the next screen.
   - **Cancel:** Cancel the installation process and exit the installer.
5. Click **Next**.
6. Specify Home Details screen is displayed.

   The OHSCDA Home path is the location where all the staged files from the Installer will get copied to the local system. This is also the location from where Installer would execute the database and Informatica scripts.

   Example Name: OCDAHome1

   Path: C:\OCDA
7. Click **Next**.
8. Install or Upgrade OHSCDA screen is displayed.

   Specify whether you want to make a fresh installation of OHSCDA or upgrade an existing OHSCDA instance.
9. Click **Next**.
10. OHSCDA Data Warehouse Details screen is displayed.

    This screen collects all the information regarding the OHSCDA data warehouse details.

    Enter values in the following fields:

OHSCDA Warehouse Target Connect Name: Logical Name for Connection to be created in Informatica. For example, DataWarehouse. For upgrade, this should be same as the one already configured in Oracle DAC and Informatica PowerCenter.

Connect String of the Warehouse: Connection of the database where OHSCDA DataWarehouse will be deployed.

Default Table Space:

Temporary Table Space:

11. Click **Next** and enter. OHSCDA Data Warehouse is displayed. Enter and confirm the System Password of the database where OHSCDA Data Warehouse will be deployed.
12. Click **Next** and enter and confirm:

    OHSCDA Warehouse Schema (RXI) Password:
13. Click **Next** and enter and confirm:

    OHSCDA RPD (RXI_RPD) Password:
14. OHSCDA Informatica PowerCenter Details screen is displayed.

    This screen collects all information to connect to the Informatica server.

    Enter values in the following fields:

    - **Informatica Repository Name**: Informatica Repository Name where you plan to import OHSCDA Informatica mappings.
    - **Informatica Domain Name**: Domain of the Informatica repository.
    - **Informatica Hostname**: Host name of the Informatica server.
    - **Informatica Repository Port Number**: Port number of the Informatica server.
    - **Informatica Username with admin privileges**: User with Admin privilege to import XMLs.
15. Click **Next** and enter.

    Informatica Password for Admin user: Password for Informatica User with admin privileges.
16. OHSCDA Informatica PowerCenter Client Home Directory screen is displayed.

    The Informatica PowerCenter client home path is required for the installer to run successfully.

    Example:

    Informatica PowerCenter client home: D:\Informatica\9.0.1\clients\PowerCenter client\client
17. Click **Next**.
18. Multi Source Integration History screen is displayed only if you are upgrading OHSCDA.

    Select **Yes** if you previously installed OHSCDA2.1 with MSI, or else select **No**.
19. Click **Next**.
20. Multi Source Integration screen is displayed.

    Select **Yes** to confirm that you plan to use multi source integration feature of OHSCDA.

If you do not plan to use multi source integration, select **No** and move to step 27.

21. Click **Next**.
22. Oracle Healthcare Master Person Index screen is displayed.

    Enter values in the following fields:

    - **Connect String of OHMPI Schemas**
    - **Default Table Space**
    - **Temporary Table Space**

23. Click **Next** and enter and confirm:

    System Password for OHMPI Database: System Password of the database where OHMPI model will be deployed

24. Click **Next** and enter and confirm:

    sys Password for OHMPI Database: SYS password of the database where OHMPI model will be deployed.

25. Click **Next** and enter and confirm:

    Master Password for OHMPI Schemas: Master Password that will be set to all 15 OHMPI schemas.

26. Click **Next**.
27. Summary screen is displayed.

    Verify setting => details provided in the summary screen.

28. Click **Install**.

    At the completion of the installation, you can inspect the installation log at:

    <ocda_home>\install\ocda_install.log.

2.1.2 Setting Up Relational Connections in the Informatica Workflow for OHSCDA

1. For each database that will be a source for extracting data into the OHSCDA warehouse, perform the following to create a Relational Connection in the Informatica Workflow Manager. (If you are using OHMPI, include the OHMPI Master Index database as one of the sources for which you create a Relational Connection):

    a. Launch Informatica PowerCenter Workflow Manager.

    b. Connect to the repository where OHSCDA Informatica mappings are imported.

    c. Select **Connections**, and then select **Relational** to display the Relational Connection Browser.

    d. Click **New** to display the Select Subtype dialog.

    e. Select **Oracle** as database type, and then click **OK**. The Connection Object Definition dialog box is displayed with options for the selected database platform.

    f. Enter values in the following fields according to the Source database connection:

    Connection Name — Enter the logical connection name.

User Name — Enter the user name that can access source data (For example, rxa_des for Oracle Clinical.)

Password — Enter the database password.

Connection String — Enter the Connect string for connecting to the database.

Code Page — Enter UTF-8 encoding of Unicode.

Note: These values will also be required in setting up DAC. Make note of them to ensure that you enter the same during DAC setup.

The TNS entry for all your source and target databases should be added on Informatica Server.

Note: You need to repeat step a through d for each required source connection.

---

2. Connect to Informatica PowerCenter Administration Console.
3. Connect to the Informatica integration service.
4. Navigate to the **Custom Properties** window.
5. Enter `AggSupprtWithNoPartLic` in the **Name** field.
6. Enter `Yes` in the **Value** field.

2.1.3 Preparing a DAC Repository for OHSCDA

You will be using CDA_Warehouse.zip file in this section.

1. Create a new DAC repository, as an Administrator.
2. Unzip OCDA_HOME\soracle.pharma.ocda.standard\DAC_Code\CDA_Warehouse.zip onto the computer where you will run DAC client.
3. Import the OHSCDA Warehouse Application metadata.
   a. Start the Data Warehouse Administration Console (DAC) client.
   b. From the **Tools** menu select **DAC Repository Management**, and then select **Import**.
   c. Click **Change import/export folder** to navigate to the folder where you unzipped CDA_Warehouse.zip in step 2 of the Preparing a DAC Repository for OHSCDA section.
   d. Click **OK** to display the Import dialog box.
   e. Select the following categories of metadata you want to import: **Logical**, **Overwrite log file**, and **User Data**. Deselect the **System** check box.
   f. If you plan to implement deduplication, select all the applications in the ApplicationList else select only **CDA_Warehouse** application in the ApplicationList.
   g. Click **OK**.
   h. Enter the verification code and **Yes** in the secondary window that is displayed after the import.

i. You can inspect the import log in *${DAC_ INSTALL_DIR}*\log\import.log to verify if import is successful.

4. Configure Informatica Repository Service in DAC.
   a. Navigate to the **Setup** view, and then select the **Informatica Servers** tab.
   b. Click **New** to display the Edit tab below or select an existing Informatica server from the list.

      If you are configuring a new installation, the Informatica Servers tab will be empty. If you are upgrading an existing installation, the Informatica Servers tab might contain existing Informatica servers.
   c. Enter values in the following fields:

      Name — Enter the Logical name for the Informatica server (for example, INFA_REP_SERVER).

      Type — Select `Repository`.

      Hostname — Enter the host system name where Informatica Server is installed.

      Server Port — Enter the port number Informatica Server or Informatica Repository Server use to listen to requests.

      Login — Enter the Informatica user login for the Admin user.

      Password — Enter the Informatica Repository password.

      Repository Name —Enter the Informatica Repository Name.
   d. Test the connection to verify the settings.
   e. Click **Save** to save the details.
5. Configure Informatica Integration Service in DAC.

   Note: Make sure that you use the same Login and Password that you have used in setting up Informatica.

   a. Click **New** to display the Edit tab below or select an existing Informatica server from the list.

      If you are configuring a new installation, the Informatica Servers tab will be empty. If you are upgrading an existing installation, the Informatica Servers tab might contain existing Informatica servers.
   b. Enter values in the following fields:

      Name — Enter the Logical name for the Informatica server (for example, INFA_SERVER).

      Type — Select `Informatica`.

      Service — Informatica Integration Service Name associated with the Informatica repository added in Step 5.

      Domain — Enter the Informatica domain name.

      Login — Enter the Informatica Repository user login (Admin User).

      Password — Enter the Informatica Repository password.

      Repository Name —Enter the Informatica Repository Name.

c. Test the connection to verify the settings.

d. Click **Save** to save the details.

6. In this step, you configure source databases (Oracle Clinical, Siebel Clinical) and the target database (the OHSCDA warehouse). For each database with which DAC will interact for OHSCDA, perform the following steps:

   a. Navigate to the **Setup** view, and then select the **Physical Data Sources** tab.

   b. Click **New** to display the Edit tab below or select an existing database connection from the list.

   c. Enter values in the following fields:

      Name — Enter the Logical name for the database connection.

      Type — Select `Source` when you create the database connection for a transactional (OLTP) database. Select `Warehouse` when you create the database connection for a data warehouse (OLAP) database. Select **Others** when you create the database connection for OHMPI schema.

      Connection Type — Select a connection type for the database connection.

      Instance or TNS Name — Enter the Data Mart database instance name.

      Table Owner — Enter the Data Mart schema name.

      Table Owner Password — Enter the Data Mart schema password.

      DB Host — Enter the Data Mart host name.

      Port — Enter the Data Mart host port.

      Dependency Priority — Enter the user-defined priority of the data source.

      Data Source Number — Enter the user-defined number of the data source.

      Num Parallel Indexes Per Table — Enter a number to specify how many indexes are to be created in parallel.

   d. Test the connection to verify the settings.

   e. Click **Save** to save the details.

   Note: By Default, Oracle supports Data Source Number 1 and 2 for Oracle Clinical and Siebel Clinical respectively.

   The logical Names of the connections in DAC should be same as the connection names created in Informatica Workflow Manager.

   OHSCDA Warehouse connection should be the same as provided during OHSCDA installation.

   ---

7. If you plan to implement deduplication, create the physical data source connections with following details in DAC:

   Type: Other

   Connection Type: Oracle (Thin).

   Instance: Instance name of the database.

   Dependency Priority: Enter the user-defined priority of the data source.

   Data Source Number: Enter the user-defined number of the data source.

Num Parallel Indexes Per Table: Enter a number to specify how many indexes are to be created in parallel.

Table 2–1 Physical Data Source Connection Details

Name	Table Owner
OHMPI_STUDY	ohmpi_study
OHMPI_STUDY_SITE	ohmpi_study_site
OHMPI_STUDY_SUBJ	ohmpi_study_subj
OHMPI_GEO	ohmpi_geo
OHMPI_LOV	ohmpi_lov
OHMPI_SITE	ohmpi_site
OHMPI_INVESTIGATOR	ohmpi_investigator
OHMPI_USER	ohmpi_user
OHMPI_VALDTN_PROC	ohmpi_valdtn_proc
OHMPI_PRODUCT	ohmpi_product
OHMPI_PROGRAM	ohmpi_program
OHMPI_APP_USER	ohmpi_app_user
OHMPI_STUDY_REGION	ohmpi_study_region
OHMPI_CRF	ohmpi_crf
OHMPI_CRF_BOOK	ohmpi_crf_book

Note: Table Owner Password for all the OHMPI_<dim> connections is the same as the Master password provided on OHMPI screen during OHSCDA installation.

8. If you plan to implement deduplication, create a Flat File connection with the following details:

   Name: FlatFile_Target

   Type: Other

   Connection Type: Flat File

   Dependency Priority: Enter the user-defined priority of the data source.

   Data Source Number: Enter the user-defined number of the data source.

   Num Parallel Indexes Per Table: Enter a number to specify how many indexes are to be created in parallel.

9. Perform the following steps to modify the value for data sources:

   a. Navigate to the **Execute** view, and then select the **Execution Plans** tab.

   b. If Oracle Clinical and Siebel Clinical are your source systems, select **CDA - Complete Warehouse** from the list.

      If Oracle Clinical is your only source system, select **CDA - Oracle Clinical Warehouse** from the list.

      If Siebel Clinical is your only source system, select **CDA - Siebel Clinical Warehouse** from the list.

   c. Click **Parameters** subtab in the bottom pane.

d. For each row with TYPE equal to DATASOURCE, in the **Value** field, select the appropriate Physical Data Source Name from the dropdown list for the field.

e. If you plan to implement deduplication, navigate to **CDA - Complete Initial De Dup Execution Plan** and **CDA - Complete Warehouse De Dup Execution Plan**.

f. Select a relevant value from the list for each of the data sources.

g. Click **Save**.

h. If you plan to implement deduplication, navigate to **CDA - Complete Warehouse De Dup** and set the new Data Source Name from Value list.

i. Select a relevant value from the list for each of the data sources.

j. Click **Save**.

Note: If Oracle Clinical and Siebel Clinical are your source systems without deduplication, use CDA - Complete Warehouse.

If Oracle Clinical is your only source system without deduplication, use CDA - Oracle Clinical Warehouse.

If Siebel Clinical is your only source system without deduplication, use CDA - Siebel Clinical Warehouse.

If Oracle Clinical and Siebel Clinical are your source systems with deduplication, use CDA - Complete Initial De Dup Execution Plan and CDA - Complete Warehouse De Dup Execution Plan.

DAC Configurable Parameters

Navigate to each of the containers and make sure that values are set for each of the available parameter.

Following is the list of DAC configurable parameters:

Table 2–2 DAC Configurable Parameters

Parameter	Description
START_TS	This is the last refresh time of the source tables minus prune days (@DAC_SOURCE_PRUNED_REFRESH_TIMESTAMP)
END_TS	Current Execution Plan's actual start time adjusted to source database time zone minus prune days. (@DAC_ETL_START_TIM FOR_SOURCE)
DATASOURCE_NUM_ID	The ID associated with every source system. The default ID is 1 f Oracle Clinical and 2 for Siebel Clinical.
ENTERPRISE_ID	The ID associated for every tenant. The default value is 0.
DELETE_FLOW	The default value is N and set it to Y if Deletes have to be capture in the data warehouse.
EMAIL_SUFFIX	You can provide domain name as a suffix to username. For example: oracle.com
Prune Days	This is used for setting the END_TS for incremental load.
MPI_AUTHFILE	Location of the ocda.properties. Refer to Section 2.1.9, "Setting Up Informatica Server (Optional)" for file details. For example: /u01/oracle/Informatica/9.0.1/server/infa_shared/OCDA_Javalib/ocda.properties

Table 2–2 (Cont.) DAC Configurable Parameters

Parameter	Description
MPI_USER	Login name of the user who can access EJBs deployed on Oracle WebLogic Server (same user that was provided on WebLogic screen during OHSCDA installation).
$OutputFile_OCDA	Location of the flat files generated as part of full dedup load on Informatica server.
$DBConnection_SP_OLAP	Database connection name of the corresponding OHMPI schema.
$DBConnection_OLAP	Database connection name of the warehouse (OHSCDA Warehouse Target Connect Name you had specified in step 10 of Section 2.1.1, "Running the OHSCDA Installer,").

Note: MPI_AUTHFILE, MPI_USER, $OutputFile_OCDA, $DBConnection_SP_OLAP, and $DBConnection_OLAP are used only for deduplication.

2.1.4 Emplacing the OHSCDA Help and Image Files

You will be using help.zip and images.zip files in this section.

2.1.4.1 Placement of Files for Oracle WebLogic Managed Server

You need to manually deploy OHSCDA's help and images files on Oracle WebLogic Managed Server. Perform the following steps:

1. Navigate to <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\ in Oracle WebLogic Server.
2. Create the following folders at <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\
   - s_ocda
3. Unzip help.zip from OCDA_Home\oracle.pharma.ocda.standard\Reporting\Help to <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\s_ocda\
4. Move customMessages and sk_ocda folders from <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\s_ocda\ to <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\
5. Add the following tag in instanceconfig.xml, present in <MIDDLEWARE_HOME>\\instances\instance1\config\OracleBIPresentationServicesComponent\coreapplication_obips1.

   ```
   <UI><DefaultSkin>ocda</DefaultSkin></UI>
   ```

6. Unzip the Images.zip files from OCDA_Home\oracle.pharma.ocda.standard\Reporting\Images to <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\s_ocda

7. Launch Oracle WebLogic Administration Server Console.

   Example: `https://hostname.domain:port/console`

   This opens the Oracle WebLogic Server Administration Console.
8. Log in to Oracle WebLogic Server Administration Console as an Administrator.
9. In the left pane of the Administration Console, select **Deployments**.
10. On the left pane, click **Lock & Edit**.
11. In the right pane, click **Install**.

    This opens the Install Application Assistant.
12. In the **Path** field browse to <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\.
13. Select **analyticsRes** and click **Next**.
14. Select **Install this deployment as an application** and click **Next**.
15. In **Available targets for analytics**, select the servers in the cluster on which you want to deploy OHSCDA.
16. Click **Next**.
17. In the **Deployment targets**, select `bi_server1`.
18. Click **Next**.
19. Select **I will make the deployment accessible from the following location** option for <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\ in the Source accessibility section.
20. Click **Finish**. analyticsRes should appear under the Deployments.
21. Click **Activate Changes**.
22. Select **analyticsRes** in Deployment section.
23. Click **Start** to view the list and select **Servicing all requests**. The Start Application Assistant page is displayed.
24. In the content pane of the new page, click **Yes** to start the selected deployment.

    State of analyticsRes should be Active after this deployment. You may confirm the same on Deployments page.
25. Log out from Oracle WebLogic Server Administration Console.
26. Log in to Oracle Enterprise Manager Fusion Middleware Control.
27. Restart the BI components.
28. Log in to OBIEE and verify the branding and help links on the dashboards.

See Also:

- *Oracle WebLogic Server Documentation Library*

2.1.5 Preparing the OBIEE Web Catalog and Repository for OHSCDA

You will be using OracleClinicalDevelopmentAnalytics.zip and OCDA.rpd files in this section.

1. Copy OracleClinicalDevelopmentAnalytics.zip from OCDA_ Home\oracle.pharma.ocda.standard\Reporting\Webcat to OBIEE server.
2. Copy OCDA.rpd files from OCDA_ Home\oracle.pharma.ocda.standard\Reporting\RPD to OBIEE server.
3. Unzip OracleClinicalDevelopmentAnalytics.zip in the following folder:
   - Windows32 - <*DRIVE*>:\<MIDDLEWARE_ HOME>\instances\instance1\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\catalog
   - UNIX - /<MIDDLEWARE_ HOME>/instances/instance1/bifoundation/OracleBIPresentationServicesComponent/coreapplication_obips1/catalog
4. For fresh installation, create a TNS entry of OHSCDA database in %ORACLE_ BI%\network\admin.
5. Create an ODBC entry (System DSN) to connect to (RXI) using Oracle Database 11g client driver.
6. In the Oracle BI Administration Tool, select **File**, then **Open**, and then **Offline**.
7. Navigate to the OCDA.rpd, and then click **Open**.

   Password: `Admin123`
8. Click **OK**.
9. In the Oracle BI Administration Tool, select **File**, then **Change Password**.
10. Enter the current (old) password.
11. Enter the new password and confirm it.
12. Confirm the new password.
13. Click **OK**.
14. Modify the connection pools in the RPD as following:
    a. In the physical layer, expand the OHSCDA Data Warehouse node and double-click **Connection Pool** object to open Connection Pool dialog box.
    b. Set **Data source name** field to the ODBC entry for the warehouse you created in step 3.
    c. Change the username to the username of the OHSCDA read-only schema. (RXI_RPD)
    d. Change the password to the password of the OHSCDA read-only schema. (RXI_RPD)
    e. Click **OK**.
    f. Reconfirm the password.
    g. Click **OK**.
15. From the File menu, select **Save** to save the rpd.
16. Click **Yes** for Do you wish to check global consistency?
17. Click **Close** in the Consistency Check Manager.
18. Click **Save**.
19. Click **File** and then click **Close**.

20. Click **File** and then click **Exit**.
21. Open NQSConfig.xml found at <MIDDLEWARE_HOME>instances\instance1\config\OracleBIServerComponent\coreapplication_obis1.
22. Set `EVALUATE_SUPPORT_LEVEL = 2`.
23. Start the Oracle WebLogic Server and BI components.
24. Open the Fusion Middleware Control URL from the system where you saved the OCDA.rpd in step 13. The URL includes the name of the host and the port number assigned during the installation. The following shows the format of the URL:

    `https://hostname.domain:port/em`

    The login page is displayed.

    Note: Oracle recommends that you enable HTTPS on middle-tier computers that are hosting the Web services, since otherwise the trusted user name and password that are passed can be intercepted.

25. Enter the Oracle Fusion Middleware administrator user name and password and click **Login**.
26. Expand the **Business Intelligence** folder and select the **coreapplication** node.

    The Overview page displays the current status of the system, by providing information about current availability, performance, and issues identified within the BI domain. The Overview page also enables you to start and stop Oracle Business Intelligence.
27. Navigate the Repository tab of the Deployment page.
28. Click **Lock and Edit Configuration**.
29. Click **Close**.
30. In the Upload BI Server Repository section, click **Browse** and navigate to select the RPD.
31. Enter the RPD password in **Repository Password** and **Confirm Password** fields.
32. In the BI Presentation Catalog section, enter <ORACLE_INSTANCE>/bifoundation/OracleBIPresentationServicesComponent/<COMPONENT_NAME>/catalog/OCDA in the **Catalog Location** field.
33. Click **Apply**, and then click **Activate Changes**.
34. Return to the Business Intelligence Overview page and click **Restart**.

2.1.6 Configuring Maps

You will need to have a database with the sample map data set. Perform the following steps to download the sample map data set:

1. Go to http://www.oracle.com/technetwork/middleware/bi-foundation/obiee-samples-167534.html.
2. Navigate to **OBIEE 11.1.1.3 - Sample Application**.
3. Click **NAVTEQ Data Bundle for OBIEE**.

4. Click **Save**.

Perform the following steps to configure maps:

1. Open the **Map Viewer** console available at http://<*server*>:9704/mapviewer.
2. Click **Admin**.
3. Login with the user ID and password provided during the installation.
4. Click **Configuration**. This will launch the mapViewerConfig.xml file.
5. In the `<security_config>` property of the file, make the following changes:
   a. Change `<proxy_enabled_hosts>` property to hostname, IP address and port to correct values.

      Note: There are 4 entries — 2 pointing to hostname and 2 pointing to IP address of BI server. Ensure that all 4 entries point to the right server.

      For example,

      ```
      <proxy_enabled_hosts>
      http://localhost:9704/mapviewer,http://localhost:9704/,http://10.10.10.10:9
      704/,http://10.10.10.10:9704/mapviewer
      </proxy_enabled_hosts>
      ```

   b. Update or add the following entries:

      ```
      <disable_direct_info_request> true </disable_direct_info_request>
      <disable_info_request> true </disable_info_request>
      <disable_csf>true</disable_csf>
      <enforce_security_role> true </enforce_security_role>
      ```

6. In the 'Predefined Data Sources' section, add the following entry:

   ```
   <map_data_source name="OBIEE_NAVTEQ_Sample"
   jdbc_host="10.153.228.125"
   jdbc_sid="cda22dv"
   jdbc_port="1521"
   jdbc_user="obiee_navteq"
   jdbc_password="!obiee_navteq "
   jdbc_mode="thin"
   number_of_mappers="6"
   allow_jdbc_theme_based_foi="false"
   />
   ```

7. Click **Save and Restart** to save the changes and restart the services.

2.1.7 Creating Security Groups and Application Roles for OHSCDA

2.1.7.1 Creating Groups

Perform the following to create groups:

1. Launch Oracle WebLogic Server Administration Console.
2. In Oracle WebLogic Server Administration Console, select **Security Realms** from the left pane and click the realm you are configuring. For example, **myrealm**.
3. Select **Users and Groups** tab, then **Groups**.

4. Click **New**.
5. In the **Create a New Group** page provide the following information:
   - **Name**: Enter the name of the group. Group names are case insensitive but must be unique. See online help for a list of invalid characters.
   - (Optional) **Description**: Enter a description.
   - **Provider**: Select the authentication provider from the list that corresponds to the identity store where the group information is contained. DefaultAuthenticator is the name for the default authentication provider.
6. Click **OK**

   The group name is added to the Group table.
7. Repeat step 4 through 6 with the following values:

Table 2–3 Security Group Parameters

Name	Description	Provider
OCDA-CRA	(Optional)	DefaultAuthenticator
OCDA-DataManager	(Optional)	DefaultAuthenticator
OCDA-ExecutiveManager	(Optional)	DefaultAuthenticator
OCDA-RegionManager	(Optional)	DefaultAuthenticator
OCDA-StudyManager	(Optional)	DefaultAuthenticator
OCDA-WebcatAdim	(Optional)	DefaultAuthenticator

2.1.7.2 Creating Application Roles

Perform the following to create groups:

1. Log in to Oracle Enterprise Manager Fusion Middleware Control.
2. From the target navigation pane, open **Business Intelligence** and select **coreapplication**.
3. Right-click **coreapplication**, then select **Security** to display a submenu with **Application Policies** and **Application Roles** as options.
4. Select **Application Roles**. The Application Roles page is displayed.
5. Click **Create** to display the **Create Application Role** page. Complete the fields as follows:

   In the **General** section:
   - **Role Name** - Enter the name of the Application Role
   - (Optional) **Display Name** - Enter the display name for the Application Role.
   - (Optional) **Description** - Enter a description for the Application Role.
6. In the **Members** section, select **Add Group**. To search in the dialog box that displays:
   1. Click the blue button to search. It will display a list of all the groups.
   2. Select from the results returned in the **Available** box.
   3. Use the shuttle controls to move the desired name to the **Selected** box.
   4. Click **OK** to return to the **Create Application Role** page.
   5. Repeat steps 5 through 9 for all the Roles listed in the following table:

Table 2–4 Application Roles and Groups

Role Name	Description	Groups
OCDA-CRA	(Optional)	OCDA-CRA
OCDA-DataManager	(Optional)	OCDA-DataManager
OCDA-ExecutiveManager	(Optional)	OCDA-ExecutiveManager
OCDA-RegionManager	(Optional)	OCDA-RegionManager
OCDA-StudyManager	(Optional)	OCDA-StudyManager
OCDA-WebcatAdim	(Optional)	OCDA-WebcatAdim

2.1.8 Setting Up OHMPI Projects (Optional)

Follow the steps in this section only if you plan to implement deduplication. You must install Oracle client on the system where you intend to carry out OHMPI related cleanser and loader process. To set up OHMPI projects:

1. Navigate to OCDA Home.
2. Locate the zipped OHMPI Project files and move all the zipped files to a system where you plan to import and modify projects using NetBeans.
3. Copy and unzip all the 15 project files.
4. On the NetBeans toolbar, click **Open Project**.
5. Navigate to the folder where the OHMPI projects are unzipped.
6. Select a project.
7. Select the check box **Open Required Projects** and click **Open Project**.
8. Once the project is imported, right-click the main project file (OCDA_<*dim*>) in the Projects window.
9. Right-click the same project and select **Clean**.
10. Right-click and select **Generate Master Index Files**.
11. Right-click and select **Build**.
12. Navigate to <*project_home*>/src/DatabaseScript, where project_home is the location of the master person index project files.
13. Connect to the project specific database schema, for example, for OCDA_Study project use ohmpi_study as username and the master password provided on Oracle Healthcare Master Person Index screen during OHSCDA installation.
14. Execute the following files in the following order:
    1. create.sql
    2. systems.sql

       Note:

       The systemcode in systems.sql must be same as data source name provided in W_RXI_DATASOURCE_S. Note that systemcode is case-sensitive.

    3. codelist.sql

Important:

For OCDA_Geography project, execute Create_with_LID_changes.sql instead of create.sql.

For OCDA_User project, execute create_lidchange.sql instead of create.sql.

15. Repeat steps 4 through 14 for each of the 15 OHMPI projects.

2.1.8.1 Creating JDBC Data Resources for an MPI Application Project for Oracle

This section provides instructions for creating the JDBC data resources and defining the JDBC connections for an MPI Application Project for Oracle.

1. For instructions on how to start and stop Oracle WebLogic Server, see *Starting and Stopping Servers: Quick Reference* at `http://download.oracle.com/docs/cd/E14571_01/wls.htm`.
2. Log in to **Oracle WebLogic Server Administration Console**.
3. On the left panel, under Domain Structure, expand **Services**, and then choose **Data Sources**.

Table 2–5 Application Names for Each Project

Project Name	Application Name
OCDA_StudyStudy	Study
OCDA_Study_Site	Study_Site
OCDA_Study_Subject	subject
OCDA_Geography	Geography
OCDA_LOV	LOV
OCDA_Site	Site
OCDA_Investigator	Investigator
OCDA_User	OCDA_User
OCDA_Valdtn	OCDA_Valdtn
OCDA_Product	Product
OCDA_Program	Program
OCDA_APP_USER	App_User
OCDA_Study_Region	Study_Region
OCDA_CRF	CRF
OCDA_CRF_BOOK	CRF_BOOK

A summary of JDBC Data Sources appears in the right panel.

4. To create a new JDBC Data Source click **New** at the bottom of the right panel.

   Settings for a new JDBC Data Source appear in the right panel of the page. It is here that you will create a new JDBC Data Source.

5. In the Name field, type <*Application name*>`DataSource`.

   The name you enter here will propagate elsewhere, so choose a name that is meaningful (for example, StudyDataSource).

6. In the JNDI Name field, type `jdbc/`<*Application name*>`DataSource`.

Use the name you entered in step 5 (for example, **jdbc/StudyDataSource**).

7. In the Database Type list, choose the appropriate type (for example: **Oracle**).
8. Click **Next**.
9. In the Database Driver list, choose the appropriate driver; for example: **Oracle's Driver (Thin XA) for Instance Connections; Versions: 9.0.1; 9.2.0; 10, 11**.
10. Click **Next**.
11. Click **Next**.
12. In the Database Name field, type a name for the database to which you want to connect (for example: `OCDA_Study`).
13. In the Host Name field, type the name or the IP address of the database server (for example: `localhost`).
14. In the Port field, type the port on the database server that is used to connect to the database (for example: `1521`).
15. In the Database User Name field, type the database account user name you want to use to create database connections (for example: `ohmpi_study`).
16. In the Password field, type a password for your database account to use to create database connections.
17. In the Confirm Password field, re-type the password to confirm it.
18. Click **Next**.

    The Settings for StudyDataSource page appears in the right panel.
19. Click the **Connection Pool** tab, click **Test Configuration**, and then click **Next**.

    Select Targets window appears on the Create a New JDBC Data Source page in the right panel. You can select one or more targets to deploy the new JDBC data source.
20. In the Servers check list, select one or more target servers and click **Finish**.

    Note: If you do not select a target, the data source will be created but not deployed. You will need to deploy the data source at a later time.
21. Repeat the above steps to create jdbc/StudySequenceDataSource.

2.1.8.2 Creating JMS Resources for an MPI Application Project

JMS servers act as management containers for the queues and topics in the JMS modules that are targeted to them.

The following procedure includes instructions for creating JMS resources, which includes a:

- JMS Server
- JMS Module
- JMS Connection Factory in the specific JMS Module
- JMS Topic in the specific JMS Module

2.1.8.2.1 To Create JMS Server

1. On the left panel, under Domain Structure, expand **Services**, click **Messaging**, and then choose **JMS Servers**.

   A Summary of JMS Servers appears in the right panel. It includes a table that summarizes the JMS servers that have been created in the current WebLogic Server domain.

2. In the table of previously created JMS Servers, click **New**.

   The Create a New JMS Server panel appears.

3. In the Name field, type the name for your new JMS Server.

   Note: This name already exists in the table of previously created JMS Servers (in the example, **StudyJMSServer**).

4. Click **Next**.

   Select Targets appears in the right panel under Create a New JMS Server.

5. From the Target list select a target server instance or migratable target on which you want to deploy the JMS Server.

   Note: The default server instance is exampleServer.

6. Click **Finish**.

2.1.8.2.2 To Create JMS Module

1. On the left panel, under Domain Structure, expand **Services**, click **Messaging**, and then choose **JMS Modules**.

   The JMS Modules panel appears.

2. In the JMS Modules table, click **New** to add a new JMS Module.

   The Create JMS System Module panel appears.

3. In the Name field, type the new JMS Module name.

   Note: Remain consistent to the name chosen for the JDBC Data Source and the JMS Server (in the previous examples the key word was Study, making this name **StudyJMSModule**).

4. Click **Next**.

   Select Targets appears in the right panel under Create a New JMS System Module.

5. In the Servers area, select the server or cluster on which you want to deploy this JMS system module.

   Note: Retain the default, exampleServer.

6. Click **Finish**.

2.1.8.2.3 To Create JMS Connection Factory

1. On the left panel, under Domain Structure, expand **Services**, click **Messaging**, and then choose **JMS Modules**.
2. Choose the JMS Module (in the example, **StudyJMSModule**) from the table of JMS Modules.

   The Settings for StudyJMSModule page appears in the right panel.
3. In the Summary of Resources table, click **New**.
4. Under the Type column in the Summary of Resources table choose **Connection Factory** and click **Next**.

   Another panel of Create a New JMS System Module Resource appears.
5. In the Name field, type `StudyOutBoundSender`.
6. In the JNDI Name field, type `jms/StudyOutBoundSender`.
7. Select **XA Connection Factory Enabled** and click **Save**.
8. Click **Next**
9. In the Target field, retain the default server instance, which is exampleServer, and click **Finish**.

2.1.8.2.4 To Create JMS Topic

1. On the left panel, under Domain Structure, expand **Services**, click **Messaging**, and then choose **JMS Modules**.
2. In the right panel, choose the JMS Module you created (in the example, **StudyJMSModule**) from the table of JMS Modules.

   Settings for StudyJMSModule appear in the right panel with a Summary of Resources table.
3. In the Summary of Resources table, click **New**, select **Topic**, and then click **Next**.

   The Create a New JMS System Module Resource panel appears on the right side of the window. Use this panel to set the properties that identify the new topic.
4. In the Name field, under JMS Destination Properties, type `<name>Topic` (for example, `StudyTopic`).
5. Set **jms/StudyTopic** as the JNDI Name and click **Next**.

   The Create a New JMS System Module Resource page appears in the right panel. Use this page to set the properties that will be used to target your new JMS system module resource.
6. In the Subdeployments list, select **None** and click **Create a New Subdeployment**.
7. In the Subdeployment Name field, type `<name>Topic` (for example, `StudyTopic`), and click **OK**.
8. In the Targets table of JMS Servers, select **<name>JMSServe**r (for example, **StudyJMSServer**).
9. Click **Finish**.

2.1.8.3 Deploying and Running Applications on Oracle WebLogic Server

This procedure leads you through the steps to deploy and run an MPI Application on Oracle WebLogic Server.

2.1.8.3.1 To Deploy and Run Applications on an Oracle WebLogic Server

1. On the left panel of the WebLogic Server Administration Console, under Domain Structure, select **Environment** and then choose **Deployments**.

   The Summary of Deployments panel appears.

2. On the right side of the panel under Deployments, click **Install**.

   A Summary of Deployments panel with a Deployments table containing a list of EAR files appears.

3. Locate your application EAR and click **Next**.

   The Install Application Assistant page appears in the right panel.

4. Locate the deployment you want to install and prepare for deployment.

   Tip: Select the file path that represent the application root directory, archive file, exploded archive directory, or application module descriptor that you want to install. You can also enter the path of the application directory or file in the Path field.

   Note: Only valid file paths are displayed. If you cannot find your deployment files, upload your file(s) and/or confirm that your application contains the required deployment descriptors.

5. Click **Next**.

   Note: When deploying an MPI EAR file through the WebLogic Admin Console, under Security make sure that you choose **DD Only**. If you choose one of the other options, you will not be able to log into the MIDM.

6. Click **Finish**.
7. Launch **Master Index Data Manager** (MIDM).
8. From a web browser, enter the following:
   - For MPI Application: `https://localhost:7001/StudyMIDM`
9. Log in using your user name and password.

2.1.8.4 Setting Up the User

In this step you create the MasterIndex.Admin and Administrator groups, and then create a new user within the two groups.

1. On the left panel, under Domain Structure, expand **Services**, and then choose **Security Realms**.
2. In the table on the Summary of Security Realms panel, click **myrealm** that is the name of the realm.

   The Settings for myrealm panel appears.

3. Select the **Users and Groups** tab and then click **Groups**.
4. In the Groups table, click **New**.
5. In the Name field, type `MasterIndex.Admin` and click **OK**.

6. In the Groups table, click **New**.
7. In the Name field, type `Administrator` and click **OK**.
8. On the Settings for myrealm panel, select **Users and Groups** and then **Users**.
9. In the Users table, click **New**.
10. Type a name and a password for the new user you are creating and click **OK**.
11. Select **User Group**.
12. To add the two groups you created to the user you created, from the Available list, drag **MasterIndex.Admin** to the **Chosen** list, and then drag Administrator to the **Chosen** list.

Note: Repeat steps in Section 2.1.8.1, "Creating JDBC Data Resources for an MPI Application Project for Oracle", Section 2.1.8.2, "Creating JMS Resources for an MPI Application Project", and Section 2.1.8.3, "Deploying and Running Applications on Oracle WebLogic Server" for each of the 15 OHMPI projects.

2.1.9 Setting Up Informatica Server (Optional)

Follow the steps in this section only if you plan to implement deduplication. Perform the following steps at the Informatica server:

1. Set the OHMPI project related Jar files on Informatica Server:
    1. Navigate to $PMRootDir on Informatica server and create a folder OCDA_Javalib to store common Jar files. For example, /u01/oracle/Informatica/9.0.1/server/infa_shared/OCDA_Javalib
    2. Copy wlfullclient.jar file from <WebLogic home>/server/lib folder to folder created in the step 1.

       If wlfullclient.jar is not available, run the following command from <WebLogic home>/server/lib dir to generate wlfullclient.jar

       ```
       java -jar wljarbuilder.jar
       ```
2. Create a file ocda.properties file with the following settings to store connection information of Oracle WebLogic server and place it under OCDA_Javalib.

   INITIAL_CONTEXT_FACTORY=weblogic.jndi.WLInitialContextFactory

   PROVIDER_URL= <URL> of the Oracle WebLogic server

   SECURITY_PRINCIPAL=<username> same username as provided on WebLogic Details Screen during OHSCDA installation

   CDA_STORE_URL=/u01/oracle/Informatica/9.0.1/server/infa_shared/OCDA_Javalib/CDA_SEC_STORE
3. Navigate to $PMRootDir on Informatica server and create 15 OHMPI project specific folders. For example, /u01/oracle/Informatica/9.0.1/server/infa_shared/OCDA_Javalib/OCDA_Study.

   Following are the folder names:

   - OCDA_INVESTIGATOR
   - OCDA_SITE
   - OCDA_CRF_BOOK

- OCDA_USER
- OCDA_VALDTN
- OCDA_CRF
- OCDA_STUDY
- OCDA_PROGRAM
- OCDA_STUDY_REGION
- OCDA_APP_USER
- OCDA_GEOGRAPHY
- OCDA_LOV
- OCDA_STUDY_SITE
- OCDA_PRODUCT
- OCDA_STUDY_SUBJECT

Copy the following jar files from OHMPI Projects lib folder to the respective folders created in step 3.

mpi-client-ocda_study.jar (Project name will be the part of this Jar file)

index-core.jar

net.java.hulp.i18n.jar

4. Navigate to OCDA_HOME folder locate, copy and unzip CDA_SEC_STORE.zip to $PMRootDir/OCDA_Javalib on Informatica server.
5. Create Secret Store Wallet and User Management.

   OHSCDA needs to store the OHMPI username and password that is used to set the Context and call the OHMPI EJB during incremental dedup ETL execution. This user name and password is encrypted and stored in secret store wallet files. Following are the steps to store this information.

   1. Navigate to the **CDA_SEC_STORE** directory; execute **CDA_OHMPI_CREATE_SSTORE.sh**
   2. Enter the User ID and password that are used for the OHMPI MIDM login.

      Note: To change the password for an existing user entry in the wallet file, re-enter the same User ID with a new password. This updates the password in the wallet file.

   3. Provide read and execute privileges to Operating system user that starts Informatica server services.

2.2 Managing Source System Specific Requirements

2.2.1 Fine-tuning Oracle Clinical Settings

To optimize source system integration with OHSCDA, perform the following:

1. For OC 4.6, navigate to **Informatica Relational Connections** > **OC Connection Object** > **Attribute** in Informatica Workflow Manager.
2. Set **Connection Environment SQL** value as:
   - Oracle Database 11.2.0.2—alter session set optimizer_features_enable='11.2.0.2'
   - Oracle Database 11.2.0.3—alter session set optimizer_features_enable='11.2.0.3'
   - Oracle Database 11.1.0.7—alter session set optimizer_features_enable='11.1.0.7'
3. Create the following indexes:
   - Function based index on DISCREPANCY_ENTRIES - NVL ("MODIFICATION_TS", "CREATION_TS")
   - Function based index on DISCREPANCY_ENTRY_REVIEW_HIST - NVL ("NEXT_STATUS_TS", "CREATION_TS")
   - Function based index on RECEIVED_DCIS - NVL ("MODIFICATION_TS", "RECEIVED_DCI_ENTRY_TS")
   - Function based index on RECEIVED_DCMS - NVL ("MODIFICATION_TS", "RECEIVED_DCM_ENTRY_TS")

2.2.2 Handling Deletions in Siebel Clinical

OHSCDA provides an optional feature to manage hard deletion of records in Siebel Clinical. You create triggers in the source system to handle deletion of records. To do this:

1. Navigate to the temporary staging location where the OHSCDA installer copies the installation files.
2. Connect to the Siebel Clinical data source and run the OCDA_HOME/oracle.pharma.ocda.standard/Delete_Script/ocda_sc_del_triggers.sql script delivered with OHSCDA. This script creates the RXI_DELETE_LOG_S table and triggers on tables provided as input. The following are the tables in Siebel Clinical for which OHSCDA supports creating triggers:
   - S_CL_PTCL_LS
   - S_PROD_INT
   - S_CL_SUBJ_LS
   - S_CONTACT
   - S_CL_PGM_LS
   - S_PTCL_SITE_LS
   - S_EVT_ACT
   - S_ORG_EXT

   Provide a list of comma separated values of table names for which the triggers needs to be created as the script's input. For example, S_CL_PTCL_LS, S_PROD_INT, and S_CL_SUBJ_LS. The tables names that you provide can only be a subset of the tables listed above.

For information on how to handle deletion of records in Siebel Clinical, refer to *Oracle Clinical Development Analytics Administrator's Guide* (Chapter 2, Extract Transform Load Programs).

3

Upgrading Oracle Health Sciences Clinical Development Analytics

This chapter provides procedures that explain how to upgrade OHSCDA. It includes the following sections:

3.1 Migrating from OHSCDA 2.1 (Plus Configuration) to OHSCDA 2.2 (Standard Configuration)

If you are migrating from OCDA 2.1 (Plus Configuration) to OHSCDA 2.2 (Standard Configuration), perform the following steps:

1. Install OHSCDA 2.2 (Standard Configuration). Refer to Section 2.1.1, "Running the OHSCDA Installer," for more details.
2. If you made any modifications to database tables or ETL System Dependent Extract (SDE) or System Independent load (SIL) in your Plus Configuration, apply the same changes to their counterparts in the Standard Configuration (Informatica PowerCenter and DAC).
3. Perform an initial load of data from the transactional sources.
   a. Perform a full load of the warehouse using CDA- Warehouse Execution Plan.

3.2 Upgrading from OHSCDA 2.1 Standard to OHSCDA 2.2 Standard

The Installer automates the upgrade of the warehouse and the Informatica mappings. After running the Installer, carry out the remaining steps manually.

Note: OHASCDA 2.2 Standard is certified on Oracle Database 11.2.0.3. For detailed certification information, refer to Finding Certification Information.

3.2.1 Upgrading Warehouse Database Version and Reconfiguring OBIEE and DAC Client

1. Upgrade the warehouse database version from 11.2.0.2 to 11.2.0.3.

2. Ensure that your OBIEE version is 11.1.1.6.4.
3. Reconfigure OBIEE and DAC client, pointing to the new upgraded warehouse database version 11.2.0.3.

3.2.2 Running the Installer in Upgrade Mode

1. Run the OHSCDA Installer as described in the section Section 2.1.1, "Running the OHSCDA Installer."

   After the installation is completed, you can inspect the installation log at:

   <ocda_home>\install\ocda_install.log.

3.2.3 Next Steps

After running the installer, perform the following steps:

1. Perform the steps listed in the section Section 3.2.5, "Migrating Data from OHSCDA 2.1 to OHSCDA 2.2 (Standard Configuration)."
2. Perform the steps listed in the following sections:

   If you plan to use deduplication:

   - Install OHMPI, following the instructions in 1Section 1.6, "Installing the Prerequisite Software"
   - Add the OHMPI master index database as an Informatica source, following the instructions in section Section 2.1.2, "Setting Up Relational Connections in the Informatica Workflow for OHSCDA"
   - Add the OHMPI master index database as a DAC source, following the instructions in steps 7, 8, and 9 of Section Section 2.1.3, "Preparing a DAC Repository for OHSCDA"
   - Section 3.2.4, "Emplacing the OHSCDA Help and Image Files,"
   - Section 2.1.5, "Preparing the OBIEE Web Catalog and Repository for OHSCDA,"

     Note: If you are upgrading from OHSCDA 2.1 and have modified the OBIEE repository or Web Catalog, merge these objects. For more information, refer to *Oracle® Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* 11g Release 1.

   - Section 2.1.6, "Configuring Maps,"
   - Section 2.1.7, "Creating Security Groups and Application Roles for OHSCDA,"
   - Section 2.1.8, "Setting Up OHMPI Projects (Optional),"
   - Section 2.1.9, "Setting Up Informatica Server (Optional),"

   If you do not plan to use deduplication:

   - Section 2.1.4, "Emplacing the OHSCDA Help and Image Files,"
   - Section 2.1.5, "Preparing the OBIEE Web Catalog and Repository for OHSCDA,"

Note: If you are upgrading from OHSCDA 2.1 and have modified the OBIEE repository or Web Catalog, merge these objects. For more information, refer to *Oracle® Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* 11g Release 1.

- Section 2.1.6, "Configuring Maps,"
- Section 2.1.7, "Creating Security Groups and Application Roles for OHSCDA,"

3.2.4 Emplacing the OHSCDA Help and Image Files

You will be using help.zip and images.zip files in this section.

3.2.4.1 File Placement for Oracle WebLogic Managed Server

You should manually deploy OHSCDA's help and images files on Oracle WebLogic Managed Server. Perform the following steps to do so:

1. Navigate to <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\ in Oracle WebLogic Server.
2. If not already present, create the following folders at <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\
   - s_ocda
3. Unzip help.zip from OCDA_Home\oracle.pharma.ocda.standard\Reporting\Help to <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\s_ocda\.
4. Move customMessages and sk_ocda folders from <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\s_ocda\ to <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\.
5. If not already present, add the following tag in instanceconfig.xml, present in <MIDDLEWARE_HOME>\\instances\instance1\config\OracleBIPresentationServicesComponent\coreapplication_obips1.

   ```
   <UI><DefaultSkin>ocda</DefaultSkin></UI>
   ```

6. Unzip the Images.zip files from OCDA_Home\oracle.pharma.ocda.standard\Reporting\Images to <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\s_ocda.
7. Launch Oracle WebLogic Administration Server Console.

   Example: `https://hostname.domain:port/console`

   This opens the Oracle WebLogic Server Administration Console.
8. Log in to Oracle WebLogic Server Administration Console as an Administrator.
9. In the left pane of the Administration Console, select **Deployments**.

10. On the left pane, click **Lock & Edit**.
11. In the right pane, click **Update**.

    This opens the Install Application Assistant.
12. In the **Path** field browse to <MIDDLEWARE_HOME>\instances\<instancename>\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obips1\analyticsRes\.
13. Select **analyticsRes** and click **Next**.
14. Click **Finish**.
15. Click **Activate Changes**.
16. Select **analyticsRes** in Deployment section.
17. Click **Start** to view the list and select **Servicing all requests**. The Start Application Assistant page is displayed.
18. In the content pane of the new page, click **Yes** to start the selected deployment.

    State of analyticsRes should be Active after this deployment. You may confirm the same on Deployments page.
19. Log out from Oracle WebLogic Server Administration Console.
20. Log in to Oracle Enterprise Manager Fusion Middleware Control.
21. Restart the BI components.
22. Log in to OBIEE and verify the branding and help links on the dashboards.

See Also:

- *Oracle WebLogic Server Documentation Library*

3.2.5 Migrating Data from OHSCDA 2.1 to OHSCDA 2.2 (Standard Configuration)

Perform the following steps to migrate data from OCDA 2.1 to OHSCDA 2.2 (Standard Configuration):

> **Note:** Data migration scripts are available in OCDA_HOME\oracle.pharma.ocda.standard\DataModels\OCDA_2.1_to_2.2_Data_Migration_scripts.zip.

1. Log in to the OCDA Target database instance using system user.
2. Grant privileges to the following databases for creating the database link.

   For example:

   ```
   GRANT create database link TO <rxi_user>;
   GRANT create database link TO ohmpi_study_site;
   GRANT create database link TO ohmpi_study_region;
   ```
3. Log into your CDA data warehouse schema.
4. Create the following four database links:

   The dblink name should be oc_dblink for Oracle Clinical Source, sc_dblink for Siebel Clinical Source, ohmpi_study_site for OHMPI Study Site, and ohmpi_study_region for OHMPI Study_Region.

Example (OC):

```
create database link <oc_dblink>

connect to <oc_username> identified by <oc password>

using
'(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=<hostname>)(PORT=<portno>))(
CONNECT_DATA=(SID=<sidname>)))';
```

Example (SC):

```
create database link <sc_dblink>

connect to <sc_username> identified by <sc password>

using
'(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=<hostname>)(PORT=<portno>))(
CONNECT_DATA=(SID=<sidname>)))';
```

Example (OHMPI Study Site):

```
create database link < ohmpi_study_site>

connect to <ohmpi_study_site_username> identified by <ohmpi_study_site_
password>

using
'(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=<hostname>)(PORT=<portno>))(
CONNECT_DATA=(SID=<sidname>)))';
```

Example (OHMPI Study Region):

```
create database link < ohmpi_study_region>

connect to <ohmpi_study_region_username> identified by <ohmpi_ohmpi_
study_region_password>

using
'(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=<hostname>)(PORT=<portno>))(
CONNECT_DATA=(SID=<sidname>)))';
```

5. Execute Dimension Denormalization scripts:
   1. Execute update_dim_oc_denorm_id.sql.
   2. Execute update_dim_sc_denorm_id.sql.
6. If you had implemented MSI (Multi Source Integration) in CDA 2.1, perform step 7 through 14 else move to step 15 onwards.
7. Log in to OCDA OHMPI_STUDY_SITE schema.
8. Create the following two database links:

   The dblink name should be oc_dblink for Oracle Clinical Source and sc_dblink for Siebel Clinical Source.

   Example (OC):

```
create database link <oc_dblink>

connect to <oc_username> identified by <oc password>

using
'(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=<hostname>)(PORT=<portno>))(
CONNECT_DATA=(SID=<sidname>)))';
```

   Example (SC):

```
create database link <sc_dblink>

connect to <sc_username> identified by <sc password>

using
'(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=<hostname>)(PORT=<portno>))(
CONNECT_DATA=(SID=<sidname>)))';
```

9. Execute OHMPI Study Site scripts:
   a. Execute alter_ohmpi_study_site.sql.
   b. Execute update_ohmpi_study_site.sql.
10. Log in to OCDA OHMPI_STUDY schema.
11. Execute OHMPI Study scripts:
    1. Execute script alter_ohmpi_study.sql.
12. Log in to OCDA OHMPI_STUDY_REGION schema.
13. Create the following database link:

    The dblink name should be sc_dblink for Siebel Clinical Source.

    Example (SC):

```
create database link <sc_dblink>

connect to <sc_username> identified by <sc password>

using
'(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=<hostname>)(PORT=<portno>))(
CONNECT_DATA=(SID=<sidname>)))';
```

14. Execute OHMPI Study Region scripts:
    1. Execute alter_ohmpi_study_region.sql.
    2. Execute update_ohmpi_study_region.sql.
15. Log into your CDA warehouse schema.
16. Execute the following migration scripts:

    update_mdm_table.sql

    upd_win_data_into_ref_dim.sql

    load_region_dim.sql
17. Execute the commit statement.
18. Execute the migration script update_fact_wid.sql.
19. After data validation, delete the temporary table and db links by executing the following script:

    drop_tables_and_dblinks.sql

3.2.6 Setting Up the Informatica Server for Upgrade

If you plan to use Dedup, ensure the Informatica Server is setup as defined in following sections:

- Section 2.1.9, "Setting Up Informatica Server (Optional),"

3.2.7 Redeploy following OHMPI projects into Oracle WebLogic

Redeploy the following OHMPI projects into Oracle WebLogic server:

Table 3–1 List of Projects

Project Name
OCDA_Study_Site
OCDA_Study_Region
OCDA_Study

3.2.8 Upgrading the Existing DAC Environment

Perform the following steps to upgrade the existing DAC environment:

3.2.8.1 Back Up the Existing DAC Repository

Perform the following steps to back up the existing DAC repository:

1. Export the current DAC repository by connecting to DAC repository as an Administrator:
   a. Start the Data Warehouse Administration Console (DAC) client.
   b. From the **Tools** menu select **DAC Repository Management**, and then select **Export**.
   c. Click **Change import/export folder** to navigate to an appropriate location.
   d. Click **OK** to display the Export dialog box.
   e. Select the following categories of metadata you want to import: **Logical**, **Overwrite log file**, and **User Data**.
   f. Deselect the **System** check box.
   g. Select **CDA_Warehouse** application in the ApplicationList.
   h. Click **OK**.

> **Note:** Before upgrading or backing up, note down all parameter and connection values set in DAC containers to reverify these values after DAC upgradation.

3.2.8.2 Upgrade the Current DAC Repository

1. Connect to the existing DAC repository, as Administrator.
2. Unzip %ocda_home%\ oracle.pharma.ocda.standard\DAC_Code\CDA_ Warehouse.zip into a local folder.
3. Start the Data Warehouse Administration Console (DAC) client.
4. Log in to Data Warehouse Administration Console (DAC) client as an Administrator.
5. Make note of current logical names of the physical data sources. You will need them later during the upgrade.
6. Change logical names of the physical data sources to Oracle_Clinical, Siebel_ Clinical, and Datawarehouse in DAC (depending on the source system connections used during OCDA 2.1).

7. Navigate to **Tool**, then **DAC Repository Management,** and then **Upgrade/Merge Wizard**.
8. From the Start Process list, select **Replace Base** and then click **OK**.

   The Import Source System Container dialog box appears.
9. Click **Change import/export** folder to navigate to the directory where you unzipped CDA_Warehouse.zip in Step 1 of this sub section.
10. Select the container you want to upgrade. It should be same as the one available for you in the Source System Container list. For example, CDA_Warehouse) and click **OK**.
11. In the Importing Tables dialog box, re-type the text in the text box to confirm you want to proceed, and click **Yes**.

    When the import process is complete, the Importing Tables dialog box tells you how long the process took.
12. Click **OK**.

    The Create Difference Report dialog box appears.
13. Create the Difference Report to view the differences between the new and existing DAC repositories.
    a. Enter a name for the Difference Report, or leave the default name.
    b. Select the appropriate existing container.
    c. (Optional) Enter a description for the Difference Report.
    d. Click **OK**.

       When the Difference Report is complete, the Creating Difference Report dialog box tells you how long the process took.
    e. Click **OK**.

       The View Difference Report dialog box displays the differences between the new and existing DAC repositories.
    f. Click **Merge**.

       The Merge dialog box appears and lists the details of the merge.
    g. Click **Merge** to begin the merge process.
    h. Click **OK** in the Merging Repositories dialog box when the merge process is complete.
    i. Verify Physical Data Source connection for the source and target connections.

3.2.9 Importing the OHSCDA Warehouse Application Metadata into the DAC Repository

1. Start the Data Warehouse Administration Console (DAC) client.
2. From the **Tools** menu, select **DAC Repository Management**, and then select **Import**.
3. Click **Change import/export folder** to navigate to the folder where you unzipped CDA_Warehouse.zip.
4. Click **OK** to display the Import dialog box.
5. Select the following categories of metadata you want to import: **Logical**, **Overwrite log file**, and **User Data**.

6. Deselect the **System** check box.
7. If you plan to implement deduplication, select all the applications in the ApplicationList else select only **CDA_Warehouse** application in the ApplicationList.
8. Click **OK**.
9. Enter the verification code and **OK** in the secondary window that is displayed after the import.
10. You can inspect the import log in *${DAC_ INSTALL_DIR}*\log\import.log to verify if import is successful.

    You can ignore the following entry in the log:

    ```
    ORA-00001: unique constraint (<dac_schema>.W_ETL_<table_name>_U1)
    violated
    ```

11. Revert the logical names of the physical data sources to what you had noted in step 5 of Section 3.2.8.2, "Upgrade the Current DAC Repository,".

    Note: Ensure that the source and target connections names are same as the relational connection names you created in Informatica Workflow Manager.

12. Enable task level parameter in DAC.
    a. Select **CDA_Warehouse** application in the ApplicationList.
    b. Click **Tasks** tab in the top pane.
    c. Select a task.
    d. Click **Parameters** subtab in the bottom pane.
    e. Deselect **Inactive** for START_TS parameter.
    f. Click **Save**.
    g. Repeat steps 3, 4, and 5 for each of the following tasks:

Table 3–2 List of Tasks

Task Name
SDE_SC_Study_Team_Dim
SDE_SC_Study_Region_Team_Dhls

13. Add task level parameter in DAC.
    1. Select **CDA_Warehouse** application in the ApplicationList.
    2. Click **Tasks** tab in the top pane.
    3. Select a task.
    4. Click **Parameters** subtab in the bottom pane.
    5. Click **New**.
    6. Enter **Name** as START_TS, **Select Data Type** as TimeStamp, and **Select Load Type** as Incremental.
    7. Click the Value field icon to open a new window.

8. Select **Static**. In the date field enter Jan,1 1900 12:00:00AM.
9. In the Function drop-down list select **Custom Format** as Format type and enter MM/DD/YYYY HH24:MI:SS.
10. Click **OK** and deselect Inactive. Click **Save** in the bottom half of the screen to save the parameter and then **Save** in the top half of the screen to save the task.
11. Repeat steps 3 to 10 for following tasks:

Table 3–3 List of Tasks

Task Name
SDE_SC_Study_Site_Fact
SDE_OC_Study_Site_Fact
SDE_SC_Subject_Visit_Fact

14. Execute one of the following execution plans. It must be same as you have executed in OCDA 2.1.
    - CDA - Complete Warehouse
    - CDA - Siebel Clinical Warehouse
    - CDA - Oracle Clinical Warehouse
15. Disable START_TS for each task:
    a. Select **CDA_Warehouse** application in the ApplicationList.
    b. Click **Tasks** tab in the top pane.
    c. For each task in Table 3-1:

- Select the task.
- Click **Parameters** subtab in the bottom pane.
- Select Inactive for the START_TS parameter.

Table 3–4 List of Tasks

Task Name
SDE_SC_Study_Site_Fact
SDE_OC_Study_Site_Fact
SDE_SC_Subject_Visit_Fact
SDE_SC_Study_Team_Dim
SDE_SC_Study_Region_Team_Dhls

3.2.10 Merging Changes into a New Oracle-supplied Repository

Each OHSCDA release, and some patches, includes a copy of the OHSCDA Repository. If you do modify your copy of the OHSCDA Repository, you must merge your changes into the Oracle-supplied Repository each time you receive a release or patch of OHSCDA that includes a repository. At upgrade time, use the OBIEE Merge Repository Wizard (accessed through File > Merge) in the Repository Administration Tool to merge your modified RPD with the Oracle-supplied RPD.

For information on comparing and merging Repositories, refer to *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition 11g Release 1*.