

# **Oracle® Healthcare Translational Research**

Installation Guide

Release 3.3

**E91599-01**

October 2018

Updated to include information for upgrading to 3.3.x patch sets.

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# Preface

This guide will show you how to install and upgrade Oracle Healthcare Translational Research (OHTR).

## Documentation Accessibility

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## Finding More Information

### Oracle Help Center

The latest user documentation for Oracle Health Sciences products is available at <https://docs.oracle.com/en/industries/health-sciences/>.

### My Oracle Support

The latest release notes, patches and white papers are on My Oracle Support (MOS) at <https://support.oracle.com>. For help with using MOS, see [https://docs.oracle.com/cd/E74665\\_01/MOSHP/toc.htm](https://docs.oracle.com/cd/E74665_01/MOSHP/toc.htm).

## Related Documents

### Oracle Business Intelligence Enterprise Edition Documentation

The OBIEE documentation is available at <http://docs.oracle.com/middleware/12212/biee/index.html>.

### Oracle Healthcare Foundation

The OHF documentation is available at <https://docs.oracle.com/en/industries/health-sciences/oracle-healthcare-foundation/index.html>



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# Installation Overview

This chapter describes the Oracle Healthcare Translational Research (OHTR) installation requirements. It contains the following topics:

- [Supported platforms](#)
- [Supported browsers](#)
- [Technology stack](#)
- [Before you begin](#)

## 1.1 Supported platforms

The following platforms are supported.

- **Database Tier:** OHTR supports all platforms supported for the Oracle Healthcare Foundation database, and the OHTR database tier should be installed on the OHF database.
- **Middle Tier:** OHTR supports all platforms supported for the Oracle Healthcare Foundation middle tier. October 2018October 2018Release 3.3

## 1.2 Supported browsers

The supported browsers for OHTR are:

- Windows Internet Explorer IE 11 or later
- Mozilla Firefox v17 or later
- Google Chrome v12 or later.

## 1.3 Technology stack

The required technology stack for OHTR should contain:

- Oracle Healthcare Foundation; for release information see [Section 1.4, "Before you begin"](#).
- Oracle Business Intelligence Enterprise Edition (OBIEE) 12.2.1.2
- Oracle Application Development Framework (ADF) Runtime 12.2.1.2
- Oracle Database 12 c, Release 2
- Oracle WebLogic Server 12.2.1.2
- Java Development Kit (JDK) 1.8

- Python 2.X (2.6 or higher). Python 3.X is not compatible.

## 1.4 Before you begin

If the Self Service Analytics are required, remember to create a separate middleware home with WebLogic Server 12.2.1.2 for OBIEE.

If everything is in order and OHF 7.2.1 is installed, you can move on to installing or upgrading to OHTR 3.3.

**Go to the Oracle Help Center to see more details on the OHF installation process:**

- For details on how to install OHF 7.2.1, see the *Oracle Healthcare Foundation Installation Guide*, on the Oracle Help Center:
- For details on how to properly install OBIEE 12.2.1.2, and create a separate middleware home with Weblogic Server, see the *Oracle® Fusion Middleware Installation Guide for Oracle Business Intelligence* on the Oracle Help Center.



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## Install the Database Tier

This chapter describes security considerations and the installation process for the database tier. You will learn how to:

- [Check prerequisites](#)
- [Prepare to run the installer](#)
- [Install the Database Tier](#)
- [Upgrade the Database Tier](#)

### 2.1 Check prerequisites

Install or upgrade the Oracle Healthcare Foundation (OHF) database tier to the release required for the OHTR release you are installing or upgrading to. See the release notes for more information.

The installation environment can be either:

- the database server (Exadata computing node) where the OHF database is installed
- a stand-alone Linux server that has the following additional software available:
  - Python 2x (2.6.6 or later)
  - Oracle 12c client with net services configured to access the OHF database

The following five database schemas are required to store OHTR objects. They are installed during the OHF database installation. Each schema and tablespace may have the default name or a name provided during OHF installation. Note these details, which you will need when you run the OHTR Installer.

- CDM - Cohort Data Mart (CDM) schema stores the clinical information that is refreshed by ETLs.
- ODB - Omics Data Bank (ODB) schema stores the omics data linked to patients as well as genetic reference data to link.
- SVC - Services schema is used by ODB loader APIs.
- ENT - The Enterprise (ENT) schema stores system-wide configuration information like product version.
- JOB\_ENGINE - Job Engine (JOB) schema tracks all jobs executed and provides templates for jobs.

The APP - Application schema is an additional database schema installed by the OHTR Installer, which stores information used in the UI. If desired, this schema and its

associated tablespaces can be created earlier in the OHF database by a DBA. If the schema exists, the OHTR Installer uses it to store the application. Otherwise it creates the tablespaces and schemas first.

## 2.2 Prepare to run the installer

1. Download the OHTR installation package from the Media Pack and extract the files into a directory on the installation server.
2. Go to the `<media_pack_location>/` folder.
3. Using the following command, unzip the OHTR\_Linux-x64.zip file to the folder where you want to launch the installer:

```
unzip -a OHTR_Linux-x64.zip
```

4. Go to the Disk1/install folder.
5. Change the protection on files using the following command:

```
chmod 755 *
```

## 2.3 Install the Database Tier

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**Important:** Ensure that all prerequisites ([Section 2.1](#)) have been fulfilled.

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To install the OHTR database framework:

1. Start the Oracle Universal Installer (OUI) using the following command:
  - If the database server is on the machine where the Installer is running, execute:
 

```
sh runInstaller.sh
```
  - If the database server is on a different machine, execute:
 

```
sh runInstaller.sh remote_installation=true
```
  - If you are executing the Installer on Linux, change the directory to Disk1/install and run the following command:

```
bash$ chmod +x unzip runInstaller runInstaller.sh
```

If the schema name provided here already exists in the OHF database, then that schema is used to install OHTR objects. If it does not exist, the schema will be created.

While creating the OHTR application schema, the Installer prompts for the default and temporary tablespaces for this user. If these tablespaces already exist, they are assigned to the user and quota unlimited is granted on them. Otherwise these tablespaces are created with the datafile located in the user-supplied file destinations:

Database Schema	Default Tablespace	Temporary Tablespace
APP	APP_DATA	TRC_TEMP_TS

2. The Welcome screen appears. Click **Next**.
3. In the **Select a Product to Install** screen, select the **Oracle Healthcare Translational Research DB Tier 3.3** option, and click **Next**.
4. In the **Specify Home Details** screen, enter the installation home name and location, and click **Next**.
5. In the **Verify Installation Prerequisites** screen, verify if all the prerequisites are met before proceeding. Click **Next**.
6. In the **Oracle Client Home Configuration** screen, specify the Oracle client home path. The installer validates this path. Click **Next**.
7. In the **Enter DB Connection details** screen, enter values for the following fields and click **Next**:
  - **Hostname**: by default, the system host name appears.
  - **Port**: by default, the port number is 1521. You can edit this field if required.
  - **Service name**
  - **System user password**
  - **Sys user password**
8. In the **Enter OHF Schema Details** screen, enter values for the following fields and click **Next**:

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**Note:** Make sure that the user names and passwords are not the same for all entered schemas.

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- Omics data bank schema name
  - Omics data bank schema password
  - Common data mart schema name
  - Common data mart schema password
  - Enterprise schema name
  - Enterprise schema password
  - Job Engine schema name
  - Job Engine schema password
9. In the **Enter OHF Schema Details** screen, enter values for the following fields and click **Next**.
    - Services schema name
    - Services schema password
  10. In the **Enter Schema Details** screen, enter values for the following fields and click **Next**.
    - OHTR application schema name
    - OHTR application schema password
  11. In the **Specify Tablespace details** screen, enter values for the following fields and click **Next**.
    - Default tablespace for APP schema

- Temp tablespace for APP schema
12. In the **Database Verification** screen, verify all the details.
    - Click **Back** to make any changes.
    - After verifying that all details are correct, click **Next**.
  13. In the **Verify Configuration Parameters** screen, verify all the details.
    - Click **Back** to make any changes.
    - After verifying that all details are correct, click **Next**.
  14. In the **Summary** screen, take one last look at the details. If everything is alright, click **Install**.
  15. When the installation is complete, the **End of Installation** screen appears. Review the information and click **Exit**.
  16. At the confirmation prompt, click **Yes** to exit the Installer.
  17. Review the generated installation log files for errors. If necessary, contact Oracle support to fix any errors.

## 2.4 Upgrade the Database Tier

For upgrading the Database Tier, follow the same steps as in section [Section 2.3](#), "Install the Database Tier", except for step 11.

For an upgrade, in the **Enter Schema details** screen, if you use existing app schema values, you will no longer go through the **Specify Tablespace details** screen that is mentioned in step 11.

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## Install and configure the Middle Tier

This chapter describes the installation and configuration steps for the middle tier. In it you will find out how to:

- Check prerequisites
- Prepare to run the installer
- Run the installer
- Check log files
- Upgrade the Middle Tier
- Browse these frequently asked questions (FAQs)
- Update the TRC.properties file
- Uninstall the OHTR Middle Tier if needed

The OHTR Middle Tier Installer installs the OHTR UI Application along with the application roles in the Weblogic Server.

### 3.1 Check prerequisites

Make sure that:

- WebLogic Server is installed on the machine.
- OHF Data model schemas are installed using OHF data model installer.
- oh\_domain is created in the WebLogic Server using OHF middle tier installer.
- OHTR database schemes are installed using OHTR database installer.

### 3.2 Prepare to run the installer

1. Extract the contents of the OHTR media pack to your system.
2. Open the `<media_pack_location>/folder`.
3. Execute the following command to unzip the TRC Installer and extract its contents to the location where you want to launch the installer.

```
unzip -a <TRC_installer_file>.zip
```

4. Open the Disk1/install folder.
5. Change the protection on files as follows:

```
chmod 755 *
```

### 3.3 Run the installer

1. Start the Oracle Universal Installer (OUI) by running the following command.

```
./runInstaller
```

The **Welcome** screen appears. Click **Next**.

2. In the **Specify Inventory directory and Credentials** screen, enter the path of the inventory directory and click **Next**.

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**Note:** This screen is displayed only if the Inventory Location has not already been set up through the Installer.

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3. In the **Select a Product to Install** screen, select **Oracle Healthcare Translational Research Middle Tier 3.3** and click **Next**.
4. In the **Specify Home Details** screen, enter the location where you want to install the product. and click **Next**.
5. In the **Install Type** screen, select one and click **Next**:
  - **Yes** to perform a fresh installation.
  - **No** to upgrade your existing OHTR installation.
6. In the **Verify Install Prerequisites** screen, verify that all prerequisites have been completed and click **Next**.
7. (**Fresh installation only**) In the **Java Home** screen, specify the path where JDK has been installed. The Installer validates this path. Click **Next**.
8. In the **Fusion Middleware Home** screen, enter the path to the WebLogic middleware home. The Installer validates the path. Click **Next**.
9. In the **AdminServer Configuration** screen, enter the following details and click **Next**:
  - Listen Address
  - Listen Port
  - SSL Lister Port
  - Username - WebLogic administrator username
  - Password - WebLogic administrator password
  - Verify password: Enter the WebLogic administrator password again.
10. (**Fresh installation only**) In the **OHTR Schema Details** screen, enter the following details and click **Next**:
  - Database host name
  - Database port
  - Service name
  - Cohort Explorer application schema name
  - Cohort Explorer application schema password

11. In the **Choose Network Proxy Configuration** screen, select one and click **Next**:
  - **Yes** to continue with network configuration.
  - **No** if you do not want to configure the network at this time.
12. In the **Network Proxy Configuration** screen, enter the following details and click **Next**:
  - HTTPS proxy host
  - HTTPS proxy port
13. In the **OHTR Configurations** screen, select one and click **Next**:
  - **Yes** to continue with OHTR configuration.
  - **No** if you do not want to configure OHTR at this time.
14. Still in the **OHTR Configuration** screen, enter the following details and click **Next**:
  - Dalliance authority name
  - Dalliance authority value
  - Dalliance UCSC name
  - Dalliance UCSC value
  - Dalliance sequence URL value
  - Dalliance genes URL name
  - Dalliance genes URL value
15. In the **Summary** screen, verify all the details.
  - Click **Back** to make any changes.
  - If all details are correct, click **Install**.
16. When the installation is complete, the **End of Installation** screen appears. At the confirmation prompt, click **Yes** to exit the Installer.

### 3.4 Check log files

The installation log files are located at \$ORACLE\_BASE/oraInventory/logs. For example, /u01/app/oraInventory/logs. The log files are time stamped and each installation session creates a new set of log files. The following installation log files are generated while installing the OHTR middle tier:

Log File	Description
installActions<timestamp>.log	Records the installer actions and can be used to diagnose issues with the installer
oraInstall<timestamp>.out	Records the output of all the scripts run by the installer
oraInstall<timestamp>.err	Records errors from all the scripts run by the installer

If necessary, contact Oracle Support to resolve any errors. While reporting any problems that occur during middle tier installation, make sure that you include all the above log files.

## 3.5 Upgrade the Middle Tier

1. Start the Oracle Universal Installer (OUI) by running the following command.

```
./runInstaller
```

The **Welcome** screen appears. Click **Next**.

2. In the **Specify Inventory directory and credentials** screen, enter the path of the inventory directory and click **Next**.

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**Note:** This screen is displayed only if the Inventory Location has not already been set up through the Installer.

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3. In the **Select a Product to Install** screen, select **Oracle Healthcare Translational Research Middle Tier 3.3** and click **Next**.
4. In the **Specify Home Details** screen, enter the location where you want to install the product. and click **Next**.

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**Note:** For an upgrade choose the same OHTR Home path that you used for a fresh installation. This preserves any configurations that were made to the trc.properties file.

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5. In the **Choose Install Type** screen, select **No** to upgrade your existing OHTR installation, and click **Next**.
6. In the **Verify Upgrade Prerequisites** screen, verify that all prerequisites have been completed and click **Next**.
7. In the **Oracle Fusion Middleware Home** screen, enter the path to the WebLogic middleware home. The Installer validates the path. Click **Next**.
8. In the **AdminServer Configuration** screen, enter the following details and click **Next**:
  - Listen Address
  - Listen Port
  - SSL Listener Port
  - Username - WebLogic administrator username
  - Password - WebLogic administrator password
  - Verify password: Enter the WebLogic administrator password again.
9. In the **Network Proxy Configuration** screen, select one and click **Next**:
  - **Yes** to continue with network configuration.
  - **No**, if you do not want to configure the network at this time. **For an upgrade, if you choose No, the values provided during the previous installation are preserved.**
10. In the next **Network Proxy Configuration** screen, enter the following details and click **Next**:
  - HTTPS proxy host



- HTTPS proxy port

**For an upgrade, the values you enter overwrite the values provided during the previous installation.**

11. In the **OHTR Configurations** screen, select one and click **Next**:

- **Yes** to continue with OHTR configuration.
- **No** if you do not want to configure OHTR at this time. **For an upgrade, if you choose No, the values provided during the previous installation are preserved.**

12. Still in the **OHTR Configuration** screen, enter the following details and click **Next**:

- Dalliance authority name
- Dalliance authority value
- Dalliance UCSC name
- Dalliance UCSC value
- Dalliance sequence URL value
- Dalliance genes URL name
- Dalliance genes URL value

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**Note:** For an upgrade, the values you enter overwrite the values provided during the previous installation.

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13. In the **Summary** screen, verify all the details.

- Click **Back** to make any changes.
- If all details are correct, click **Install**.

14. When the upgrade is complete, the **End of Installation** screen appears. At the confirmation prompt, click **Yes** to exit the Installer.

## 3.6 Browse these frequently asked questions (FAQs)

### How can I prevent wrapping of data type objects?

The MT installer performs the steps to prevent wrapping data type installers. To verify this configuration:

1. Log into the Administration Console.
2. In the Domain Structure tree, select **Services > Data Sources**.
3. On the **Summary of Data Sources** page, click **OH-TRC-DS**.
4. Select the **Connection Pool** tab.
5. Scroll down and click **Advanced** to show the advanced connection pool options.
6. Verify if **Wrap Data Types** check box is not selected.

### Why is the application running out of connections?

- This issue can be resolved by increasing the number of connections as mentioned below.

- Better performance can be achieved by modifying the following attributes:
  - **Initial Capacity**
  - **Maximum Capacity:** Maximum number of connections depends on the number of users. For example, if there are 10 users the suggested number of connections should always be multiplied by 10 (that is,  $10 * 10 = 100$ ).
  - **Capacity Increment:** This value depends upon the multiplication factor being used to calculate maximum capacity (as per above scenario, it is 10).

For more information, see **Tuning Data Source Connection Pools** available at

[https://docs.oracle.com/middleware/12212/wls/JDBCA/jdbc\\_datasources.htm#JDBCA712](https://docs.oracle.com/middleware/12212/wls/JDBCA/jdbc_datasources.htm#JDBCA712)

### How can I increase the connection pool size?

Perform the following steps to increase the connection pool size:

1. Log into the WebLogic console.
2. Go to **Services > Data Sources**.
3. Click the data source for which you want to increase the connection pool size.
4. Go to the **Connection Pool** tab.
5. Specify the number of connections in the attribute **Maximum Capacity**. Oracle recommends that you set this to at least 100.
6. For details on this configuration, click **More Info...** right across this attribute.

### How can I increase the default row fetch size?

For better performance, increase the default row fetch size to 100 for the OHTR data source.

1. Log into the WebLogic console.
2. Go to **Services > Data Sources** under oh\_domain.
3. Select the data source **OH-TRC-DS**.
4. Go to **Configuration > Connection pool**.
5. Edit the property field oracle.jdbc.defaultRowPrefetch as shown in the following example:

```
user=app
oracle.jdbc.defaultRowPrefetch=100
```

### How can I increase the Heap Size?

To optimize performance, Oracle recommends that you update the heap memory of the WebLogic server with the following values:

- **Exadata**
  - Initial Heap Size: 8GB or higher
  - Max Heap Size: 816 GB or higher
- **Non-Exadata**
  - Initial Heap Size: 4GB or higher
  - Max Heap Size: 8GB or higher

There are different ways to increase the heap memory. For example, to change the Java Heap size for a managed server:

1. If you have not already done so, in the Change Center of the Administration Console, click **Lock & Edit**.
2. In the left pane of the console, expand **Environment > Servers**.
3. In the **Servers** table, click the managed server where OHTR is deployed to configure.
4. On the **Configuration** tab, click **Server Start**.
5. In the **Arguments** field, specify the Java option to increase the initial and maximum heap size.

For example,

```
-Xms8G -Xmx16G, for Exadata
-Xms4G -Xmx8G, for Non-Exadata
```

6. Click **Save**.
7. To activate these changes, in the Change Center of the Administration Console, click **Activate Changes**. Not all changes take effect immediately—some require a restart.
8. After you finish, you must restart the managed server, so it uses the new heap values.

### 3.7 Update the TRC.properties file

The TRC.properties file contains configurable values used in the user interface of the OHTR application. The TRC.properties file is uploaded in the root directory of the WebLogic Server (<FMW\_HOME>/user\_projects/domains/oh\_domain, where FMW\_HOME is the home directory of Oracle Fusion Middleware).

Following are descriptions of the file properties.

**Table 3–1 Properties in TRC.properties File**

Property	User Interface	Description
SF_HOME	View Record	This corresponds to the location of the file system where the result files are stored. This should correspond to TRC_ODB_PERM oracle directory object used when loading result files into the ODB schema.  This location must have the necessary permissions to ensure that the WebLogic user can access this path and read from this location.
MAX_FILE_SIZE	View Record	This corresponds to the maximum file size (in MB) that a user can download.
PT_LIST.MAX_PATIENT_ID	Cohort List	This corresponds to the maximum number of patients or subjects that can be saved in the Cohort List. The maximum value that can be provided is 1000.

**Table 3–1 (Cont.) Properties in TRC.properties File**

<b>Property</b>	<b>User Interface</b>	<b>Description</b>
GENOMIC.MAX_PATIENT_COUNT	Genomic Data Export	This corresponds to the maximum count of patients or subjects that can be selected for generating the genomic data. This is applicable for all the 3 options on selecting the patients (active query, library query and the ad-hoc patients). If the count of patients or subjects selected is more than this value, an error message is displayed when the <b>Submit</b> button is clicked.
GENOMIC.REPORTS_MAX_PATIENT_COUNT	Cohort Reports	This corresponds to the maximum number of patients whose data can be viewed in the reports. This applies to all options of selecting the Patients/Subjects. If the count of patients or subjects selected is more than this value, a warning message is displayed. You can either continue to plot with a large number of patients/subjects, which might impact performance or change the selected cohort for a smaller number of patients / subjects.
DEFAULT_ACTIVE_QUERY_LIMIT	Cohort Reports	This corresponds to the maximum number of patients /subjects whose data is plotted when the patient selection mode is Active Query, but the patients/subjects have not been filtered using the Cohort Query screen. If this count is exceeded, then an error message is displayed.
MAX_SPEC_REPORT	Cohort Reports	This corresponds to the maximum number of specimens for which a sample matrix can be plotted. If the number of specimens exceeds this limit, then a warning message is shown and a summary report of genomic information is displayed.
GENOMIC.MAX_GENE_COUNT	Cohort Reports or Genomic Data Export	This corresponds to the maximum count of Gene names that can be selected for generating genomic data. This applies to the Ad-hoc list Gene selection in the screen. If the count of Genes selected is more than this value, an error message is displayed when the <b>Submit</b> button is clicked.
VARIANT_DISPLAY_LIMIT	View Record	This corresponds to the maximum number of records that can be retrieved from the database for displaying variant data.
DEMOGRAPHICS_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the Demographics criteria on the Cohort Query screen.
CONSENT_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the Consent criteria on the Cohort Query screen.
DIAGNOSIS_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the Diagnosis criteria on the Cohort Query screen.
CLINICAL_ENCOUNTER_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the Clinical Encounter criteria on the Cohort Query screen.

**Table 3–1 (Cont.) Properties in TRC.properties File**

Property	User Interface	Description
PROCEDURE_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the Procedure criteria on the Cohort Query screen.
MEDICATION_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the Medication criteria on the Cohort Query screen.
PATIENT_HISTORY_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the History criteria on the Cohort Query screen.
TEST_OBSERVATION_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the Test Or Observation criteria on the Cohort Query screen.
SPECIMEN_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the Specimen criteria on the Cohort Query screen.
STUDY_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the Study criteria on the Cohort Query screen.
RELATIVE_TIME_EVENTS_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the Relative Time Events criteria on the Cohort Query screen.
SEQUENCE_VARIANTS_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the Sequence Variants criteria on the Cohort Query screen.
COPY_NUMBER_VARIATION_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the Copy Number Variation criteria on the Cohort Query screen.
DALLIANCE.AUTHORITY_XX	View Record	This is one of four property values set to configure a header for a Dalliance instance. The header provides details of the common reference tracks available for display in the instance. This property specifies the <i>Authority</i> suffix (of the genomic reference) for the numeric (XX) value in the property label. For example, NCBI for 36 or GRCh for 37.  <b>Note:</b> XX is a numerical value; for example 37  <b>Note:</b> A new property should be present for each supported Assembly version.
DALLIANCE.UCSC_NAME_XX	View Record	This is one of four property values for a Dalliance instance reference tracks header. It stores the UCSC assembly alias of the reference. For example hg19 for XX value 37.  <b>Note:</b> XX is a numerical value; for example 37  <b>Note:</b> A new property should be present for each supported Assembly version.
DALLIANCE.SEQ_URL_XXXX	View Record	This is one of four property values for a Dalliance instance reference tracks header. It provides the URL for a reference sequence track.  <b>Note:</b> XXXX is the UCSC name value in the second property instance for Dalliance.  <b>Note:</b> A new property should be present for each supported Assembly version.

**Table 3–1 (Cont.) Properties in TRC.properties File**

Property	User Interface	Description
DALLIANCE.GENES_URL_XXXX <b>Note:</b> XXXX is the UCSC name value in the second property instance for Dalliance.	View Record	This is one of four property values for a Dalliance instance reference tracks header. It provides the URL for a reference gene track to be displayed in Dalliance. <b>Note:</b> A new property should be present for each supported Assembly version.
MICROARRAY_EXPRESSION_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the MicroArray Expression criteria on the Cohort Query screen.
RNA_SEQ_EXPRESSION_DISABLED	Cohort Query	Setting this value to <i>True</i> disables the RNA Sequencing criteria on the Cohort Query screen.
GENOMIC.CHROMOSOME_RANGE	Genomic Query - Variant Search	This corresponds to the maximum chromosome range that can be provided for searching variants using a Genomic Position in the variant search functionality of the Genomic Query.

### 3.8 Uninstall the OHTR Middle Tier if needed

To uninstall the OHTR middle tier:

1. Log in to the WebLogic Admin Console.
2. Click **Lock and Edit**.
3. Select **Deployments**, then **Control**, then select the ear files to undeploy:
  - OHF-TRC-App: Cohort Explorer UI Application
4. Click **Stop**.
5. Select **Configuration**, then **Install**, then select the ear files and undeploy and delete them.
6. Click **Activate Changes**.

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## Configure network data encryption and integrity for Oracle servers and clients

For information on how to configure native Oracle Net Services data encryption and integrity for Oracle Advanced Security, see *Oracle® Database Advanced Security Administrator's Guide 12c, Release 2, Part IV - Configuring Oracle Database Network Encryption and Data Integrity* on the Oracle Help Center.





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## Configure OBIEE

This chapter describes how to set up the OBIEE server with the RPD and catalog for *ad hoc* reporting needs as required. It contains the following topics:

- [Deploy the RPD and Catalog](#)
- [Create OBIEE groups and users](#)

### 5.1 Deploy the RPD and Catalog

To deploy the RPD and Catalog:

1. Install OBIEE 12.2.1.2.

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**Note:** The existing OBIEE installation for OHF can be used. However, please remember to create a new domain for TRC RPD, instead of using the domain that might have been created for OHF RPD.

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2. While running the configuration, create an OBIEE domain.

Remember that you can now deploy TRC CDM and HCD RPD on the same OBIEE server by creating different OBIEE domains. For details, see *Oracle® Fusion Middleware Installing and Configuring Oracle Business Intelligence, Chapter 4 - Configuring Oracle Business Intelligence*.

For details on how to create a Weblogic domain, see the *Oracle® WebLogic Server 12c (12.2.1) Creating a Domain Guide, Chapter 2 - Creating a WebLogic Server 12c (12.2.1) Domain*, on the Oracle Help Center.

3. Go to the following location on the middle tier installation home:

```
<TRC_MTIER_HOME>/trcmt/ohf_products/OBIEE/
```

4. Copy RPD.zip and OracleHealthSciencesCohortExplorer.zip to the OBIEE server.
5. Extract them to a folder on the OBIEE server. This yields the RPD file and the catalog folder.
6. In the Oracle BI Administration Tool, open the extracted Oracle BI repository (OracleHealthSciencesCohortExplorer.rpd) in offline mode and configure database connections.

- a. Open the Oracle BI Administration Tool using either:

```
<OBIEE_DOMAIN_HOME>\bitools\bin\admintool.cmd
```

or

```
admintool.sh
```

- b. In the Oracle BI Administration Tool, from the **File** menu, select **Open**, then **Offline**.
- c. Select **OracleHealthSciencesCohortExplorer.rpd**.
- d. Enter the repository password to log into the OracleHealthSciencesCohortExplorer.rpd file. The default password is cohort.

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**Note:** Change the RPD password by selecting Change Password from the File menu. Enter the old and new passwords.

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- e. Click OK.
7. Modify the connection pools in the RPD:
    - a. In the physical layer, expand the OracleHealthScienceCohortExplorer node and double-click **Connection Pool**.
    - b. Change the following:
 

**Data source name:** Enter the TNS entry name of the OHF database instance where OHTR is installed.

**User name:** Provide the APP schema user name.

**Password:** Provide the password of the APP schema user. Confirm the new password and click **OK**.
    - c. From the **File** menu, select **Save** to save the RPD. When the “Do you wish to check global consistency” dialog box appears, click **No**.

8. Upload the RPD using the following command:

```
<OBIEE_DOMAIN_HOME>/bitools/bin/datamodel.sh uploadrpd -I <Path extracted to  
as mentioned in step 5>\OracleHealthSciencesCohortExplorer.rpd -SI ssi -U  
weblogic -P <weblogic credentials>
```

You are prompted for to add the RPD password. For this password, contact your Oracle Product Manager.

9. Copy the contents of the catalog folder to
 

```
<OBIEE_DOMAIN_HOME>/bidata/service_instances/ssi [Service Instance  
Name]/metadata/content/catalog
```
10. Check whether tnsnames.ora is present in the location. If not, create it and add a TNS entry for the DB connection. To create the file:

```
<OBIEE_DOMAIN_HOME>/config/fmwconfig/bienv/core/tnsnames.ora
```

To add the TNS entry:

```
trcpdb = (DESCRIPTION = (ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCP) (HOST =  
<ohfdb_server.domain>) (PORT = <PORT_NUMBER>))) (CONNECT_DATA = (SERVICE_NAME =  
<OHDFDB_SERVICE_NAME>)))
```

11. Restart the OBIEE services from the Enterprise Manager:
  - a. Log into the Enterprise Manager.

- b. Expand the **Target Navigation Menu** and go to **Business Intelligence > biinstance**.
- c. Click the **Availability** tab.
- d. In the **Processes** tab, click **Restart All**. This restarts the BI Instance services.
- e. Log into OBIEE.

## 5.2 Create OBIEE groups and users

### 5.2.1 Create OBIEE groups

1. Log into the Administrator Console for the OBIEE Server at `http://<obiee_server>:<admin_port>/console`.  
*<admin\_port>* is the port where OBIEE WebLogic Enterprise Manager is installed.
2. Click **Security Realms** in the **Domain Structure** panel.
3. Go to **myrealm > Users and Groups**.
4. Click the **Groups** subtab.
5. Click **New** and create the following groups:
  - BIServiceAdministrators
  - BIContentAuthors
  - BIConsumers
6. Click **OK**.

### 5.2.2 Create OBIEE users

Create a user having the same credentials as the application user for OHTR and add them to one of the appropriate groups created in [Section 5.2.1](#).

1. Log into the Administrator Console for the OBIEE Server at `http://<obiee_server>:<admin_port>/console`.  
*<admin\_port>* is the port where OBIEE WebLogic Enterprise Manager is installed.
2. Click **Security Realms** in the Domain Structure panel.
3. Go to **myrealm > Users and Groups**.
4. Click **New**. Create the user with appropriate credentials.
5. Select the user from the list, and click the **Groups** Tab.
6. Assign one of the user groups (created in [Section 5.2.1](#)) to the user.

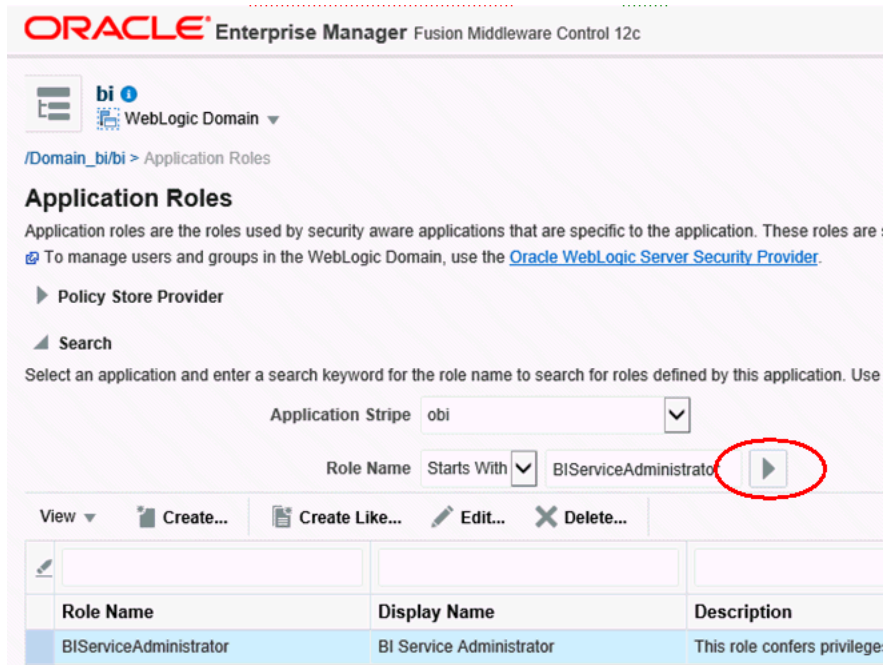
---

**Note:** The user name created for OHTR and OBIEE WebLogic servers should match for access to data based on the VPD policies and other configurations.

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## 5.2.3 Map default OBIEE roles to user groups

1. Log into the OBIEE Enterprise Manager at `http://<obiee_server>:<admin_port>/em`.
2. Click the **Weblogic Domain** drop-down menu.
3. Select **Security > Application Roles**.
4. In the drop-down **Application Stripe** ensure `obi` is entered and click **Search Application Roles** (arrow icon). A list is displayed.



5. Select the row for **BIServiceAdministrator** and click **Edit**.
6. In the **Members** table, click **Add**. The search dialog is displayed.
7. Select **Type as Group**.
8. Click **Principal Name > Starts With**.
9. Enter **BIServiceAdministrators**.
10. Click the arrow button to search.
11. In the **Searched Principals**, select the row for **BIServiceAdministrators**.
12. Click **OK** to add the group as a member.
13. Click **OK** to save the changes.
14. Repeat steps 3-13 to add:
  - Role **BIContentAuthor** to group **BiContentAuthors**
  - Role **BIConsumer** to group **BIConsumers**
15. Log into the Analytics application  
`http://<OBIEE_SERVER>:<ANALYTICS_PORT>/analytics` with the user created in Section 5.2.2.

### Granting BIAuthors to Create New Analysis

1. Log into the Analytics application as the "weblogic" user or a user that is part of the BIServiceAdministrators group.
2. Click **Administration**.
3. Select **Manage Privileges**.
4. Locate the entry **Subject Area: TRC**.
5. Click the BI Service Administrator hyperlink. A dialog box is displayed.
6. Click + to search roles to be added for the BI Content Author.
7. Select the BI Content Author entry and click the arrow button to add it to the Selected Members list.
8. Check whether **Set Permission** is set to **Granted**.
9. Click **OK**.
10. Ensure that the BI Content Author role is selected and click **OK** to reflect the changes for the Subject Area: TRC.
11. Log in as a user who is a part of the group BIContenAuthors and verify that you have access to the TRC subject area.

## 5.2.4 Deploy help files for OBIEE dashboard

1. Copy the file <OHTR\_MTIER\_HOME>/ohf\_products/Weblogic/TrcDashboardHelp.war to the OBIEE server location from where it can be deployed.  
  
For example, create a folder *upload* in the location <OBIEE\_DOMAIN\_HOME>/servers/bi\_server1/.
2. Log into the Administrator Console for the OBIEE Server at http://<OBIEE\_SERVER>:<ADMIN\_PORT>/console.
3. Go to the **Deployments** page.
4. Click **Lock & Edit**.
5. In the **Summary of Deployments** page, click **Install**.
6. Provide the path where TrcDashboardHelp.war is copied. For example, <OBIEE\_DOMAIN\_HOME>\servers\bi\_server1\upload.
7. Select TrcDashboardHelp.war from the location and click **Next**.
8. Select **Install this deployment as an application**.
9. Let the scope remain **Global** and click **Next**.
10. In the **Available targets for TrcDashboardHelp**, select the **Clusters** (for example, bi\_cluster) check box.
11. Click **Next**.
12. Retain the default options in the remaining screens and click **Finish**.
13. Click **Activate Changes**. The following message appears:  
*All changes have been activated. No restarts are necessary.*
14. Verify that the TrcDashboardHelp application is started by going to **Deployments**, and then **Control** tab.

15. Search for the application **TrcDashboardHelp**.
16. If it's not in the **Active State**, select the check box for TrcDashboardHelp and click **Start**, and **Servicing all requests**.
17. Context-sensitive help in the dashboard is available.