Oracle® Health Sciences Clinical Development Analytics

Installation and Configuration Guide for Informatica

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Oracle Health Sciences Clinical Development Analytics Installation and Configuration Guide for Informatica, Release 4.0

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Contents

Preface

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

This preface contains the following topics:

- Audience on page v
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Audience

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

- Oracle Database
- Oracle Analytics Server (OAS)
- Oracle Business Intelligence Data Warehouse Administration Console (DAC) application
- Informatica PowerCenter application

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 that have purchased support 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 certification information, see *Oracle Health Sciences Applications Supported Technology Stack* (Doc ID 180430.1) on My Oracle Support (https://support.oracle.com).

Change Record

July 2019: First version of the guide.

March 2020: Second version of the guide. In this version:

- Oracle Database version 19c (19.3.0.0.0) has been certified.

- Oracle Business Intelligence Data Warehouse Administration Console version has been upgraded from 11.1.1.6.4 to 11.1.1.7.0.

- Informatica PowerCenter version has been upgraded from 10.2.0 to 10.4.0.

- Added instructions to grant "CREATE JOB" to "dest_schema_owner" has been added in Section 2.1.4.2, "Destination Consolidation Database Configuration".

- Removed information on applying OBIEE patches 26725930 and 27311972

October 2022: Third version of the guide. In this version:

- Oracle Database version 19c (19.15.0.0.0) has been certified.

- Oracle Analytics Server version 5.9 has been certified.

October 2023: Fourth version of the guide. In this version:

- Oracle Database version 19c (19.20.0.0.0) has been certified.

- Oracle Analytics Server version 7.0 has been certified.

January 2024: Fifth version of the guide. In this version:

- Oracle Database version 19c (19.21.0.0.0) has been certified.

- Informatica PowerCenter version 10.5.4 has been certified.

Related Documents

For more information, see the following documents in the Oracle Business Intelligence Data Warehouse Administration Console, Oracle Analytics Server, Oracle Clinical, Siebel Clinical, and Oracle Health Sciences InForm documentation sets.

Oracle Business Intelligence Data Warehouse Administration Console (DAC) Documentation

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

- *Oracle® Fusion Middleware User's Guide for Oracle Business Intelligence Data Warehouse Administration Console*

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

Oracle Analytics Server (OAS) Documentation

The *Oracle Analytics Server Online Documentation Library* documentation set includes:

- *Oracle Analytics Designing and Publishing Pixel-Perfect Reports in Oracle Analytics Server*

- *Oracle Analytics Using Oracle Analytics Publisher in Oracle Analytics Server*

- *Oracle Analytics Visualizing Data in Oracle Analytics Server*

- *Oracle Analytics Installing and Configuring Oracle Analytics*

- *Oracle Analytics Migrating and Upgrading to Oracle Analytics Server*

- *Oracle Analytics Administering Oracle Analytics Server*

- *Oracle Analytics Managing Metadata Repositories for Oracle Analytics Server*

- *Oracle Analytics Managing Security for Oracle Analytics Server*

Oracle Clinical Documentation

The Oracle Clinical documentation set includes:

- *Oracle Clinical Administrator's Guide*

- *Oracle Clinical Getting Started*

- *Interfacing from Oracle Clinical*

- *Oracle Clinical Conducting a Study*

- *Oracle Clinical Creating a Study*

- *Oracle Clinical Installation Guide*

Siebel Clinical Documentation

The Siebel Clinical documentation set includes:

- *Siebel Data Model Reference for Industry Applications*

- *Siebel Life Sciences Guide*

Oracle Health Sciences InForm Documentation

The Oracle Health Sciences InForm documentation set includes:

- *Oracle Health Sciences InForm Upgrade and Migration Guide*

- *Oracle Health Sciences InForm Installation Guide*

- *Oracle Health Sciences InForm Study and Reporting Setup Guide*

- *Oracle Health Sciences InForm User Guide*

- *Oracle Health Sciences InForm Reporting and Analysis*

- *Oracle Health Sciences InForm Utilities Guide*

- *Oracle Health Sciences InForm Clinical Data API Guide*

- *Oracle Health Sciences InForm Reporting Database Schema*

- *Oracle Health Sciences InForm Secure Configuration Guide*

- *Oracle Health Sciences InForm Third Party Licenses and Notices*

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 sections:

- Section 1.1, "Checking for the Most Recent Information"
- Section 1.2, "Technology Stack and System Requirements"
- Section 1.3, "Installing the Prerequisite Software"

1.1 Checking for the Most Recent Information

OHSCDA documentation is updated periodically. Therefore, it is critical that you check that you have the most current information before you begin the installation process.

To ensure that you have the most recent version of this Installation and Configuration Guide, and all other OHSCDA user documentation, see https://docs.oracle.com/cd/F19319_01/index.htm.

1.2 Technology Stack and System Requirements

The requisite technology stack for OHSCDA configuration consists of the following products:

- Oracle Database 19.21.0.0.0
- Oracle Fusion Middleware 12c (12.2.1.4.0) Infrastructure
- Oracle Analytics Server (OAS) 7.0
- Oracle Business Intelligence Data Warehouse Administration Console 11.1.1.7.0
- Informatica PowerCenter 10.5.4

> **Note:** Technology stack components are not part of the media pack. You must acquire their license separately.
>
> All references to *media pack server* in this document refer to the system onto which you download the media pack for Oracle Health Sciences Clinical Development Analytics.
>
> 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.

Table 1–1   System Requirements References

Product	Reference
Oracle Database 19.21.0.0.0	*Database Installation Guide for <platform>*
Oracle Fusion Middleware 12c (12.2.1.4.0) Infrastructure	*Oracle Fusion Middleware Documentation Library*
Oracle Analytics Server (OAS) 7.0	*System Requirements and Supported Platforms for Oracle Analytics Server* *Oracle Analytics Installing and Configuring Oracle Analytics*
Oracle Business Intelligence Data Warehouse Administration Console 11.1.1.7.0	*Oracle Business Intelligence Data Warehouse Administration Console Installation, Configuration, and Upgrade Guide* *Data Warehouse Administration Console User's Guide*
Informatica PowerCenter 10.5.4	*Informatica PowerCenter Installation Guide*

> **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.

- You may select to install each product on a different server, if required. The OHSCDA 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.

- It is a good practice to create the schema for the OHSCDA 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.

Figure 1–1   Oracle Health Sciences Clinical Development Analytics Technology
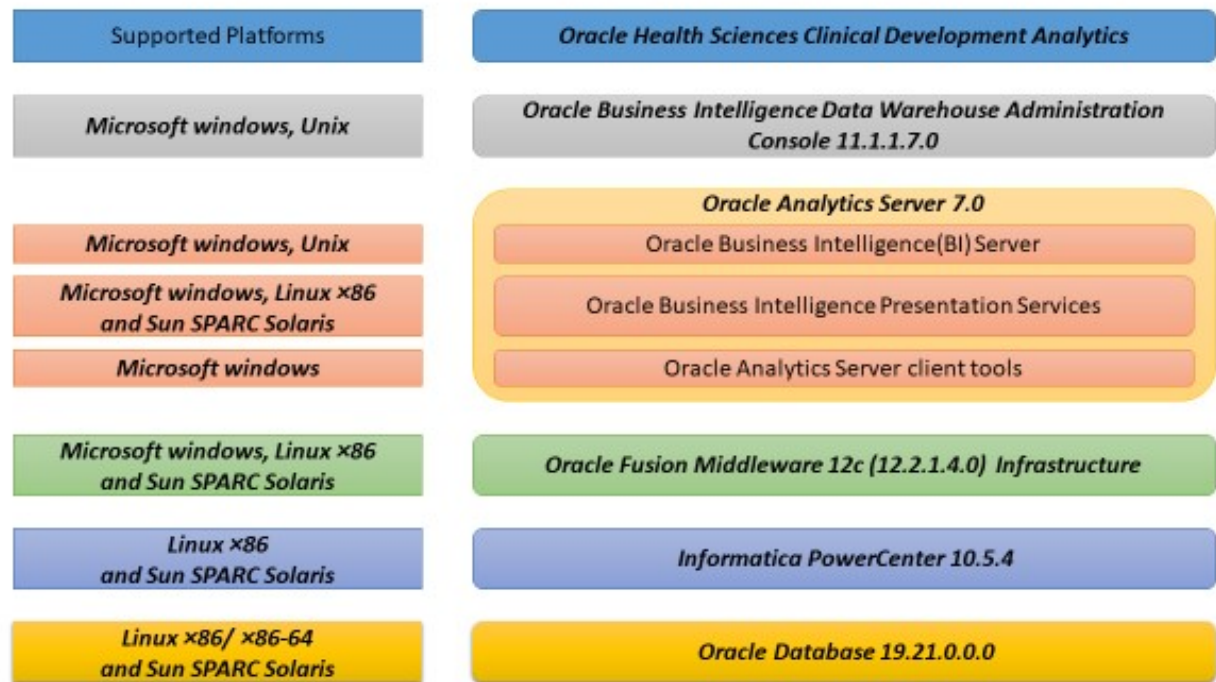
1.2.1 Supported Web Browsers

OHSCDA supports web browsers that are supported by OAS. For the list of the browsers supported by OAS, refer to *Administering Oracle Analytics Server for Oracle Analytics Server Edition* 7.0.

> **Note:**   For information on Oracle Software Web Browser Support Policy, see Doc ID 2092205.1 on My Oracle Support (https://support.oracle.com).

1.2.2 Source Systems

OHSCDA is designed to extract data from the following three systems:

- Oracle Clinical (OC) 5.2 and 5.4

- Siebel Clinical Trial Management System (SC) 8.1.1.17, 8.1.1.18, 22.4, and 23.11

- Oracle Health Sciences InForm 4.6, 5.5, 6.0, 6.1.0, 6.1.1, 6.2.0, 6.3.0, 6.3.1, 6.3.1.1, and 7.0

1.3 Installing the Prerequisite Software

Figure 1–2 displays a sample topology of the technology components for OHSCDA.

Figure 1–2 Sample Topology
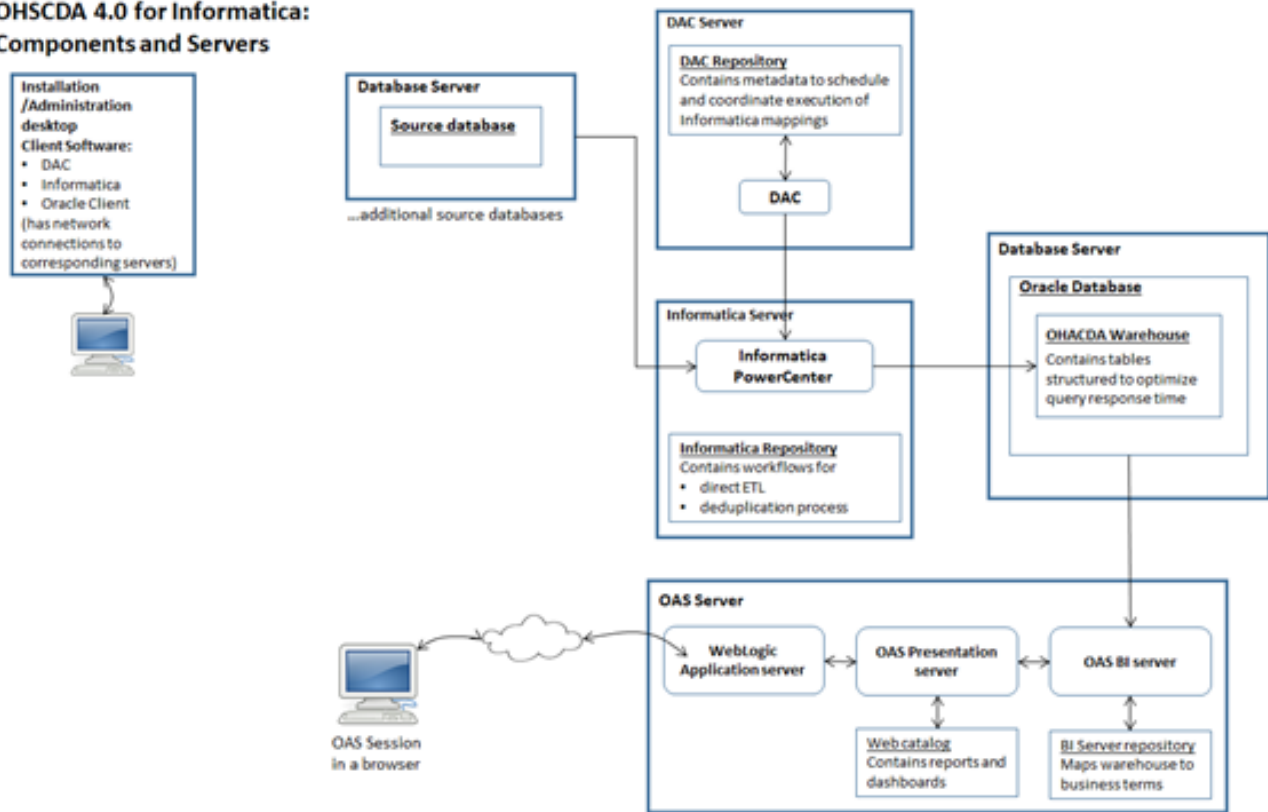
Before you can install the OHSCDA application, you must complete the following pre-installation tasks:

■   Install Oracle Database 19.21.0.0.0.

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

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

Also, install Oracle Database Client for *19.21.0.0.0* on the system where you are running the OHSCDA installer. Follow the instructions in *Oracle Database Client Installation Guide for <platform>*.

■   Install Oracle Analytics Server 7.0 with the following components:

–   Oracle Fusion Middleware 12c (12.2.1.4.0) Infrastructure (Supported on Windows and Unix)

–   Oracle Analytics Server 7.0 (Supported on Windows and Unix)

–   Oracle Analytics Client Tools (Supported only on Windows)

Follow the instructions in *Oracle Analytics Installing and Configuring Oracle Analytics Server*.

■   Install Oracle Business Intelligence Data Warehouse Administration Console (DAC) 11.1.1.7.0

Follow the instructions in *Oracle Business Intelligence Data Warehouse Administration Console Installation, Configuration, and Upgrade Guide*.

■ Install Informatica PowerCenter 10.5.4

Oracle recommends that you create Informatica repository for OHSCDA with the following settings:

Table 1–2   Informatica Repository Settings

Settings	Value
Character Set	UTF8
Versioning	True
Global Repository	False
Security Audit Trail	No
Operating Mode	Normal

You must add the *AggSupprtWithNoPartLic* property in Informatica PowerCenter Administration Console, to use the sorted Aggregator transformation set in Informatica PowerCenter.

Perform the following steps to add the *AggSupprtWithNoPartLic* property:

1. Log on to Informatica PowerCenter Administration Console.

2. Select the PowerCenter Integration Service.

3. In Custom Properties, click **Edit**.

4. Click **Add**.

5. Enter `AggSupprtWithNoPartLic` in the **Name** field.

6. Enter `Yes` in the **Value** field.

7. Click **OK** to add the property.

For more information, see *Informatica PowerCenter Installation Guide*.

■ If you implement multi-byte character support for OHSCDA, set the following:

  – **Operating System Level**: Ensure that the system that hosts Informatica and Database have the following parameters set:

    * NLS_LANG=AMERICAN_AMERICA.AL32UTF8

    * LANG=en_US.UTF-8

  – **Database Level**: Ensure that the following parameters are set while creating database:

    * NLS_CHARACTERSET =AL32UTF8

    * NLS_NCHAR_CHARACTER= AL16UTF16

  – **Informatica Level**: Oracle recommends that you create Informatica integration service for OHSCDA with the following settings:

Table 1–3   Informatica Integration Service

Settings	Value
Character Set	UTF8
Versioning	True
Global Repository	False

Table 1–3 (Cont.) Informatica Integration Service

Settings	Value
Security Audit Trail	No
Operating Mode	Normal
DataMovementMode	Unicode
Code Page	UTF8

- **Informatica Workflow Relational Connection**: For all relational connection in Informatica (Datawarehouse, Inform_Source, Oracle_Clinical, and Siebel_Clinical), set:

    - Connection Environment SQL to `"alter session set NLS_LENGTH_SEMANTICS = 'CHAR';`

    - Code Page to `UTF-8 encoding of Unicode`

2

Installing Oracle Health Sciences Clinical Development Analytics

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

OHSCDA application installation consists of the following components:

- Adding InForm Studies to the OHSCDA Warehouse
- Set Up Siebel Clinical Replication Schema
- Running the OHSCDA Installer
- Source-specific Procedures
- Setting Up Relational Connections in the Informatica Workflow for OHSCDA
- Preparing a DAC Repository for OHSCDA
- Emplacing the OHSCDA Help Files
- Preparing the OAS Web Catalog and Repository for OHSCDA
- OAS Post-deployment Configuration
- Configuring Maps
- Creating Security Groups for OHSCDA

2.1 Adding InForm Studies to the OHSCDA Warehouse

> **Note:** You must perform the tasks in this section only if:
>
> - You have InForm as a source
> - It is a fresh installation of OHSCDA
> - Inform_Consolidate.zip and Inform_Consolidate_on_prem.zip files are part of the OHSCDA installer. Run installer for target data warehouse to get access to the files from installer home.

Figure 2–1 displays the OHSCDA InForm consolidation installation scenarios.

Figure 2–1 OHSCDA InForm Consolidation Installation Scenarios
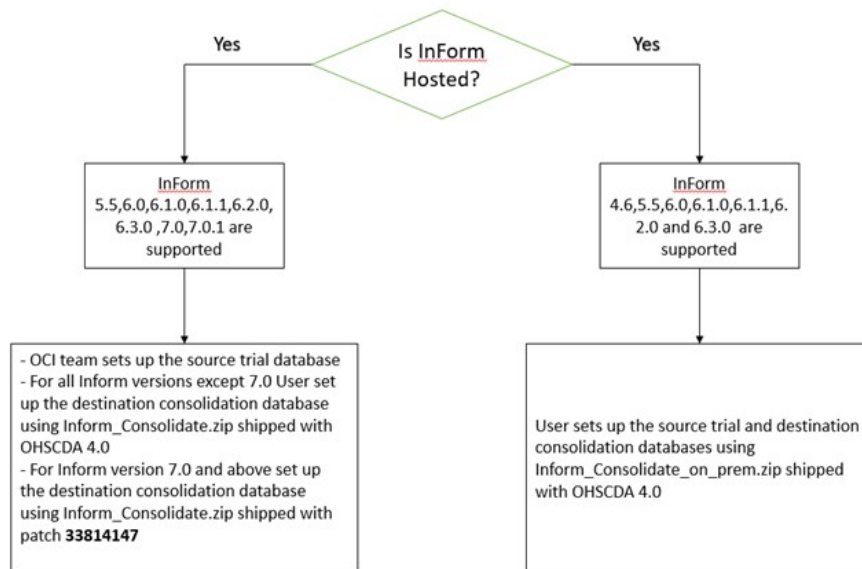
> **Note:**   You can download the OHSCDA patch from My Oracle
> Support (https://support.oracle.com).

2.1.1 OHSCDA InForm Consolidation Schema

This section describes how OHSCDA extracts InForm's operational data and loads it
into the OHSCDA warehouse. All of the data for each InForm study is maintained in a
transactional database (actually a database schema). InForm maintains one or more
InForm databases per Oracle database instance. Each study also has a Reporting and
Analysis database (again, a set of objects in a schema, not necessarily an exclusive
database instance) which contains data in views designed for query, as opposed to
transactional activity.

Inform maintains the Reporting and Analysis database for each study in a
study-specific schema. For efficiency and maintainability, OHSCDA has created a
program that extracts data from a number of InForm Reporting and Analysis
databases and places that data into a single consolidated database. Then, OHSCDA's
source-dependent extract code reads from the consolidated database, and writes to the
OHSCDA warehouse.

For the remainder of this section, refer to any given InForm Reporting and Analysis
database as a source schema and the schema in which OHSCDA consolidates InForm
data as the consolidation schema.

OHSCDA consolidates data from selected InForm source schema views, the selected
ones being the ones that have data corresponding to columns in the OHSCDA data
model. The following are the InForm source views that are consolidated for OHSCDA:

- IRV_AF_SUBJECT_FORMS
- IRV_CUR_QUERY
- IRV_CUR_RULE
- IRV_CUR_SITE

- IRV_CUR_SPONSOR

- IRV_CUR_SUBJECT

- IRV_CUR_USER

- IRV_FORM_REVS

- IRV_ITEMSET_REVS

- IRV_ITEM_REVS

- IRV_QUERY_STATE_CHANGES

- IRV_SECTION_REVS

- IRV_STUDYVERSIONS

- IRV_STUDYVERSION_FORMS

- IRV_STUDYVERSION_VISITS

- IRV_SUBJECT_STATE_CHANGES

- IRV_SV_SUBJECTVISITS

- IRV_USERS_SITES

For each of these source views, the consolidation schema contains a consolidation table. Each consolidation table has the same columns as its source view, except that the consolidation table has three additional columns:

- STUDYGUID

- CONSOLIDATION_DATETIME

- MODIFIEDDATETIME

STUDYGUID is needed to retain the association of each record with its InForm study. CONSOLIDATION_DATETIME and MODIFIEDDATETIME allows OHSCDA ETL to detect which consolidated records have been added or updated since the prior ETL execution.

The names of tables in the consolidation schema match the names of their source views, with the following change:

- *IRV* in the source view name is replaced with *RXI* in the consolidation table name.

Consolidation is the process of getting new or modified records from a source schema and updating the consolidation schema with those records. Consolidation is carried out by periodic execution of a scheduled job in each InForm schema that contributes to the consolidation schema. Execution is done through the DBMS_JOB facility. Each source schema is consolidated on its own schedule.

There is no master job that oversees or coordinates the consolidation of all the source InForm schemas. You can choose to consolidate different InForm schemas at different times, and with different intervals between consolidations. However, the more spread out consolidations are, the wider the time period represented by the records in the consolidation schema. So it is recommended that you schedule consolidation jobs to fall within a small time window. For details on scheduling, see Section 2.1.6, "Adjusting Scheduling of Consolidation Jobs".

When the Consolidation job executes for a particular source schema, it does the following:

For each source table from which OHSCDA extracts data,

- Identify what records have been created or modified in this table since the previous consolidation

- For each modified source record, drop the corresponding record in the consolidation table

- Insert all new and modified records in the Consolidation schema table, setting their StudyGUID, and modification timestamps

The procedures that does this work reside in each InForm Reporting and Analysis Schema, they are placed there as part of the process of preparing that schema for consolidation.

Preparation for consolidation also creates an access account in the database holding the source schema. This account is the one that reads the Reporting views, and writes to the consolidation tables. This access account is named CDAxxx, where xxx is the Study name.

All movement of data is done by a pull from the Reporting and Analysis Database to the Consolidation database. This ensures that there is no path by which someone who can connect to the consolidation schema is able to modify the InForm database.

The instructions that follow tell how to do the initial setup of the consolidation schema (this also enrolls the first Study to be consolidated as part of the process) and then how to set up each additional InForm study so that it becomes a contributor to the Consolidation schema.

2.1.2 Prerequisites

1. Copy Inform_Consolidate.zip for InForm cloud or Inform_Consolidate_on_prem.zip for InForm on premise from <OCDA_HOME>\OCDA_ODI\Database\DWH_Scripts\OCDA_Common_Scripts directory.

2. Copy and unzip the Inform_Consolidate.zip file to a server from which it is possible to access all InForm source database that contain studies that are to be consolidated and also to access the database in which the consolidation schema is located.

2.1.3 Setting up Consolidation Schema

This section describes the steps to create the Consolidation Schema. As part of the process, it enrolls an initial InForm study as a source to be consolidated.

2.1.3.1 Preparing TNSNAMES Files on Source Trial and Destination Consolidation Database Servers

If one does not already exist, create a TNSNAMES.ORA entry for the Consolidation database instance on each InForm database server that contains a study that is to be consolidated.

> **Note:** This is not essential. If you prefer not to create the TNSNAMES entries, you can provide the complete connection string instead of the TNS name when specifying remote databases below.

- On the consolidation schema database server, add a TNSNAMES.ORA entry for each source schema database.

2.1.3.2 Creating a Consolidation Management Root Directory

- On consolidation schema database server, create a root directory for managing the files needed to configure and log consolidation of the source schemas.

We will refer to this directory as <$ConsolidationMgmtRoot>.

If source trial and destination consolidation databases are in the same network, then a single <$ConsolidationMgmtRoot> is sufficient. Else, replicate the directory in both the servers.

During the setup of the source trial database, use TrialCDA and logs folders. And, during the setup of the destination consolidation database, use DestCDA and logs folder.

2.1.4 Initiating Consolidation of InForm Studies

This section describes the steps you must follow to prepare a source schema for consolidation and perform the initial execution of consolidation of that schema. Subsequent consolidations occurs automatically at an interval you define as part of the preparation described here.

The setup and configuration is performed in the following two phases for each study trial:

- Section 2.1.4.1, "Source Trial Database Configuration"

- Section 2.1.4.2, "Destination Consolidation Database Configuration"

2.1.4.1 Source Trial Database Configuration

Follow the instructions in this section for each InForm study that is to be consolidated for consumption by OHSCDA.

1. On either source trial or destination consolidation schema database server, based on the network architecture as described in Section 2.1.3.2, "Creating a Consolidation Management Root Directory", create the <Study-name> folder within <$ConsolidationMgmtRoot>/ to hold the files for consolidation of this study.

2. Copy the following folders from Inform_Consolidate.zip into <$ConsolidationMgmtRoot>/<Study-name>/:

   - TrialCDA

   - Logs

3. Set your current directory to the <$ConsolidationMgmtRoot>/<Study-name>/TrialCDA/ directory.

4. Edit CONFIGTRIALCDA.sql to set specific values of configuration parameters for this study. Make the following changes:

Table 2–1   Source Trial Configuration Parameters

Parameter	Set value to
Slash	Use \ for Windows or / for Linux
trial_name	The name of the study.
inform_release	For InForm release 4.6, enter R46.
	For InForm releases 5.5 to 6.2.x, enter R55.
	For InForm release 6.3 onward, enter R63.

Table 2–1   (Cont.) Source Trial Configuration Parameters

Parameter	Set value to
trial_tnsname	Name in the local TNSNAMES file of the source database for the study. Can also supply entire TNS entry for the source database as a string.
trial_schema_user	Username of the InForm source schema.
trial_schema_password	Password of the InForm source schema.
trial_ro_user	This is OHSCDA reporting object schema user name and is defaulted to trail_name prefixed with 'cda'.
trial_ro_password	This is OHSCDA reporting object schema password and is defaulted to trail_name prefixed with 'cda'. You can change this password.
DDS_SCHEMA_OWNER	This is OHSCDA reporting object schema user name. This value must be same as the value you have entered for trial_ro_user.
trial_dba_user	Database username who has the dba privileges.
trial_dba_password	Password for database username.
trial_ts	Name of a tablespace in the source schema database to which the access account for this study will be given access.
trial_ts_temp	Name of a temporary tablespace in the source schema database to which the access account for this study will be given access.

5. Save the file.

6. From the SQLPlus prompt, execute the following:

   ```
   @Setup_Trial_CDA.sql
   ```

7. Navigate to the <$ConsolidationMgmtRoot>/<Study-name>/Logs directory to review the log.

   If any errors are found, make necessary corrections and re-execute Setup_Trial_CDA.sql.

2.1.4.2 Destination Consolidation Database Configuration

Follow the instructions in this section for each InForm study that is to be consolidated for consumption by OHSCDA.

1. On the consolidation schema database server, based on the network architecture as described in Section 2.1.3.2, "Creating a Consolidation Management Root Directory", create the <Study-name> folder within <$ConsolidationMgmtRoot>/ if the destination consolidation database is not in the same network as the source trial database.

   The <Study-name> folder holds the files for consolidation of this study.

2. Copy the following folders from Inform_Consolidate.zip into <$ConsolidationMgmtRoot>/<Study-name>/:

   > **Note:**   Do not copy the Logs folder if the destination consolidation database is in the same network as the source trial database.

- ◾ DestCDA

- ◾ Logs

3. Set your current directory to the <$ConsolidationMgmtRoot>/<Study-name>/DestCDA directory.

4. If you use Oracle Database 19c as the destination consolidation database, provide additional grant "CREATE JOB" to "dest_schema_owner":

    a. Open the Setup_Dest_CDA.sql file.

    b. Navigate to the section "Prompt Creating the trial schema user account in the Destination database.."

    c. Replace `execute immediate ' grant CREATE VIEW, CREATE TABLE ,ALTER SESSION ,CREATE SESSION '`

    with

    `execute immediate ' grant CREATE JOB,CREATE VIEW, CREATE TABLE ,ALTER SESSION ,CREATE SESSION '`

    d. Save the file.

5. Edit CONFIGDESTCDA.sql to set specific values of configuration parameters for this study. Make the following changes:

    > **Note:** If you prefer not to create the TNSNAMES entries, you can provide the complete connection string instead of the TNS name when specifying the remote databases below.

    The trial parameters mentioned in Table 2–2 must match with the ones defined in Table 2–1.

Table 2–2   Destination Configuration Parameters

Parameter	Set value to
Slash	Use \ for Windows or / for Linux
Parameters for configuring the source schema and database	
trial_name	The name of the study.
inform_release	For InForm release 4.6, enter R46.
	For InForm releases 5.5 to 6.2.x, enter R55.
	For InForm release 6.3 onward, enter R63.
trial_tnsname	Name in the local TNSNAMES file of the source database for the study. Can also supply entire TNS entry for the source database as a string.
trial_schema_user	Username of the InForm source schema.
trial_global_name	Global name of the source schema database. You can get this by connecting to the source schema and running the following query:
	`SELECT * FROM GLOBAL_NAME`
trial_ro_user	This is OHSCDA reporting object schema user name and is defaulted to trail_name prefixed with 'cda'.

Table 2–2   (Cont.) Destination Configuration Parameters

Parameter	Set value to
trial_ro_password	This is OHSCDA reporting object schema password and is defaulted to trail_name prefixed with 'cda'. You can change this password.

Parameters for configuring the target schema and database

Parameter	Set value to
dest_tnsname	Name of the target database in the TNSNAMES file on the source database server for the study. Can also supply entire TNS entry for the target database as a string.
dest_schema_owner	This defaults to and is same as trial_ro_user parameter.
dest_schema_password	This defaults to and is same trial_ro_password parameter.
dest_consolidated_user	This is the consolidation schema username. Default is RXI_INFORM.
dest_consolidated_password	This is the consolidation schema password. Defaults is RXI_INFORM. You can change this password.
dest_dba_user	Database username who has dba privileges on the consolidation database.
dest_dba_password	Password for the database username on the consolidation database.
dest_ts	Name of a tablespace in the target schema database to which the consolidation and access account will be given access.
dest_ts_temp	Name of a temporary tablespace in the target schema database to which the consolidation and access account will be given access.
consolidate_job_interval	The interval between executions of the program to consolidate new and modified data from this study. A value of 1 results in an interval of one day. A value of 1/24 results in an interval of one hour.

6. Save the file.

7. From the SQLPlus prompt, execute the following:

   ```
   @Setup_Dest_CDA.sql
   ```

8. Navigate to the <$ConsolidationMgmtRoot>/<Study-name>/Logs directory to review the log.

   If any errors are found, make necessary corrections and re-execute Setup_Dest_CDA.sql.

2.1.5 Creating InForm Auto Merge Tables

If InForm is one of the source systems, connect to the InForm Consolidation database and execute the cda_cdb_automerge_ddl.sql script located in the <OCDA_HOME>/oracle.pharma.ocda.standard/OCDA_Common_Scripts/DataModels directory.

2.1.6 Adjusting Scheduling of Consolidation Jobs

As mentioned earlier, initial consolidations, especially of large source schemas, should be done in isolation to avoid contention for resources. But once the initial consolidation of a schema is done, subsequent consolidations of that schema are incremental and involve smaller numbers of records (incremental consolidations are limited to new or modified Subjects, CRFs, and Queries accumulated since the previous consolidation).

Once initial consolidation of an InForm trial source schema is complete, it is useful to adjust the scheduling of its incremental consolidations so that they start near to the time of other incremental consolidation of other source schemas. The closer in time consolidations start across studies, the smaller the time period represented in the consolidation schema.

To adjust the time when a study's consolidation job executes, perform the following steps:

1. Connect as the InForm trial source schema owner.

2. Determine the consolidation job ID using the following query for InForm 4.6:

        select job
        from user_jobs
        where what like 'REFRESH_PROCS.REFRESH_WITH_STREAMS_DELAY%';

    or the following query for InForm release 5.5 and later:

    ```
    select job
    from user_jobs
    where what = 'CDA_PROCS.CONSOLIDATE';
    ```

3. Change the time for the next execution of the job by using the dbms_job.next_date procedure.

    > **Note:** The next_date parameter is an Oracle date-time in which you can specify both the date and time for the next execution.

    Remember to follow the call with a commit. For example,

    ```
    begin
    dbms_job.next_date (
      job => 12345,
      next_date => to_date('21-AUG-2013@01:01:00','DD-MON-YYYY@HH24:MI:SS')
    );
    end;
    commit;
    /
    ```

    This causes job 12345 to next be executed at 1:01 AM on 21-AUG-2013.

You can also change the interval between subsequent executions of the job using the dbms_job.interval procedure. Set the interval parameter to the string 'SYSDATE + <desired-interval>', replacing <desired-interval> with the number of days, or the fraction of a day to elapse before the next execution.

```
begin
dbms_job.interval(
  job => 12345,
  interval => 'SYSDATE + 1/2'
);
```

```
end;
commit;
/
```
This sets the interval between executions of job 12345 to half a day or every 12 hours.

2.2 Set Up Siebel Clinical Replication Schema

If you have Siebel Clinical on cloud and OHSCDA on premise, replicate the Siebel Clinical tables on premise. To do so, replicate the OHSCDA Siebel Clinical source by performing the following steps:

1. Copy the CDA_Source_Replication.zip from <OCDA_HOME>\OCDA_Common_ Scripts directory to your folder.

2. Unzip CDA_Source_Replication.zip.

3. Navigate to DestCDA folder.

4. Open CONFIGDESTCDA.sql, and set value for parameters mentioned in Table 2–3.

Table 2–3   Parameters in CONFIGDESTCDA.sql

Parameter	Set value to...
Slash	Use \ for Windows or / for Linux.
Parameters related to source schema and database	
trial_name	Name of the study or source type. For example, SIEBEL.
application_release	The source application release version.
instance_guid	Numeric unique ID for the source instance that will be replicated.
	This is added as a record qualifier for each record that is replicated in the target schema.
incr_date_col	The date column on source tables that are used to identify incremental data load.
	For example:
	For Siebel Clinical, the date column is "DB_LAST_UPD".
trial_tnsname	Name in the local TNSNAMES file of the source database for the study/source. You can also provide the entire TNS entry for the source database as a string.
trial_global_name	The global name of the source schema database. You can get this name by connecting to the source schema and running the following query:
	SELECT * FROM GLOBAL_NAME
trial_schema_user	Username of the source schema that holds the actual transactional tables.
trial_ro_user	The source read only user name that is created on the trial schema user to provide read only access.
	If your source is not protected by Read Only user, provide the actual source schema name (trial_schema_user) and its password.
Parameters for configuring the target schema and database	
dest_tnsname	Name of the target database for the study in the TNSNAMES file located on the source database server. You can also provide the entire TNS entry for the target database as a string.
dest_schema_owner	The stage user where the data is processed.
dest_consolidated_user	The consolidation schema username. For example, RXI_SC.
dest_dba_user	The database username who has database administrator privileges on the consolidation database.

Table 2–3 (Cont.) Parameters in CONFIGDESTCDA.sql

Parameter	Set value to...
dest_ts	Name of a tablespace in the target schema database to which the consolidation and access account will be given access.
dest_ts_temp	Name of a temporary tablespace in the target schema database to which the consolidation and access account will be given access.
consolidate_job_interval	The interval between executions of the program to consolidate new and modified data from the source system. A value of 'freq=hourly; INTERVAL=1' results in an interval of one hour.
	This parameter is similar to DBMS_SCHEDULER parameter repeat_interval. You can provide input as per the standards of the package. For more information, see https://docs.oracle.com/database/121/ARPLS/d_sched.htm#ARPLS72261.

5. Open command prompt and navigate to CDA_Source_Replication\DestCDA.

6. Connect to SQL*Plus.

   ```
   sqlplus /nolog
   ```

7. Execute the script:

   ```
   @Setup_Dest_CDA.sql
   ```

8. Enter passwords in the prompts that appear.

   This will setup the infrastructure for the data replication schemas.

9. If you want to replicate additional tables:

   a. Connect to dest_schema_owner.

   b. Create an entry for the additional table in the "CDA_CONSOLIDATED_TABLES" table.

   c. Commit the changes.

10. In SQL*Plus, execute the script:

    ```
    @Setup_Dest_CDA_Load.sql
    ```

11. Enter passwords in the prompts that appear.

    The execution log is created in the CDA_Source_Replication\Logs directory.

2.3 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.

   The Welcome screen provides information about the Oracle Universal Installer.

4. Click **Next**.

   The Specify Home Details screen appears.

5. Enter the name of the installation and path where all the staged files from the Installer get copied to the local system. This is also the location from where Installer executes the database script.

   Example Name: OCDAHome1

   Path: C:\OCDA

6. Click **Next**.

   The OCDA Data Warehouse Details screen appears.

7. Enter values in the following fields:

   - **Database Host Name**
   - **Database Port No**
   - **Database Service Name**
   - **System Password**
   - **Default Tablespace Name**
   - **Temporary Tablespace Name**
   - **Enable National Language Support (NLS)?**

8. Click **Next**.

9. Enter values in the following fields:

   > **Note:** The password must be alphanumeric and can contain only "_" or "#" special character.

   - **OCDA Warehouse Schema (RXI) Password**
   - **OCDA Warehouse Schema (RXI) Confirm Password**
   - **OCDA RPD (RXI_RPD) Password**
   - **OCDA RPD (RXI_RPD) Confirm Password**

10. Click **Next**.

    The Informatica PowerCenter Details screen appears.

11. Enter values in the following fields:

    - **Informatica Repository Name**
    - **Informatica Domain Name**

- **Informatica Host Name**

- **Informatica Repository Port Number**

- **Informatica Username with Admin Privileges**

- **Informatica Password for Admin User**

- **Confirm Informatica Password for Admin User**

12. Click **Next**.

    The Informatica PowerCenter Client Home Directory screen appears.

13. Specify Informatica PowerCenter client Home directory. For example: C:\Informatica\10\clients\PowerCenterClient\client

14. Click **Next**.

15. Verify the details provided in the Summary screen.

16. Click **Install**.

> **Note:** You must record the log file path that appears on the bottom of the screen for future reference.

2.4 Source-specific Procedures

This section describes procedures you must perform for certain OHSCDA sources. Please review each section and determine if it applies to the source(s) you are using for OHSCDA. If the section does apply, carry out the procedure. If the section is optional, decide whether it is appropriate for your requirements and act accordingly.

2.4.1 Handling Deletions of Source Records

Different source applications handle the deletion of records in different ways. Oracle Clinical allows deletions of records in a way that avoids orphans, and has built-in auditing of these deletions. Siebel Clinical also allows deletions, properly cascading to maintain referential integrity, but does not have built-in auditing of deletions. InForm does not provide any means to hard-delete records in its transactional database. So, it does not need to be concerned neither with maintaining integrity in the face of deletions nor with auditing deletions.

2.4.1.1 Handling Deletions in Oracle Clinical

OHSCDA's ETL consults the audit trails to determine if source records have been deleted, and then soft-deletes those records in the warehouse.

2.4.1.2 Handling Deletions in Siebel Clinical

OHSCDA provides a feature to manage hard deletion of records in Siebel Clinical. Create triggers in the source system to handle deletion of records.

1. Navigate to the following temporary staging location where the OHSCDA installer copies the installation files:

   < OCDA_HOME>\Delete_Script

2. Connect to the Siebel Clinical schema and run the `ocda_sc_del_trigger.sql` script delivered with OHSCDA. This script creates the 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
- S_PTCL_VER_LS
- S_ASSESS

Provide a list of comma separated values of table names for which the triggers need 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.

> **Note:** When you delete a record in the table, the primary key of the deleted record is inserted in the RXI_DELETE_LOG_S table on the Siebel source system.

3. Set DAC source system parameter **DELETE_FLOW** value to **Y** before running Execution plan.

4. Execute the ETLs. For information, see *Oracle Clinical Development Analytics Administrator's Guide*.

   The Siebel Clinical related SDE mappings read the above instance of the RXI_DELETE_LOG_S table.

> **Note:** Records that are deleted in the source system are soft deleted in the data warehouse.

2.4.1.3 Handling Deletions in InForm

Since no deletions are supported through the InForm UI, OHSCDA makes no provision for detecting them. If you need to delete records from an InForm transactional table at the backend and want the OHSCDA warehouse to be consistent with that change, you must identify the warehouse records that arose from the InForm records that are to be deleted. Also, you must remove them from the consolidation schema and the warehouse.

2.4.2 (Optional) Handling Deletion or Deactivation of a Study

Depending on how you use OHSCDA, you may prefer to have reports that give information only on currently active studies. If so, and if source studies are completed or possibly deleted, the recommended approach for removing such a study from OHSCDA is to use OHSCDA's access control capability. That is, enable Study and Study-site access controls, and then exclude the study and its sites from the list of

studies (and sites) available to OHSCDA users. Aside from being simpler than identifying and deleting records from the warehouse, this approach has the advantage of being reversible if the decision to remove the study from the warehouse is reconsidered.

If you do not wish to use access control to avoid display of deactivated or deleted studies, there is an alternative solution. In the OHSCDA warehouse, every dimension table, and every base fact table, has a column named DELETE_FLG. OHSCDA's OAS repository is designed to treat records where DELETE_FLG equals 'Y' as if they were not present in the warehouse. OHSCDA's SIL also disregards records with DELETE_FLG = 'Y' when calculating values for aggregate tables (those with names ending with _A). So you can cause records to be effectively removed from the warehouse by setting their DELETE_FLG to 'Y'. Thus, if a study has been removed from a source database, you could identify all dimension and fact records for that study, and set their DELETE_FLG to 'Y'. This causes them to be forever invisible to OHSCDA's analytics.

This solution could be used, but only with great caution, for a study that is considered to be deactivated, but still remains in the source. Once marked as deleted, warehouse records for a study will not get their DELETE_FLG set back to 'N', but OHSCDA creates new warehouse records if there are changes or additions in the source for that study. So, if the study is truly inactive in the source, soft-deleting warehouse records for the study by setting DELETE_FLG to 'Y' will work. But any changes or additions to the study would cause new records to be loaded into the warehouse for the study, and it would re-appear in analyses.

2.4.3 (Optional) Fine-tuning of Oracle Clinical Settings

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

1. For OC 5.2, navigate to **Informatica Relational Connections** > **OC Connection Object** > **Attribute** in Informatica Workflow Manager.

2. Set **Connection Environment SQL** value as:

   - For Oracle Database 11.2.0.2:

     ```
     alter session set optimizer_features_enable='11.2.0.2'
     ```

   - For Oracle Database 11.2.0.3:

     ```
     alter session set optimizer_features_enable='11.2.0.3'
     ```

   - For Oracle Database 11.1.0.7:

     ```
     alter session set optimizer_features_enable='11.1.0.7'
     ```

3. Create the following indexes on their respective Oracle Clinical tables:

   - 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")

2.5 Setting Up Relational Connections in the Informatica Workflow for OHSCDA

For each database that will be a source for extracting data into the OHSCDA warehouse, perform the following steps to create a Relational Connection in the Informatica Workflow Manager:

1. Launch the Informatica PowerCenter Workflow Manager.

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

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

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

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

6. 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 must be added on Informatica Server.

    > **Note:** You must repeat steps 1 through 4 for each required source connection.

2.6 Preparing a DAC Repository for OHSCDA

1. Create a new DAC repository, as an Administrator.

2. Unzip OCDA_HOME\oracle.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 this 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 **User** and **System** check boxes.

    f. Select **CDA_Warehouse** application in the ApplicationList.

    g. Click **OK**.

    h. Enter the verification code and click **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 of the Informatica Server or Informatica Repository Server used 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 using 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 Name**: Enter the 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. Configure source databases (Oracle Clinical, Siebel Clinical, and InForm) 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.

- **Connection Type**: Select a connection type for the database connection.

- **Service Name**: Enter the Data Mart database service 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. Make sure the number is less than 100.

- **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, 2, and 3 for Oracle Clinical, Siebel Clinical, and InForm respectively.
>
> The logical Names of the connections in DAC must be same as the connection names created in Informatica Workflow Manager.
>
> OHSCDA Warehouse connection must be the same as provided during OHSCDA installation.

Table 2–4   Sample of Data Source Table W_RXI_DATASOURCE_S

ROW_ WID	DATASOURCE _NUM_ID	DATASOURCE_ NAME	DELETE_ FLG	INTEGRATION_ID	ENTERPRISE _ID	INFORM_STUDY_GUID
1	1	ORACLE_ CLINICAL	N	ORACLE_ CLINICAL	0	-
2	2	SIEBEL_ CLINICAL	N	SIEBEL_CLINICAL	0	-
3	3	INFORM	N	INFORM	0	{FA5BCD87-B858-4F08-8BF 8-1914B61C9DDF}
4	101	INFORM_1	N	INFORM_1	0	{CC0DBD73-FA40-4943-BD B3-60752C1A2732}

> **Note:** If InForm is one of your sources and auto merge feature is not used, then the column INFORM_STUDY_GUID must be populated with studyguid for the corresponding InForm study.
>
> You can find the distinct studyguid from table RXI_STUDYVERSIONS in the consolidation database.
>
> From DAC, the value passed for the data source parameter is always 3. Since we have one consolidation DB which holds all study data, the guid, when auto merge is set to N, helps resolving individual data source numbers.
>
> If auto merge is set to Y, then a single entry for data source 3 for INFORM is sufficient and INFORM_STUDY_GUID need not be populated. In this case, the consolidation DB is considered as single source and duplicates are handled by auto merge.

7. 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, Siebel Clinical, and InForm 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.

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

   c. Click **Connectivity 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 drop-down list for the field.

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

   f. Click **Save**.

Note:

- If Oracle Clinical, Siebel Clinical, and InForm are your source systems, use CDA - Complete Warehouse.

- If Oracle Clinical is your only source system, use CDA - Oracle Clinical Warehouse.

- If Siebel Clinical is your only source system, use CDA - Siebel Clinical Warehouse.

- If InForm is your only source system, use CDA - InForm Warehouse.

If you are installing DAC on the Windows Server 2012 R2, you must and edit the config.bat under DAC home and set JAVA_HOME to installed JRE home.

1. Install a separate JRE.

2. Go to the <DAC_Home>\dac directory.

3. Edit the config.bat file to set JAVA_HOME to the installed JRE home.

2.6.1 DAC Configurable Parameters

Navigate to Design View and select CDA_Warehouse container from drop down. On Source System Parameters tab set values as mentioned in Table 2-4.

Table 2–5 lists the DAC configurable parameters.

Table 2–5   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_TIME_FOR_SOURCE)
DATASOURCE_NUM_ID	The ID associated with every source system. The default ID is 1 for Oracle Clinical, 2 for Siebel Clinical, and 3 for InForm.
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 captured 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	Currently, not in use.
MPI_USER	Currently, not in use.
AUTO_MERGE_FLG	This is used to enable or disable auto-merge. - Y: Enables auto-merge - N: Disables auto-merge
$OutputFile_OCDA	Currently, not in use.

Table 2–5   (Cont.) DAC Configurable Parameters

Parameter	Description
$DBConnection_SP_OLAP	Currently, not in use.
$DBConnection_OLAP	Currently, not in use.

2.7 Emplacing the OHSCDA Help Files

You will be using the help.zip file in this section.

2.7.1 Placement of Files for Oracle WebLogic Managed Server

If the OAS Server is not the same machine where the installer is run, copy the help.zip file to the machine where OAS server is installed. The help.zip file is located in the <OCDA_HOME>\Reporting\Help directory.

1. Extract the help.zip file at any location on the OAS Server. For example, /scratch/stage/help.
   The extracted help folder contains the analyticsRes folder.

2. Launch Oracle WebLogic Administration Server Console. The following shows the format of the URL:
   ```
   https://<hostname>.<domain>:<port>/console
   ```
   The Oracle WebLogic Server Administration Console screen appears.

3. Log on to Oracle WebLogic Server Administration Console as an administrator.

4. In the left pane of the Administration Console, select **Deployments**.

5. In the left pane, click **Lock & Edit**.

6. In the right pane, click **Install**, and navigate to the location where help.zip was extracted in step 1.

7. Select analyticsRes and click Next.

8. Select Install this deployment as an application and click Next.

9. In the Available targets for analyticsRes section, under Clusters, select bi_server1 on which you want to deploy OHSCDA.

10. Click Next.

11. Select the I will make the deployment accessible from the following location option, and select the path for analyticsRes. For example, /scratch/stage/help/analyticsRes.

12. Click Finish.
    The analyticsRes appears in the Deployment table.

13. Click Activate Changes.

14. Click the Control tab.

15. Select analyticsRes in the Deployment section.

16. Click Start, and select Servicing all requests.
    The Start Application Assistant page appears.

17. Click Yes to start the selected deployment.
    The analyticsRes state becomes active after this deployment. You may confirm the same on Deployments page.

18. Log out from Oracle WebLogic Server Administration Console.

19. Log on to Oracle Enterprise Manager Fusion Middleware Control. The following shows the format of the URL:

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

20. Restart the BI components.

21. Log on to OAS and verify the help links on the dashboards.

2.8 Preparing the OAS Web Catalog and Repository for OHSCDA

1. Stop the BI services.

2. To import the ssi.bar file, run the following command in [DOMAIN_HOME]/bi/bitools/bin:

    `Importarchive.sh ssi <Location of the Bar file> encryptionpassword=<RPD Password>`

    Where, encryptionpassword is the password used to encrypt the database connection credentials in the RPD. If not provided the connection credentials will not be imported. For example:

    `importarchive.sh ssi /scratch/Software/OCDA/ssi.bar encryptionpassword=Admin123 for linux`

    `importarchive.cmd ssi C:\scratch\Software\OCDA\ssi.bar encryptionpassword=Admin123 for windows`

3. Restart the BI services.

4. Copy the OCDA.rpd file from <OCDA_HOME>\Reporting\RPD to the location where the BI Administration tool is available.

5. In the Oracle BI Administration Tool, select **File**, then **Open**, and then **Offline**.

6. Navigate to the OCDA.rpd file, and then click **Open**.

   Password: `Admin123`

7. Click **OK**.

8. In the Oracle BI Administration Tool, select **File**, and then select **Change Password**.

9. Enter the current (old) password.

10. Enter the new password and confirm it.

11. Click **OK**.

12. Modify the connection pools in the RPD as following:

    a. In the physical layer, expand the OCDA Data Warehouse node and double-click the **Connection Pool** object.

    The Connection Pool dialog box appears.

    b. In the following string under the **Data source name** field, replace <hostname>, <port_number>, and <SID_NAME> with the host name, port number, and SID name of the database:

    ```
    (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=<hostname>)(PORT=<port_
    number>))(CONNECT_DATA=(SID=<SID_NAME>)))
    ```

    c. Change the username to the username of the OHSCDA read-only DW RPD schema name.

    d. Change the password to the password of the OHSCDA read-only DW RPD schema password.

    e. Click **OK**.

    f. Reconfirm the password.

    g. Click **OK**.

    h. In the physical layer, expand the OCDA Data Warehouse node and double-click the **OCDA_CP_InitBlocks** object.

    i. Repeat steps b through g.

13. From the File menu, select **Save** to save the rpd.

14. Click **Yes** for Do you wish to check global consistency?

15. Click **Close** in the Consistency Check Manager.

16. Click **Save**.

17. Click **File** and then click **Close**.

18. Click **File** and then click **Exit**.

19. To upload the OCDA.rpd file, run the following command:
```
<Oracle_Home>\user_projects\domains\bi2\bitools\bin\datamodel.cmd uploadrpd -I OCDA.rpd
-W <RPD Password> -SI ssi -U <WebLogic Admin Username> -P <WebLogic Password> -S
<Server.Domain> -N <Listener Port>
```

20. 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 appears.

> **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.

2.9 OAS Post-deployment Configuration

1. Log in to EM (https://<hostname>.<domain>:<port>/em).

2. Navigate to Security > Application Policies.

3. Select Application Stripe as "obi", Principal Type as "Application role", and click on the right turned triangle icon.

4. Select BIAdministrator in the Principal pane and click on the Edit icon.

5. Under Permissions, click on the Add icon.

6. Click **Resource Types**.

7. Select Resource Type as "oracle.bi.tech.visualanalyzer.permission".

8. Click on right turned triangle icon.

9. Select Resource Name as "oracle.bi.tech.visualanalyzer.admin.access" and click **Continue**.

10. Select Permission Actions check box to "All" and click **Select**.

11. Under Permissions, click on the Add icon.

12. Click **Resource Types**.

13. Select Resource Type as "oracle.bi.pod.administration.permission".

14. Click on right turned triangle icon.

15. Select Resource Name as "oracle.bi.pod.admin.properties.edit" and click **Continue**.

16. Select Permission Actions check box to "All" and click **Select**.

17. Click OK and exit the page.

18. Restart the entire stack for the changes to take effect.

19. Open http://host.domain:port/analytics/systemsettings/

20. Search for "EVALUATE SUPPORT LEVEL" and change the value to 2.

21. Search for "Show Null Value When Column Is Nullable " and by default, it has "always" selected. Select "never".

22. Save the changes.

23. Click Restart in the upper right pane.

2.11 Configuring Maps

This section assumes that you installed Oracle BI Enterprise Edition and that Oracle MapViewer was automatically configured and deployed. For information on MapViewer, see *Oracle Fusion Middleware User's Guide for Oracle MapViewer*.

To administer maps using Administration pages:

1. Log in to OAS.

   Make sure you have been granted the Access to Administration and Manage Map Data privileges.

2. In the global header, click **Administration**.

3. Click the Manage Map Data link to display the Manage Map Data page.

4. Click the **Layers** tab.

5. Click **Import Layers** to display the Import Layers dialog.

   a. In the dialog box, select ORACLE_MAPS from the Preview Map drop-down list.

   b. Select **OracleMaps** from the **Look in** drop-down list.

   c. In **Available Layers**, select **World_Cities**.

   d. Click **OK**.

   e. Repeat steps a to d, but in step c for Available Layers, select World_Countries.

   This will populate two entries in layers table.

6. Highlight and select **World_cities** in layers, and click **Edit**.

   a. In Edit layer dialog box, select Layer key as City name from the drop-down list.

   b. In BI Key columns, click on the "+" icon, and select OCDA subject area in select subject area pop-up.

   c. In selected BI columns pop-up, expand study site folder, and select city.

   d. Use ">" button to select the column, click **OK**, and again click **OK** to close main dialog box.

   e. Highlight and select World_countries in layers, and click **Edit**.

   f. In Edit layer dialog box, select Layer key as Name from the drop-down list.

   g. In BI Key columns, click on the "+" icon, and select OCDA subject area in select subject area pop-up.

   h. In selected BI columns pop-up, expand study site folder, and select country.

   i. Use ">" button to select the column, click **OK**, and again click **OK** to close main dialog box.

7. Click **OK** when you have finished selecting layers that are appropriate for the subject area with which you are working.

8. Click the **Background Maps** tab, and click **Import Background Maps** to display the Import Background Map dialog.

9. In the dialog, select **ORACLE_MAPS** for Available Maps.

10. Click **OK** when you have finished selecting main maps.

11. On the Background Maps tab, select a map, and click **Edit Background Map** to display the Edit Background Map dialog in which you name the map and specify the order of layers and their zoom levels preferably 6.

12. Click **OK** when you have finished editing the map.

13. Click **Back** when you have finished working with the Administration page. Your changes are saved automatically.

After you have specified background maps, layers, and zoom levels, MapViewer creates a static image for a map using this information. Then, MapViewer sends that image for rendering in the browser for use by content designers and end users in map views.

> **Note:** This content will be lost if you reimport bar.

2.12 Creating Security Groups for OHSCDA

Perform the following steps 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 Groups table.

7. Repeat step 4 through 6 with the following values:

Table 2–6   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