

Oracle® Healthcare Precision Medicine

Installation Guide

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Preface

This guide describes how to install Oracle Healthcare Precision Medicine (OHPM).

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Oracle Help Center

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<https://support.oracle.com>. For help with using MOS, see

https://docs.oracle.com/cd/E74665_01/MOSHPTOC/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>

Installation Overview

This chapter describes the installation requirements for OHPM. It contains the following topics:

- [Section 1.1, "Supported Browser"](#)
- [Section 1.2, "Technology Stack"](#)
- [Section 1.3, "Before You Begin"](#)

1.1 Supported Browser

The supported browsers for OHPM are:

- Internet Explorer v11 or higher
- Google Chrome v53 or higher
- Mozilla Firefox v45 or higher
- Safari v9

1.2 Technology Stack

Following is the list of the required technology stack for OHPM:

- Oracle Linux 6.5 or 6.6 (64-bit) operating system (OS)
- Oracle Database 12.1.0.2.0 Enterprise Edition
- Oracle Fusion Middleware Infrastructure 12.2.1.2 with Oracle WebLogic server 12.2.1.2
- Oracle Application Development Framework (ADF) Runtime 12.2.1.2
- Java Development Kit (JDK) 1.8.0 for middleware
- Python 2.6.6 and higher

1.3 Before You Begin

OHPM requires the following pre-installation tasks to be completed:

1. Linux X-windows should be used for the Linux Oracle Universal Installer (OUI) installation (Linux Graphical User Interface).

Installation on the Database Tier

This chapter describes security considerations and the installation process for the database tier. It contains the following topics:

- [Section 2.1, "Prerequisites"](#)
- [Section 2.2, "Installing Oracle Healthcare Precision Medicine on the Database Tier"](#)

2.1 Prerequisites

The following list mentions the prerequisites for installing OHPM on the database tier:

1. Make sure that Oracle® Healthcare Foundation 7.1.1 Data Model is installed on the database server where you will be installing OHPM. For details on installing the OHF Data Model, see the *Oracle Healthcare Foundation Installation Guide 7.1.1*.
2. Apply patch 19710102 available on My Oracle Support.

2.2 Installing Oracle Healthcare Precision Medicine on the Database Tier

Perform the following steps to install OHPM in Typical Mode on the database tier:

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

```
unzip -a OPM_Linux-x64.zip
```

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

```
chmod 755 *
```

6. 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 -local
```
 - If the database server is on a different machine, execute:

```
sh runInstaller.sh -local remote_installation=true
```
 - If the database server is on Exadata, execute:

```
sh runInstaller.sh -local remote_installation=true db_
platform=exadata
```

where, the `-local` option is to install on the local node irrespective of the cluster nodes specified on the installer machine.

The Welcome screen appears.

7. Click **Next**. The Select a Product to Install screen appears.
8. Select the **Oracle Healthcare Precision Medicine DB Tier 1.1.0.0.0** option and click **Next**.
The Specify Home Details screen appears.
9. Enter the installation home name and location.
10. Click **Next**. The Verify Installation Prerequisites screen appears.
11. Verify if all the prerequisites are met before proceeding.
12. Click **Next**. The Oracle Client Home Configuration screen appears.
13. Specify the Oracle client home path. The installer validates this path.
14. Click **Next**. The DB Connection screen appears.
15. Enter values for the following fields:
 - 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 password
 - Sys password
16. Click **Next**. The Schema Details screen appears.
17. Enter values for the following fields:
 - Omics data bank schema name (odb)
 - Omics data bank schema password
 - Cohort data mart schema name (cdm)
 - Cohort data mart schema password
 - Enterprise schema name
 - Enterprise schema password
18. Click **Next**. The Job Engine and Service Schema details screen appears.
19. Enter values for the following fields:
 - Job engine schema name
 - Job engine schema password
 - Services schema name
 - Services schema password
20. Click **Next**. The OPM Database details screen appears.
21. Enter values for the following fields:
 - OPM schema name

- OPM schema password
 - Default tablespace for OPM schema
 - LOB tablespace for OPM schema
 - Index tablespace for OPM schema
 - Temp tablespace for OPM schema
22. Click **Next**. The OPM Database Verification screen appears.
 23. Verify all the details. To make any changes, click **Back**.
If all the details are correct, click **Next**. The Tablespace Data File Location screen appears.
 24. Specify the location of the tablespace data files. This is the directory on the database server where data files are created during installation.
 25. Click **Next**. The Summary screen appears.
 26. Click **Install**.
 27. After the installation is complete, the End of Installation screen appears.
 28. Click **Exit** after reviewing the installation information.
 29. At the confirmation prompt, click **Yes** to exit the installer.
 30. Review the generated installation log files for errors. Contact Oracle support, if necessary, to resolve any errors.

Installation on the Middle Tier

This section describes the installation and configuration steps for the middle tier. This chapter includes the following topics:

- [Section 3.1, "Prerequisites"](#)
- [Section 3.2, "Installation Log Files"](#)
- [Section 3.3, "Installing Oracle Healthcare Precision Medicine on the Middle Tier"](#)
- [Section 3.4, "Troubleshooting"](#)

3.1 Prerequisites

The following list points out the prerequisites for installing OHPM on the middle tier. Check that these are completed before you start installation.

- JDK 1.8 is installed.
- Oracle Fusion Middleware Infrastructure (FMW) 12.2.1.2 is installed using JDK 1.8.
- Oracle Fusion Middleware is installed in the same system path on all machines in a distributed domain configuration.
- Oracle® Healthcare Foundation middle tier is installed in the same middleware.
- OHPM database schemes are installed.

3.2 Installation Log Files

While installing Oracle Healthcare Foundation Data pipeline services, the installer generates the following log files:

- `installActions<timestamp>.log` - this log file records the action of the installer and can be used to diagnose any installer issues.
- `oraInstall<timestamp>.out` - this file records the output of all the scripts run by the installer.
- `oraInstall<timestamp>.err` - this file records the errors from all the scripts run by the installer.

The log files are time stamped and each installation session creates a new log file.

On a Linux machine, the log files are located at `$ORACLE_BASE/oraInventory/logs`. For example, `/u01/app/oraInventory/logs`.

The installation summary with all parameters provided for the installer will be available at:

```
<INSTALL_HOME>/opmmt/ Oracle_Healthcare_Precision_Medicine_Middle_Tier_1.1.0.0.0_install_<timestamp>.html
```

While reporting any problems that might occur during OHPM installation, make sure that you include all the above log files in your report.

3.3 Installing Oracle Healthcare Precision Medicine on the Middle Tier

Perform the following steps to install OHPM on the middle tier.

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

```
unzip -a opm_Linux-x64.zip
```

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

```
chmod 755 *
```

6. Start the Oracle Universal Installer (OUI) using the following command. WebLogic should be installed on the same machine where installer is running.

```
./runInstaller
```

The Welcome screen appears.

7. Click **Next**. The Select a Product to Install screen appears.
8. Select the **Oracle Healthcare Precision Medicine Middle Tier 1.1.0.0.0** option and click **Next**.

The Specify Home Details screen appears.

9. Enter the installation home name and location.
10. Click **Next**. The Verify Install Prerequisites screen appears.
11. Verify if all the prerequisites are met before proceeding.
12. Click **Next**. The Java Home configuration screen appears.
13. Specify the Java home path. The installer validates this path.
14. Click **Next**. The Oracle Fusion Middleware Home screen appears.
15. Specify the Fusion Middleware home path. The installer validates this path.
16. Click **Next**. The AdminServer configuration screen appears.
17. Enter values for the following fields:
 - Listen address
 - Listen Port
 - SSL Listen Port
 - Username - WebLogic administrator user

- Password - WebLogic administrator password
 - Verify password
18. Click **Next**. The OHPM Schema Details configuration screen appears.
 19. Enter values for the following fields using the OHPM schema details created while installing OHPM on the database tier.
 - Database host name
 - Database port
 - Service name
 - OHPM schema name
 - OHPM schema password
 20. Click **Next**. The EMR Keystore Configuration screen appears.
 21. If you want to publish genomic reports to EMR from OHPM application, select **Yes**.
 22. Enter the location of the SSL certificate to be used for communicating with EMR.

Note: After installation, specify the connection details for EMR using the EMR configuration API available at <http://docs.oracle.com/health-sciences/opm-11/admin-guide/emrconfig.htm#OHPAG445>.

23. Click **Next**. The Network Proxy Configuration screen appears.
24. Select **Yes**.
25. Click **Next**. The Network Proxy Configuration details screen appears. Network proxy configuration is required to connect to OHPM Service Providers.
26. Enter values for the following fields:
 - HTTPS proxy host
 - HTTPS proxy port
27. Click **Next**. The Summary screen appears.
28. Verify all the details. To make changes, click **Back**.
29. Click **Install**.
30. After the installation is complete, the End of Installation screen appears.
31. Click **Exit** after reviewing the installation information.
32. At the confirmation prompt, click **Yes** to exit the installer.
33. Review the generated installation log files for errors. Contact Oracle support, if necessary, to resolve any errors.

3.4 Troubleshooting

If the managed servers fail due to the following errors, start the servers manually from the Admin Console.

- Critical subsystem DatabaseLessLeasing has failed. Setting server state to FAILED. Reason: Server is not in the majority cluster partition>
- Server health failed. Reason: health of critical service 'DatabaseLessLeasing' failed.
- If the installer fails due to the time taken by the node manager process to start, check the machine network configuration to make sure other processes are listening on the same port, and the user running the installer has the required file system permissions.
- If the AdminServer fails to start due to the node manager process not being available, verify if the node manager process is still running.
- If an incorrect database configuration is provided, modify it from the WebLogic Admin console.

Frequently Asked Questions

This section deals with frequently asked questions during installation. It contains the following sections:

- [Increasing the Connection Pool Size](#)
- [Application Running Out of Connections](#)
- [Parallelization](#)

A.1 Increasing the Connection Pool Size

Perform the following steps to increase the connection pool size:

1. Log into the WebLogic console.
2. Navigate to **Services > Data Sources**.
3. Click the data source for which you want to increase the connection pool size.
4. Navigate 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.

A.2 Application Running Out of Connections

- This issue can be resolved by increasing the number of connections as mentioned in [Section A.1](#).
- 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* in *Oracle® Fusion Middleware Configuring and Managing JDBC Data Sources for Oracle WebLogic Server*.

To optimize performance, Oracle recommends that you update the heap memory and fetch size of the WebLogic server:

- Exadata
Heap memory -15GB, Fetch Size- 150
- Non Exadata
Heap memory - 8 GB, Fetch Size - 100

A.3 Parallelization

For details on parallelization, see Appendix A, Parallelization in the *Oracle Healthcare Translational Research Installation Guide* Release 3.2 available at

<http://docs.oracle.com/health-sciences/translational-research-32/HTRIG/dop.htm#CHDCHFIF>

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