Oracle Life Sciences Empirica Installation and Upgrade Instructions





Oracle Life Sciences Empirica Installation and Upgrade Instructions, Release 9.2.3

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Preface

This preface contains the following sections:

- Documentation accessibility
- Related resources
- Access to Oracle Support
- Additional copyright information

Documentation accessibility

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Related resources

All documentation and other supporting materials are available on the Oracle Help Center.

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Contact our Oracle Customer Support Services team by logging requests in one of the following locations:

- English interface Customer Support Portal (https://hsgbu.custhelp.com/)
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Product overview

- How to use this document
- Assumptions
- Physical configuration options
- Components of the installation package

How to use this document

This document contains the procedures that guide you through both the installation and upgrade processes.

Some of the sections in the chapters that follow are either installation-specific or upgrade-specific. Look for "installation only" or "upgrade only" in the section title. Procedures without these labels are applicable to all upgrades and installations.

Assumptions

To complete the procedures in this guide, you should be familiar with the following:

- Setting Linux file permissions
- Administering Oracle WebLogic Server
- Configuring Linux services
- Setting up and configuring the Oracle Database software

Physical configuration options

The Oracle Empirica Signal software is typically installed in a two-tier configuration, using separate database server and application server machines.

The provisioning and basic setup of the two systems is outside the scope of this document.

Components of the installation package

File	Description
Signal_Install-9_2_3_0_XXX.tar.gz	Components for installing the Oracle Empirica Signal software.
Signal-9_2_3_0_XXX.zip	Build that you install, where XXX is the build number.
Signal-9_2_3_0_XXX-Database.zip	Scripts for setting up the Oracle Empirica Signal database account.
TopicsService-9_2_3_0_XXX.zip	Components for installing the Empirica Topics software.

File	Description
RGPS_9_2_3_0_XXX.tar.gz	RGPS add-on package for R.
Data_Stub.zip	Components for installing the small data account needed for Oracle Empirica Signal standard reports.
Signal-9_2_3_0_XXX-OBIEE.zip	Scripts for installing JADER Signal Management. Oracle Business Intelligence/Oracle Analytics Server for Topics reporting.
Signal-9_2_3_0_xxx-custom.zip	Scripts for installing the custom user interfaces for interactive reports.
Update_AM_for_Signal_9_2_3_0_XXX.zip	Scripts for upgrading Oracle Argus Mart for use by Oracle Empirica Signal.
Argus_Prep_3_0_0_2_XXX.zip	Scripts for installing Argus Signal Management.
AERS_Prep_3_0_0_2_XXX.zip	Scripts for installing Interactive AERS Signal Management.
JADER_Prep_3_0_0_1_xxx.zip	Scripts for installing JADER Signal Management.
VAERS_Prep_3_0_0_3_XXX.zip	Scripts for installing VAERS Signal Management.
IQ_Test.doc	Document for installation qualification information.
OQ_Test.doc	Document for operational qualification information.
UQ_Test.doc	Document for upgrade qualification information.



Plan your installation

- Prerequisites to upgrade (upgrade only)
 - You should be running Oracle Empirica Signal release 9.1 or later before upgrading to release 9.2.3.
- Migrate the database (upgrade only)
 - If you are migrating your database from Microsoft Windows to Linux, or upgrading from an earlier version of the Oracle Database to version 19c, back up your database first.
- Information to collect before you begin
 Before you begin, collect the following information about the setup of the database and application servers. You will need this information for the installation or upgrade.

Prerequisites to upgrade (upgrade only)

You should be running Oracle Empirica Signal release 9.1 or later before upgrading to release 9.2.3.

You can upgrade from releases 9.1.0.x, 9.2.0.x, 9.2.1.x, or 9.2.2.x. to release 9.2.3.

If upgrading from versions before 9.0, please use the 9.0 upgrade guide as first step.

Migrate the database (upgrade only)

If you are migrating your database from Microsoft Windows to Linux, or upgrading from an earlier version of the Oracle Database to version 19c, back up your database first.

Work with a database administrator to migrate the contents of your database to the new Oracle Database.

Information to collect before you begin

Before you begin, collect the following information about the setup of the database and application servers. You will need this information for the installation or upgrade.

- Database server
 - You must collect information about the database server.
- Application server
 - You must collect information about the application server.

Database server

You must collect information about the database server.

- TNSNAMES entry for the database.
- Service name and SID for the database.
- System and sys password for the database.

- Time zone setting of your database so you can set the Oracle WebLogic Server instance to the same time zone.
- The location of the data files for the instance, if you plan to create the tablespaces in the same location. For example: '/u01/app/oracle/oradata/empcdb/signalpdb/'

For installations, be prepared to provide a password for the Oracle Empirica Signal database account that will be created in these steps. If you are installing Oracle Empirica Topics, also be prepared to provide a password for the topic_workflow database account that will be created.



The password must not contain a dollar sign symbol (\$).

For upgrades, be prepared to provide the account name and passwords for the existing Oracle Empirica Signal database account and tablespace name used by the account. If you have Oracle Empirica Topics installed, also be prepared to provide the account name and password for the existing topic workflow database account.

Application server

You must collect information about the application server.

JDK installation location, such as:

```
/usr/java/jdk1.8.x xx
```

- The following information about the Oracle client:
 - Oracle base location, such as:

```
/u01/app/oracle
```

Oracle home location, such as:

```
/u01/app/oracle/product/19.3.0
```

- The following information about Oracle WebLogic Server:
 - Installation location, such as:

```
/u01/app/oracle/product/Middleware12c/
```

URL for the Oracle WebLogic Server Administration Console, such as:

```
https://<servername>:7002/console
```

URL for Oracle Enterprise Manager, such as:

```
https://<servername>:7002/em
```

- User name and password of an Oracle WebLogic Server administrator.
- For single sign-on (SSO) installations, the following information:
 - Native login port number to use for initially changing the Oracle Empirica Signal admin password.
 - Port number used for normal SSO Oracle Empirica Signal connections on the server.
 - SSO logout URL.
 - SSO header, which contains the user name.
 - Session timeout value for the single sign-on setup in the organization.



Prepare the application server

Required privileges for the database server

You must have access to a user account that allows the user to start and stop the Oracle database.

Required privileges for the application server

You must have access to the following accounts on the application server:

Set the default file creation umask

You modify the default file creation umask so that, by default, users in your group have read-only access to files you create. Users outside your group have no access to the files you create.

Unpack the installation files into the installation directory

The installation directory stores Oracle Empirica Signal components during the installation process.

Add the database TNSNAMES entry

You add an entry to the tnsnames.ora file on the application server to configure the connection to the Oracle database.

Set up the application database account (installation only)

Perform these steps using the non-privileged user account on the application server.

Set up the Topic Workflow database account (optional, installation only)

You create a Topic Workflow tablespace and user account to enable the Oracle Empirica Topics feature.

Set up the test data database account (installation only)

This procedure is optional and needed only if you plan to run the OQ test.

Apply upgrade scripts to Oracle Empirica Signal 9.0.x schemas (upgrade only)
 Schema upgrade is incremental. If you are upgrading from a version prior to Signal 9.2.2.x, multiple scripts need to be executed.

Upgrade Signal Management configuration schemas

Upgrade these configuration schemas.

Install MGPS

Install the MGPS program that supports Multi-item Gamma Poisson Shrinker (MGPS) data mining. For more information, see the *User Guide and Online Help*.

Install or upgrade the RGPS add-on package to the R library

If you have R version 4.0.5 installed, you can optionally install the RGPS add-on package to enable Regression-adjusted Gamma Poisson Shrinker (RGPS) computations in Multiitem Gamma Poisson Shrinker (MGPS) data mining runs.

Install and configure the X Windows Virtual Frame Buffer (Xvfb) (new installation)
 Variance II X Windows Virtual Frame Buffer (Xv fb) to another months in Orgale Frame

You install X Windows Virtual Frame Buffer (Xvfb) to enable graphs in Oracle Empirica Signal.

Modify the default Oracle WebLogic Server configuration files

Perform these steps using the non-privileged user account on the application server.

 Configure the Oracle Empirica Signal and Oracle Empirica Topics Oracle WebLogic Server instances

You must configure the Oracle WebLogic Server instances.

Start the Oracle WebLogic Server and the Node Manager
 Perform these steps using the non-privileged user account on the application server.

Required privileges for the database server

You must have access to a user account that allows the user to start and stop the Oracle database.

This account should not have sudo privileges.

This document refers to this user account as the non-privileged user account on the database server.

Required privileges for the application server

You must have access to the following accounts on the application server:

 A user account that allows the user to start and stop the Oracle Empirica Signal Oracle WebLogic Server instance.

This account should not have sudo privileges.

This document refers to this user account as the non-privileged user account on the application server.

Unless otherwise specified in this document, the non-privileged user should perform all activities.

A user account that has sudo privileges. This user executes certain steps as root.
 This document refers to this user account as the privileged user account on the application server.

Set the default file creation umask

You modify the default file creation umask so that, by default, users in your group have readonly access to files you create. Users outside your group have no access to the files you create.

Perform these steps using the non-privileged user account on the application server.

1. Navigate to your home directory, for example:

\$ cd ~

- 2. Using a text editor, open the .login file. If the file does not exist, you will create it.
- Add the following text to the file:

umask 027

4. Save and close the file.



Unpack the installation files into the installation directory

The installation directory stores Oracle Empirica Signal components during the installation process.

Perform these steps using the non-privileged user account on the application server.

Note:

If you have previously installed Oracle Empirica Signal 9.1.0.x, 9.2.0.x, 9.2.1.x ,or 9.2.2.x on the same application server, rename the old $Signal_Install$ directory before executing the steps below. For example, change the directory name to $Signal_Install_old$.

1. Unpack the Signal_Install-9_2_3_0_XXX.tar.gz file into a directory that is accessible to the Oracle WebLogic Server software, for example:

```
$ cd /u01/stage
$ tar xvf /u01/stage/Signal Install-9 2 3 0 XXX.tar.gz
```

The /u01/stage/Signal Install directory is created.

Note:

In this document, <INSTALL_DIR> refers to the directory created in this step. The document assumes that you are installing to this directory.

2. Unpack the contents of the Signal-9_2_3_0_XXX.zip file into the directory, for example:

```
$ unzip Signal-9_2_3_0_XXX.zip -d /u01/stage/Signal_Install/Signal
```

3. If you use Oracle Empirica Topics, unpack the TopicsService-9_2_3_0_XXX.zip file into the TopicsService subdirectory in the installation directory, for example:

```
$ unzip TopicsService-9_2_3_0_XXX.zip -d
/u01/stage/Signal Install/TopicsService
```

Note:

If you have previously installed Oracle Empirica Signal 9.1.0.x, 9.2.0.x, 9.2.1.x or 9.2.2.x on the same application server, before executing the steps below, rename the old Database directory. For example, change its name to Database old.

- 4. Unpack the Signal-9 2 3 0 XXX-Database.zip file:
 - a. Create a Database directory:

```
$ mkdir /u01/stage/Database
```



b. Unpack the contents of the Signal-9_2_3_0_XXX-Database.zip file into the directory, for example:

\$ unzip Signal-9 2 3 0 XXX-Database.zip -d /u01/stage/Database

Add the database TNSNAMES entry

You add an entry to the tnsnames.ora file on the application server to configure the connection to the Oracle database.

If your tnsnames.ora file does not contain an entry for the database server, perform these steps using the non-privileged user account on the application server.

1. Navigate to the <ORACLE_HOME>/network/admin directory, for example:

```
$ cd <ORACLE HOME>/network/admin
```

2. If the tnsnames.ora file does not exist in the directory, create the file.

For more information, see the Oracle Database Online Documentation.

- 3. Using a text editor, open the tnsnames.ora file.
- 4. Add an entry that points to the database server using information from the tnsnames.ora file on the database server.



In this document, $\texttt{<TNS_NAME>}$ refers to the name you assigned in the entry created in this step.

Set up the application database account (installation only)

Perform these steps using the non-privileged user account on the application server.

Navigate to the /u01/stage/Database directory, for example:

```
$ cd /u01/stage/Database
```

- 2. Review the 1 create webvdme tablespaces linux.sql file:
 - a. Using a text editor, open the 1_create_webvdme_tablespaces_linux.sql file, for example:

```
$ vi 1_create_webvdme_tablespaces_linux.sql
```

- b. Locate the datafile path variable.
- c. To create Oracle Empirica Signal data files in a location other than the default location of your database, specify the location as the value of the datafile_path variable, for example:

```
DEFINE datafile path = '/u01/app/oracle/oradata/empcdb/signalpdb'
```

d. If Transparent Data Encryption is desired, uncomment the line (remove '--' from the beginning)

```
DEFINE encryption = ENCRYPTION DEFAULT STORAGE (ENCRYPT)
```

Save and close the file.



- 3. Create the Oracle Empirica Signal tablespace:
 - a. Execute the 1_create_webvdme_tablespaces_linux.sql script as the Oracle system user, for example:

```
$ sqlplus system@<TNS_NAME> @1_create_webvdme_tablespaces_linux.sql
```

A password prompt appears.

- **b.** Enter the Oracle **system** account password.
- 4. Create the Oracle Empirica Signal database user account and schema:
 - a. At the SQL*PLUS prompt, execute the 2_create_webvdme_oracle_user.sql script as the Oracle sysdba user:

```
$ sqlplus sys@<TNS_NAME> as sysdba @2_create_webvdme_oracle_user.sql
A password prompt appears.
```

b. Enter the Oracle sys account password.

A second password prompt appears.

- c. Enter a password for the Oracle Empirica Signal database account.
- d. Reenter the password.
- 5. Populate the application schema:
 - a. At the **SQL*PLUS** prompt, execute the 3_create_all.sql script as the Oracle Empirica Signal database user, for example:

```
$ sqlplus webvdme@<TNS_NAME> @3_create_all.sql
A password prompt appears.
```

b. Enter the Oracle Empirica Signal database account password that you created in a previous step.

Set up the Topic Workflow database account (optional, installation only)

You create a Topic Workflow tablespace and user account to enable the Oracle Empirica Topics feature.



Do not perform this procedure if you do not use Oracle Empirica Topics.

For more information, see the User Guide and Online Help.

Perform these steps using the non-privileged user account on the application server.

1. Navigate to the /u01/stage/Database directory, for example:

```
$ cd /u01/stage/Database
```

- 2. Create the topic workflow database user account:
 - a. Execute the create_topics_oracle_user.sql script as the Oracle system user, for example:

```
$ sqlplus system@<TNS_NAME> @create_topics_oracle_user.sql
A password prompt appears.
```



b. Enter the Oracle **system** account password.

A second password prompt appears.

- c. Enter a password for the topic workflow database account.
- d. Reenter the password.
- 3. Create sample topic tables:
 - a. Execute the create_sample_topics_tables.sql script as the topic workflow database user, for example:

```
\ sqlplus topic_workflow@<TNS_NAME> @create_sample_topics_tables.sql A password prompt appears.
```

- b. Enter the topic workflow account password that you specified in a previous step.
- Create sample topics:
 - a. Execute the populate_sample_topics_tables.sql script as the topic workflow database user, for example:

```
$ sqlplus topic_workflow@<TNS_NAME> @populate_sample_topics_tables.sql You are prompted to enter a password.
```

b. Enter the topic workflow account password that you specified in Step 2.

Set up the test data database account (installation only)

This procedure is optional and needed only if you plan to run the OQ test.

Perform these steps using the non-privileged user account on the application server.

Navigate to the /u01/stage/Database directory, for example:

```
$ cd /u01/stage/Database
```

If the TEST IQOQ database account exists, drop the account:

a. Execute the **drop user** command as the **system** user, for example:

```
$ sqlplus system@<TNS_NAME>
A password prompt appears.
```

b. Enter the Oracle **system** account password.

```
SQL> drop user TEST IQOQ cascade;
```

- c. Exit SQL*PLUS.
- 2. Create the **TEST_IQOQ** database user account and tables:
 - a. Execute the 4_create_test_iqoq_oracle_user.sql script as the Oracle system user, for example:

```
\ sqlplus system@<TNS_NAME> @4_create_test_iqoq_oracle_user.sql A password prompt appears.
```

b. Enter the Oracle **system** account password.

A second password prompt appears.

- c. Enter a password for the **TEST_IQOQ** database account.
- d. Reenter the password.
- Populate the TEST_IQOQ tables:



a. Execute the 5_populate_test_iqoq.sql script as the test_iqoq database user, for example:

```
$ sqlplus TEST_IQOQ@<TNS_NAME> @5_populate_test_iqoq.sql
A password prompt appears.
```

b. Enter the **TEST_IQOQ** database account password.

Apply upgrade scripts to Oracle Empirica Signal 9.0.x schemas (upgrade only)

Schema upgrade is incremental. If you are upgrading from a version prior to Signal 9.2.2.x, multiple scripts need to be executed.

Perform these steps using the non-privileged user account on the application server.

- Perform the following steps to upgrade database schemas to 9.1.0.
 - a. Navigate to the Database folder, for example:

```
$ cd /u01/stage/Database/Signal9.1.0.0
```

- b. Using a text editor, open the update_9_0_to_9_1.sql file.
- c. Update WEBVDME ACCOUNT and tablespace name to actual value.
- d. As the SYS database user, execute the update_9_0_to_9_1.sql script to update the schema from 9.0.x to 9.1, for example:

```
$ sqlplus SYS@<TNS_NAME> as sysdba @update_9_0_to_9_1.sql A password prompt appears.
```

- e. Enter the SYS database account password.
- f. Once the execution completes, verify update_9_0_to_9_1.log.
- Perform the following steps to upgrade database schemas to 9.2.0.
 - a. Navigate to the Database folder, for example:

```
$ cd /u01/stage/Database
```

- b. Using a text editor, open the update 9 1 to 9 2.sql file.
- c. Update WEBVDME USER and TOPIC WORKFLOW USER to actual value.
- d. As the SYS database user, execute the update_9_1_to_9_2.sql script to update the schema from 9.1.0.x to 9.2, for example:

```
\ sqlplus SYS@<TNS_NAME> as sysdba @update_9_1_to_9_2.sql A password prompt appears.
```

- e. Enter the SYS database account password.
- f. Once the execution completes, verify that there are no errors in the log files update_9_1_to_9_2.log and update_all_smcs.log.



When verifying the logs, ignore any messages caused by dropping an object that does not exist, such as *User or role 'DATA ADMIN' does not exist.*

3. Perform the following steps to upgrade database schemas to 9.2.1.



a. Navigate to the Database folder, for example:

```
$ cd /u01/stage/Database
```

b. As the WEBVDME database user, execute the update_9_2_to_9_2_1.sql script to update the schema from 9.2.0.x to 9.2.1, for example:

```
$ sqlplus webvdme@<TNS_NAME> @update_9_2_to_9_2_1.sql A password prompt appears.
```

- c. Enter the WEBVDME database account password.
- d. Once the execution completes, verify that there are no errors in the log files update_9_2_to_9_2_1.log and update_all_smcs.log.
- Perform the following steps to upgrade database schemas to 9.2.2.
 - a. Navigate to the Database folder, for example:

```
$cd /u01/stage/Database
```

- b. Using a text editor, open the update 9 2 1 to 9 2 2.sql file.
- c. Update WEBVDME USER to actual value.
- d. As the SYS database user, execute the update_9_2_1_to_9_2_2.sql to update the schema from 9.2.1.x to 9.2.2, for example:

```
$sqlplus SYS@<TNS NAME> as sysdba @update 9 2 1 to 9 2 2.sql
```

A password prompt appears.

- e. Enter the SYS database account password.
- f. Once the execution completes, verify that there are no errors in any of the log files, such as update 9_2_1_to_9_2_2.log.
- Perform the following steps to upgrade database schemas to 9.2.3.
 - a. Navigate to the Database folder, for example:

```
$cd /u01/stage/Database
```

- b. Using a text editor, open the update 9_2_2_to_9_2_3.sql file.
- c. Update WEBVDME USER to actual value.
- d. As the SYS database user, execute the update_9_2_2_to_9_2_3.sql to update the schema from 9.2.2.x to 9.2.3, for example:

```
$sqlplus SYS@<TNS NAME> as sysdba @update 9 2 2 to 9 2 3.sql
```

A password prompt appears.

- e. Enter the SYS database account password.
- f. Once the execution completes, verify that there are no errors in any of the log files, such as update 9_2_2_to_9_2_3.log.
- 6. If you use the Oracle Empirica Topics feature, perform the following steps to upgrade the Oracle Empirica Topics schema:
 - If you are upgrading from Signal 9.0.x :
 - a. Using a text editor, open the update two 9 0 to 9 1.sql file.
 - b. Update WEBVDME ACCOUNT and TOPIC WORKFLOW USER.
 - c. Enter the SYS database account password.
 - d. Once the execution completed, verify update two 9 0 to 9 1.log.



- If you are upgrading from Signal 9.0.x, or 9.1.x:
 - a. Using a text editor, open the update_twc_9_1_to_9_2.sql file.
 - b. Update WEBVDME_ACCOUNT and TOPIC_WORKFLOW_USER.
 - c. As the SYS database user, execute the update_twc_9_1_to_9_2.sql script to update TWC schema from 9.1.x to 9.2, for example:

```
$ sqlplus SYS@<TNS NAME> as sysdba @update twc 9 1 to 9 2.sql
```

A password prompt appears.

- d. Enter the **SYS** database account password.
- e. Once the execution completed, verify update twc 9 1 to 9 2.log.

Upgrade Signal Management configuration schemas

Upgrade these configuration schemas.

- Interactive Signal Management Configuration
 If using interactive signal management provided by Oracle, refer to the specific interactive signal management instructions.
- Scripted Signal Management Configuration
 Follow these directions to upgrade the Scripted Signal Management Configuration from 9.1.x or a release prior to 9.2.3.

Interactive Signal Management Configuration

If using interactive signal management provided by Oracle, refer to the specific interactive signal management instructions.

Upgrade Argus Mart signal configuration, as described in Oracle Argus Mart Data and Signal Management for Use with Oracle Empirica Signal Installation and Upgrade Instructions.

Upgrade FDA AERS signal configuration, as described in AERS Signal Management for Use with Oracle Empirica Signal Installation and Upgrade Instructions.

Upgrade VAERS signal configuration, as described in VAERS Signal Management for Use with Oracle Empirica Signal Installation and Upgrade Instructions.

Scripted Signal Management Configuration

Follow these directions to upgrade the Scripted Signal Management Configuration from 9.1.x or a release prior to 9.2.3.

1. Navigate to the Database directory, for example:

```
$ cd /u01/stage/Database
```

2. Start sqlplus as the Oracle Empirica Signal database user, for example:

```
$ sqlplus webvdme@<TNS NAME>
```

- 3. When prompted, enter the password.
- 4. Start logging, for example:

```
SQL> spool <log file name>
```

5. Execute the create_product_field_tables.sql script, for example:



```
SQL> @create product field tables.sql <SMC Id>
```

- **6. Execute the** create_configurable_alerts_tables.sql
 - script, for example: SQL> @create configurable alerts tables.sql <SMC Id>
- 7. Execute the populate signalcodelist table.sql
 - script, for example: SQL> @populate signalcodelist table.sql <SMC Id>
- 8. Execute the update signaldrugoverview view.sql script, for example:

```
SQL> @update signaldrugoverview view.sql <SMC Id>
```

Exit sqlplus, for example:

```
SQL> quit
```

If upgrading from a release prior to 9.2.3, upgrade the Scripted Signal Management Configuration

- 1. Copy 06_create_drugoverview_view.sql file from Database/update_ssm folder into the sigmgt/db subfolder of the Scripted Signal Management software directory. For instance, if Scripted Signal Management software is installed in /u01/stage/projects/vaers_prep directory, run the following command: \$ cp -f update_ssm/06_create_drugoverview_view.sql
 ../projects/vaers_prep/sigmgt/db
- 2. Edit the 06_install_signal_tables.sh file in the /u01/stage/projects/ vaers_prep/sigmgt directory and move the lines in Block 1 to after the lines in Block 2. This should be done for each Scripted Signal Management configuration. Block 1:

Block 2:

Note:

If you have questions regarding upgrading Scripted Signal Management configurations, contact Oracle Support.

Install MGPS

Install the MGPS program that supports Multi-item Gamma Poisson Shrinker (MGPS) data mining. For more information, see the *User Guide and Online Help*.

The MGPS file is included with the Oracle Empirica Signal installation files.

Perform these steps using the non-privileged user account on the application server.

- 1. For a new install, create a bin directory to store the MGPS file, if it doesn't already exist. For example:
 - \$ mkdir -p /u01/app/oracle/product/Signal/bin
- 2. Navigate to the <INSTALL DIR>/Signal/WEB-INF/classes directory, for example:
 - \$ cd /u01/stage/Signal Install/Signal/WEB-INF/classes
- 3. Copy the MGPS file to the /bin directory, for example:
 - \$ cp -f MGPS /u01/app/oracle/product/Signal/bin
- **4.** Verify that the non-privileged user account on the application server has execute permissions on the MGPS file.
 - \$ chmod u+x /u01/app/oracle/product/Signal/bin/MGPS

Note

Remember the path to the MGPS file. You will set it in the listener.properties file, in Set up the listener.properties file.

Install or upgrade the RGPS add-on package to the R library

If you have R version 4.0.5 installed, you can optionally install the RGPS add-on package to enable Regression-adjusted Gamma Poisson Shrinker (RGPS) computations in Multi-item Gamma Poisson Shrinker (MGPS) data mining runs.

For more information, see the *User Guide and Online Help*. The RGPS add-on package is included with the Oracle Empirica Signal installation files.

For new installations or for upgrading from previous versions that already have the RGPS addon package installed and have been updated to R version 4.0.5, perform these steps using the privileged user account on the application server.

- 1. In a command shell, navigate to the directory that contains RGPS 9 2 3 0 XXX.tar.gz.
- 2. Execute the following command:

\$ sudo R CMD INSTALL RGPS 9 2 3 0 XXX.tar.gz





If you are upgrading Oracle Empirica Signal and want to continue using R 3.6.1 and RGPS with Oracle Empirica Signal 9.2.3, contact Oracle Support.

Install and configure the X Windows Virtual Frame Buffer (Xvfb) (new installation)

You install X Windows Virtual Frame Buffer (Xvfb) to enable graphs in Oracle Empirica Signal.

Prerequisites:

- Yum is installed and configured to use the appropriate configuration file.
- Your system can connect to the yum repositories.

Perform these steps using the privileged user account on the application server.

- 1. Determine whether Xvfb is installed:
 - a. Execute the following command in a command shell:

```
$ which Xvfb
```

If a path to Xvfb appears, Xvfb is already installed. Alternatively, Xvfb is not installed.

- b. If Xvfb is already installed, skip to Step 3.
- Install Xvfb:
 - a. Enter the following command to initiate the installation:

```
$ sudo yum install Xvfb
```

A password prompt might appear.

b. If a password prompt appears, enter the password for the privileged user account on the application server.

A confirmation prompt appears.

- c. Enter Y, and press Enter.
- 3. Execute the following **enable** and **daemon-reload** commands to enable Xvfb:

```
$ sudo su - root
# cp <INSTALL_DIR>/service/xvfb.service
/usr/lib/systemd/system
# cd /usr/lib/systemd/system
# systemctl enable xvfb.service
# systemctl daemon-reload
```

where <INSTALL_DIR> is the Oracle Empirica Signal installation directory. For more information, see Unpack the installation files into the installation directory.

4. Execute the **start** command to start Xvfb, for example:

```
# systemctl status xvfb.service
# systemctl start xvfb.service
```



The following response appears:

Started Start Virtual Framebuffer to support generation of Empirica Signal graphs...

5. Enter **exit** to terminate your session as the root user.

Modify the default Oracle WebLogic Server configuration files

Perform these steps using the non-privileged user account on the application server.

1. Navigate to the Oracle WebLogic Server domain bin directory, for example:

```
$ cd /u01/app/oracle/product/Middleware12c/user projects/domains/empirica/bin
```

- 2. Edit the setDomainEnv.sh file:
 - a. Using a text editor, open the setDomainEnv.sh file.
 - **b.** At the end of the file, add the following lines:

```
# Local Customization
export TZ=UTC
export LANG=en_US.UTF-8
export DISPLAY=:99.0
```

- c. Save and close the file.
- 3. Make the edits below in setStartupEnv.sh:
 - a. Using a text editor, open the file.
 - **b.** Search for lines containing the following text:

```
com.oracle.db.jdbc7-dms.jar
```

c. Use the hash character (#) to comment out each line, and then replace each line as follows:

```
if [ "${PRE_CLASSPATH}" != "" ] ; then
    #PRE_CLASSPATH="${PRE_CLASSPATH}${CLASSPATHSEP}$
{COMMON_COMPONENTS_HOME}/modules/features/com.oracle.db.jdbc7-dms.jar"
    PRE_CLASSPATH="${PRE_CLASSPATH}${CLASSPATHSEP}${ORACLE_HOME}/jdbc/lib/
ojdbc8.jar"
    export PRE_CLASSPATH
else
    #PRE_CLASSPATH="${COMMON_COMPONENTS_HOME}/modules/features/
com.oracle.db.jdbc7-dms.jar"
    PRE_CLASSPATH="${ORACLE_HOME}/jdbc/lib/ojdbc8.jar"
    export PRE_CLASSPATH
```

d. Search for lines containing the following text:

```
java.awt.headless=true
```

e. Use the hash character (#) to comment out each line, and then replace each line with a copy of the original, but without -Djava.awt.headless=true. For example:

```
# EXTRA_JAVA_PROPERTIES="${EXTRA_JAVA_PROPERTIES} -
Dem.oracle.home=/u01/app/oracle/product/Middleware12c/em -
```

```
-DINSTANCE_HOME=/scratch/u01/app/oracle/product/Middleware12c/
user_projects/domains/empirica -Djava.awt.headless=true -
Doracle.sysman.util.logging.mode=dual_mode"

EXTRA_JAVA_PROPERTIES="${EXTRA_JAVA_PROPERTIES} -

Dem.oracle.home=/u01/app/oracle/product/Middleware12c/em -
DINSTANCE_HOME=/u01/app/oracle/product/Middleware12c/user_projects/domains/empirica -
```

Doracle.sysman.util.logging.mode=dual mode"

Save and close the file.

Configure the Oracle Empirica Signal and Oracle Empirica Topics Oracle WebLogic Server instances

You must configure the Oracle WebLogic Server instances.

 In a Web browser, navigate to the Oracle WebLogic Server Administration Console, for example:

```
https://< servername >:7002/console
```

- Log in using the administrator credentials provided to you by the system administrator.
- 3. To configure the Oracle Empirica Signal server instance:
 - a. In the Domain Structure pane, expand Environment, and select Servers.

The Summary of Servers page appears.

b. Select SignalServer.

The Settings for SignalServer page appears.

- c. Select the **Configuration** tab, and then select the **Server Start** sub-tab.
- d. In the Change Center pane, click Lock & Edit.
- **e.** In the **Arguments** field, enter the following text on a single line without a carriage return:

```
-Xms2048m -Xmx8192m -XX:MaxPermSize=1024m -
Dorg.owasp.esapi.resources=servers/SignalServer/stage/Signal/Signal/WEB-INF/classes
```

- f. Click Save.
- g. In the Change Center section on the left, click **Activate Changes**.

After a few moments, your changes are activated.

h. If you use Oracle Empirica Topics, to configure the Oracle Empirica Topics server instance, in the Domain Structure pane, select **Servers**.

The Summary of Servers page appears.

i. Select TopicsServer.

The Settings for TopicsServer page appears.

- j. Select the **Configuration** tab, and then select the **Server Start** sub-tab.
- k. In the Change Center pane, click Lock & Edit.



In the Arguments field, enter the following text on a single line without a carriage return:

-Xms256m -Xmx512m -Dorg.owasp.esapi.resources=servers/TopicsServer/stage/TopicsService/WEB-INF/classes

- m. Click Save.
- n. In the Change Center section on the left, click **Activate Changes**.

After a few moments, your changes are activated.

Start the Oracle WebLogic Server and the Node Manager

Perform these steps using the non-privileged user account on the application server.

- 1. In a command shell, navigate to the Oracle WebLogic Server default /bin directory, for example:
 - \$ cd u01/app/oracle/product/Middleware12c/user projects/domains/empirica/bin
- 2. If Oracle WebLogic Server is running, stop it, for example:
 - \$./stopWebLogic.sh
- 3. Start Oracle WebLogic Server, for example:
 - \$ nohup ./startWebLogic.sh > /dev/null &
- 4. Stop the Node Manager:
 - \$./stopNodeManager.sh
- 5. Restart the Node Manager:

```
$ nohup ./startNodeManager.sh > /dev/null &
```

- **6.** Verify that the Node Manager is reachable:
 - a. In a Web browser, navigate to the Oracle WebLogic Server Administration Console, for example:

```
https://< servername >:7002/console
```

- **b.** Log in using the administrator credentials provided to you by the system administrator.
- c. In the Domain Structure pane, expand **Environment**, and select **Machines**.

The Summary of Machines page appears.

d. Select SignalMachine.

The Settings for SignalMachine page appears.

- e. Select the Monitoring tab.
- Review the Status field.

If the Status is Reachable, the Node Manager is reachable. If the Status is Inactive, the Node Manager is not running.

- 7. In the Domain Structure pane, select **Servers**.
- 8. Select the **Control** tab.
- Start or restart the Oracle Empirica Signal server using the Node Manager:
 - a. In the table, review the **State** property for the Oracle Empirica Signal server.
 - **b.** If the state of the server is RUNNING, shut down the server:

- i. Select the **SignalServer** checkbox.
- ii. Expand the Shutdown drop-down menu, and then select Force Shutdown Now.
- iii. If prompted to confirm, click Yes.After a few moments, the state of the server changes to SHUTDOWN.

Note:

The page does not refresh automatically. To refresh the page, you can click the refresh button located above the table.

- c. Select the SignalServer checkbox.
- d. Click Start.
- e. If prompted to confirm, click Yes.

After a few moments, the state of the server changes to RUNNING.

- 10. If you use Oracle Empirica Topics, start or restart the Oracle Empirica Topics server using the Node Manager:
 - a. In the table, review the **State** property for the Oracle Empirica Topics server.
 - b. If the state of the server is RUNNING, shut down the server:
 - i. Select the **TopicsServer** checkbox.
 - ii. Expand the Shutdown drop-down menu, and then select Force Shutdown Now.
 - iii. If prompted to confirm, click **Yes**.

 After a few moments, the state of the server changes to SHUTDOWN.

Note:

The page does not refresh automatically. To refresh the page, you can click the refresh button located above the table.

- c. Select the **TopicsServer** checkbox.
- d. Click Start.
- e. If prompted to confirm, click Yes.

After a few moments, the state of the server changes to RUNNING.



4

Configure database credentials (skip for upgrades from 9.1 or later)

- Create the Oracle Empirica Topics user on the Oracle WebLogic Server
 To configure the database credentials, you must create the Oracle Empirica Topics user on the Oracle WebLogic Server.
- Store the Oracle Empirica Signal database and Oracle Empirica Topics credentials in Oracle Enterprise Manager

You create a map to store credentials associated with the Oracle Empirica Signal application.

Set up permissions for the credential store

You create security grants in the Oracle WebLogic Server console to enable the Oracle Empirica Signal application to access the credential store. Otherwise, the application cannot start, and users cannot log in.

Create the Oracle Empirica Topics user on the Oracle WebLogic Server

To configure the database credentials, you must create the Oracle Empirica Topics user on the Oracle WebLogic Server.

 In a Web browser, navigate to the Oracle WebLogic Server Administration Console, for example:

https://< servername >:7002/console

- 2. Log in using the administrator credentials provided to you by the system administrator.
- 3. In the Domain Structure pane, click Security Realms.

The Summary of Security Realms page appears.

4. In the Realms table, click myRealm.

The Settings for myrealm page appears.

- 5. Select the **User and Groups** tab.
- 6. In the Users table, click New.

The Create a New User page appears.

7. Specify a user name and password for the Oracle Empirica Topics user.

For example, you might specify **topicsService** as the user name.

8. Click OK.

The user is created.

Store the Oracle Empirica Signal database and Oracle Empirica Topics credentials in Oracle Enterprise Manager

You create a map to store credentials associated with the Oracle Empirica Signal application.

You create keys in the map for:

- Oracle Empirica Signal database account credentials.
- The URL to connect to the Oracle Empirica Signal database account.
- Oracle Empirica Topics credentials, if you use the Topics service.
- LDAP credentials, if you use LDAP for authentication.



All text fields are case-sensitive.

1. In a Web browser, navigate to Oracle Enterprise Manager console, for example:

```
https://< server name >:7002/em
```

Log in using the Oracle WebLogic Server administrator credentials provided to you by the system administrator.

The Oracle Enterprise Manager console appears.

Below the page title, expand the WebLogic Domain menu, select Security, and then select Credentials.

The Credentials page appears.

- 4. If you are upgrading from Oracle Empirica Signal 8.0, click the oracle.hsgbu.empirica map, then click **Delete...**, and answer **Yes** to complete the deletion.
- 5. Create a map for the Oracle Empirica Signal application credentials:
 - a. In the Credentials table, click **Create Map**.

The Create Map dialog box appears.

- b. In the Map Name field, enter oracle.hsgbu.empiricasignal.
- c. If you set the instance.name property in the webvdme.properties file, append the instance name to the map name, for example,

```
oracle.hsgbu.empiricasignal.dev.
```

For more information, see Set up the webvdme.properties file for Oracle Empirica Signal.

- d. Click OK.
- 6. Create a key for the Oracle Empirica Signal database account credentials:
 - a. In the Credentials table, click **Create Key**.
 - **b.** Fill in the fields:
 - Select Map—Select the map you created in Step 6.



- Key—Enter DatabaseCredentials.
- Type—Select Password.
- User Name, Password, Confirm Password—Enter the credentials for the Oracle Empirica Signal database schema. The default user name is webvdme.
- Description—Enter Signal schema user name and password.
- c. Click OK.
- 7. Create a key for the URL to connect to the Oracle Empirica Signal database account:
 - a. In the Credentials table, click Create Key.
 - b. Fill in the fields:
 - Select Map—Select the map you created in Step 6.
 - Key—Enter DatabaseConnectURL.
 - Type—Select Generic.
 - Credential—Select Enter as text, and enter the database connection URL for the Oracle Empirica Signal database schema, for example:

jdbc:oracle:thin:@//<host>:<port>/<service name>

- <host> is the IP address or fully qualified name of the database server, for example, 198.168.0.1.
- <port> is the port number used by the database listener, for example, 1521.
- <service name> is the database service name, for example, ORCL.
- Description—Enter Signal database connection URL.
- c. Click OK.
- 8. If you use Oracle Empirica Topics, create a key for the Oracle Empirica Topics service credentials:
 - a. In the Credentials table, click Create Key.
 - b. Fill in the fields:
 - Select Map—Select the map you created in Step 6.
 - Key—Enter TopicsService.
 - Type—Select Password.
 - User Name, Password, Confirm Password—Enter the credentials for the Oracle Empirica Topics user you created on the Oracle WebLogic Server.
 For more information, see Create the Oracle Empirica Topics user on the Oracle WebLogic Server.
 - Description—Enter the user name and password for Oracle Empirica Signal to communicate with the Oracle Empirica Topics service.
 - c. Click OK.
- 9. If you use LDAP for authentication and do not use anonymous LDAP login, create a key for the LDAP credentials:
 - a. In the Credentials table, click Create Key.
 - b. Fill in the fields:
 - Select Map—Select the map you created in Step 6.
 - Key—Enter LdapCredentials.



- Type—Select Password.
- User Name, Password, Confirm Password—Enter the login information for the LDAP user.
- Description—Enter LDAP user name and password.
- c. Click OK.
- 10. In the Credentials table, expand the map you created and review the keys.

Set up permissions for the credential store

You create security grants in the Oracle WebLogic Server console to enable the Oracle Empirica Signal application to access the credential store. Otherwise, the application cannot start, and users cannot log in.

1. In a Web browser, navigate to Oracle Enterprise Manager console, for example:

```
https://< server name >:7002/em
```

2. Log in using the Oracle WebLogic Server administrator credentials provided to you by the system administrator.

The Oracle Enterprise Manager console appears.

Below the page title, expand the WebLogic Domain menu, select Security, and then select System Policies.

The System Policies page appears.

- 4. Create a security grant for the Oracle Empirica Signal codebase.
 - a. In the System Policies table, click **Create**.

The Create System Grant page appears.

b. In the **Codebase** field, enter the case-sensitive codebase, for example:

```
file:${oracle.deployed.app.dir}/Signal${oracle.deployed.app.ext}
```

- 5. Add a permission to the security grant for Oracle Empirica Signal.
 - a. Click Add.

The Add Permission page appears.

- b. At the bottom of the page, select **Select here to enter details for a new permission**.
- c. Fill in the fields as follows.
 - Permission Class—

```
oracle.security.jps.service.credstore.CredentialAccessPermiss ion
```

Resource Name —context=SYSTEM, mapName=<MAP_NAME>, keyName=*
where <MAP_NAME> is the map you created for the Oracle Empirica Signal
application credentials, for example, oracle.hsgbu.empiricasignal.

For more information, see Store the Oracle Empirica Signal database and Oracle Empirica Topics credentials in Oracle Enterprise Manager.

- Permission Actions—read.
- d. Click OK.

The Create System Grant page reappears.

e. Click OK.

The permission is saved, and the System Policies page reappears.

- 6. Search for the security grant you just created:
 - a. From the Name drop-down list, select Includes.
 - **b.** In the search field, enter **Signal** or the application context root.

For more information, see Create the Oracle Empirica Signal deployment on the Oracle WebLogic Server.

c. Click Search.

The security grant appears in the table.

- Create a security grant for the Oracle Empirica Signal WebLogic domain codebase based on the security grant you searched for.
 - a. In the table, select the security grant, and click Create Like.

The Create System Grant Like page appears.

b. In the **Codebase** field, enter the case-sensitive codebase, for example:

```
file:${domain.home}/servers/${weblogic.Name}/stage/Signal/Signal$
{oracle.deployed.app.ext}
```

c. Click OK.

The security grant is created.

- 8. Follow the previous two steps to create security grants for the following codebases.
 - Oracle Empirica Topics service codebase: file:\${oracle.deployed.app.dir}/TopicsService\${oracle.deployed.app.ext}
 - Oracle Empirica Topics WebLogic domain codebase:

```
file:${domain.home}/servers/${weblogic.Name}/stage/TopicsService$
{oracle.deployed.app.ext}
```



Set up the Oracle Empirica Signal software

- Set up the Oracle Empirica Signal properties files (skip for upgrades from 9.1 or later)
 Set up these Oracle Empirica Signal properties files.
- Upgrade from Oracle Empirica Signal release 9.1 or later
 Perform these tasks to upgrade from Oracle Empirica Signal 9.1.0.x, 9.2.0.x, 9.2.1.x, or 9.2.2.x to 9.2.3.

Set up the Oracle Empirica Signal properties files (skip for upgrades from 9.1 or later)

Set up these Oracle Empirica Signal properties files.

- Set up the webvdme.properties file for Oracle Empirica Signal
 You create and edit the webvdme.properties file to supply important properties to the
 Oracle Empirica Signal software.
- Set up the webvdme.properties file for Oracle Empirica Topics
 To use Oracle Empirica Topics, set up the webvdme.properties file.
- Set up the listener.properties file
 You create and edit the listener.properties file to store information used for data mining runs.
- Set up the report_listener.properties file
 You create and edit the report_listener.properties file to enable Oracle Empirica
 Signal to run reports in batches.
- Set up the webvdme-fonts.properties file
 You create and edit the webvdme-fonts.properties file to store font information for
 Oracle Empirica Signal.
- Set up the log4j2.xml file for Oracle Empirica Signal You edit the log4j2.xml file to specify where to store Oracle Empirica Signal log files.
- Set up the log4j2.xml file for Oracle Empirica Topics
 You edit the log4j2.xml file to specify where to store the Oracle Empirica Topics log
 files.
- Set up the Idap.properties file
 To integrate Oracle Empirica Signal with LDAP, you store information about the LDAP configuration in the ldap.properties file.

Set up the webvdme.properties file for Oracle Empirica Signal

You create and edit the webvdme.properties file to supply important properties to the Oracle Empirica Signal software.

Before you begin, if you intend to configure the Oracle Empirica Signal software to use single sign-on (SSO) with Oracle Access Manager, refer to Set up Oracle Access Manager for configuration details.

Perform these steps using the non-privileged user account on the application server.

- 1. If you are installing the Oracle Empirica Signal software on this server for the first time, create a directory for temporary files created by the Oracle Empirica Signal application if it has not already been created, for example:
 - \$ mkdir /u01/app/oracle/product/Signal/temp
- 2. Set the permissions on the directory containing the log file to enable write access for the non-privileged user account.
- 3. Navigate to the <INSTALL DIR>/Signal/WEB-INF/classes directory, for example:
 - \$ cd /u01/stage/Signal Install/Signal/WEB-INF/classes
- 4. If this is a new installation, copy the template_webvdme.properties file into the same directory, and name the copy webvdme.properties, for example:
 - \$ cp template webvdme.properties webvdme.properties
- 5. If you are upgrading from Oracle Empirica Signal 8.x, copy your previous webvdme.properties to the <INSTALL_DIR>/Signal/WEB-INF/classes directory, for example:
 - \$ cp /u01/stage/Signal_Install_old/Signal/WEBINF/classes/webvdme.properties /u01/stage/Signal_Install/Signal/WEBINF/classes/webvdme.properties
- 6. Using a text editor, open the webvdme.properties file.
 - a. Edit the parameters according to the following table:

Parameter	Description	Example
sqlldr_connect	Specify the value <tns_name>.</tns_name>	sqlldr_connect=orcl
temp_dir	Specify the path to the /temp directory you created in Step 1.	<pre>temp_dir=/u01/app/ oracle/product/ Signal/temp</pre>
instance.name	If you plan to use one application server to host multiple instances of Oracle Empirica Signal, provide the name of the instance. If you do not plan to use one application server to host multiple instances of Oracle Empirica Signal, leave the instance.name blank.	<pre>instance.name=dev or instance.name=</pre>



Parameter	Description	Example
#topicsService.url	If you plan to use the Oracle Empirica Topics feature, uncomment the line, and replace localhost with your server name and replace portNumber with the port number. If you do not plan to use the Oracle Empirica Topics feature, uncomment the line, and set the topicsService.url parameter to empty.	topicsService.url=ht tps://myserver:7006/ TopicsService/ws/ topicsService The example is for an SSL environment, where you configure the SSL security policy for the Oracle Empirica Topics web service. For more information, see Set up the Oracle Empirica Topics web service security policy. For a non-SSL environment, use http and the appropriate port.
topicsService.maxAttachment SizeMB	Specify the maximum allowed size for Oracle Empirica Topics attachments in MB. The recommended value is 100 MB.	<pre>topicsService.maxAtt achmentSizeMB=100</pre>
#sso.plugins	To enable SSO, uncomment the line.	<pre>sso.plugins=com.orac le.hsgbu.empirica.ss o.EmpiricaSsoPlugin</pre>
#sso.EmpiricaSsoPlugin.usern ame.header	To enable SSO, uncomment the line. The value of the sso.EmpiricaSsoPlugin.username.header property depends on your OAM configuration.	<pre>sso.EmpiricaSsoPlugi n.username.header=OA M_REMOTE_USER</pre>
#sso.EmpiricaSsoPlugin.logou tRedirectUrl	To enable SSO, uncomment the line, and replace the sample URL with your logout URL in the form https://ssoServer:port/oamsso/logout.jsp .	<pre>sso.EmpiricaSsoPlugi n.logoutRedirectUrl= <oam_logout_url>? end_url=https:// myserver:7004/Signal</oam_logout_url></pre>
#help.url	To point to more current help content than what appears in the application by default, uncomment the line and replace with the url for the most recent help content.	help.url=https:// docs.oracle.com/pls/ topic/lookup?ctx=en/ industries/health- sciences/empirica- signal/9.2.2/ userguide&id
#feedback.url	Specifies the path to Oracle Health Sciences Support.	<pre>#feedback.url=https: //www.oracle.com/ industries/health- sciences/ support.html</pre>

b. If you wish to configure IP Access Control List, edit the following parameters according to the table below:



Parameter	Description	Example
#IPACL_ENABLE=FALSE	To configure Access Control List (ACL) in the Signal application, uncomment this parameter and set the value to TRUE.	IPACL_ENABLE=TRUE
	Controls whether IP Access Control Lists are enabled or disabled.	
	Valid Options:	
	TRUE -> Enable ACL Checks	
	FALSE -> Do not enable ACL Checks	
#IPACL_ SOURCE	Uncomment the parameter and set the value to SOURCE_IP.	<pre>IPACL_ SOURCE = SOURCE_IP</pre>
	Specifies where to obtain the source IP.	
	This parameter is evaluated only when IPACL_ENABLE is set to TRUE.	
	Valid Options:	
	SOURCE_IP -> Evaluate ACL based on source IP of HTTP request	
	HEADER -> Evaluate ACL based on the value of a header within the http request	
#IPACL_HEADER_NAME	This parameter defines which HTTP header contains the IP address.	IPACL_HEADER_NAME=X-FORWARED-FOR
	This parameter is evaluated only when IPACL_ENABLE is set to TRUE and IPACL_SOURCE is set to HEADER.	
	Typically, this value is FORWARED-FOR, X-FORWARED-FOR, or COOKIE	
	Note: This implementation does not support the COOKIE header.	
# IPACL_HEADER_VALUE_RE GEX	This parameter determines how the IP address is parsed from a header value.	<pre>#IPACL_HEADER_VALUE_ REGEX=\\b\\d{1,3}\ \.\\d{1,3}\\.\</pre>
	This parameter is evaluated only when IPACL_ENABLE is set to TRUE and IPACL_SOURCE is set to HEADER.	\d{1,3}.\\d{1,3}\ \b(\\s*,\\s*\\b\ \d{1,3}\\.\\d{1,3}\ \.\\d{1,3}\\.\\d{1,3}\ \.\\d{1,3}\\.\\d{1,3}\
	The default value is \b\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1, as \lambda}\.\d{1, as \lambda}\.\d	



Parameter	Description	Example
# IPACL_ALLOW	Add IP addresses to the IPACL_ALLOW list separated by comma.	IPACL_ALLOW =192.168.1.100-192.1 68.1.200, 10.1.1.20
	Defines the whitelist of IP addresses able to access the application.	,
	This parameter is both evaluated and required only when IPACL_ENABLE is set to TRUE.	
	The format is as follows, in Backus Normal Form notation:	
	<ip4-octet> ::= <0255</ip4-octet>	
	<ip4-address> ::=</ip4-address>	
	<ip4- octet="">.<ip4- octet="">.<ip4- octet=""></ip4-></ip4-></ip4->	
	<ip4-range> ::= <ip4- address>-<ip4-address></ip4-address></ip4- </ip4-range>	
	<ip4-entry> ::= <ip4-address> <ip4-range></ip4-range></ip4-address></ip4-entry>	
	<ip_acl_list> := <ip4-entry> <ip4-entry> {, <ip4-entry>}</ip4-entry></ip4-entry></ip4-entry></ip_acl_list>	
	IPACL_ALLOW: <ip_acl_list></ip_acl_list>	
	Examples: IPACL_ALLOW: 192.168.1.100	
	IPACL_ALLOW: 192.168.1.101	
	IPACL_ALLOW: 192.168.1.100-192.168.1.200	
	IPACL_ALLOW: 192.168.1.200, 10.1.1.20	

- c. Save and close the file.
- 7. For an SSO environment, update the session timeout value.
 - a. Navigate to the <INSTALL DIR>/Signal/WEB-INF directory, for example:
 - \$ cd /u01/stage/Signal Install/Signal/WEB-INF
 - b. Using a text editor, open the web.xml file.
 - **c.** Edit the session-timeout parameter so that it is greater than the session timeout for the single sign-on setup in the organization.
 - d. Save and close the file.

Set up the webvdme.properties file for Oracle Empirica Topics

To use Oracle Empirica Topics, set up the webvdme.properties file.

Perform these steps using the non-privileged user account on the application server.

- 1. Navigate to the <INSTALL_DIR>/TopicsService/WEB-INF/classes directory, for example:
 - \$ cd /u01/stage/Signal Install/TopicsService/WEB-INF/classes



- 2. If this is a new installation or an upgrade from Oracle Empirica Signal 8.x, copy the template_webvdme.properties file into the same directory, and name the copy webvdme.properties, for example:
 - \$ cp template webvdme.properties webvdme.properties
- 3. If you are upgrading Oracle Empirica Topics from any 8.x version, copy your previous Oracle Empirica Topics webvdme.properties to the <INSTALL_DIR>/ TopicsService/WEB-INF/classes directory, for example:

```
$ cp /u01/stage/Signal_Install_old/TopicsService/WEB-
INF/classes/webvdme.properties
/u01/stage/Signal_Install/TopicsService/WEB-INF/classes/webvdme.properties
```

- 4. Open the webvdme.properties file in a text editor.
 - a. Edit the parameters according to the following table:

Parameter	Description	Example
instance.name	Edit the instance name to match the instance name you provided for the Oracle Empirica Signal webvdme.properties file. See Set up the webvdme.properties file for Oracle Empirica Signal.	See Set up the webvdme.properties file for Oracle Empirica Signal
#feedback.url	Specifies the path to Oracle Health Sciences Support. Add these two lines for the Feedback parameter: # Feedback URL #feedback.url=https: //www.oracle.com/ industries/health- sciences/ support.html	<pre># Feedback URL #feedback.url=https: //www.oracle.com/ industries/health- sciences/ support.html</pre>

b. If you wish to configure IP Access Control List for Oracle Empirica Topics, edit the following parameters according to the table below:

Parameter	Description	Example
#IPACL_ENABLE=FALSE	To configure Access Control List (ACL) in TopicsService, uncomment this parameter and set the value to TRUE.	IPACL_ENABLE=TRUE
	Controls whether IP Access Control Lists are enabled or disabled.	
	Valid Options:	
	TRUE -> Enable ACL Checks	
	FALSE -> Do not enable ACL Checks	



Parameter	Description	Example
#IPACL_ SOURCE	Uncomment the parameter and set the value to SOURCE_IP.	IPACL_ SOURCE = SOURCE_IP
	Specifies where to obtain the source IP.	
	This parameter is evaluated only when IPACL_ENABLE is set to TRUE.	
	Valid Options:	
	SOURCE_IP -> Evaluate ACL based on source IP of HTTP request	
	HEADER -> Evaluate ACL based on the value of a header within the http request	
#IPACL_HEADER_NAME	This parameter defines which HTTP header contains the IP address.	IPACL_HEADER_NAME=X- FORWARED-FOR
	This parameter is evaluated only when IPACL_ENABLE is set to TRUE and IPACL_SOURCE is set to HEADER.	
	Typically, this value is FORWARED-FOR, X-FORWARED-FOR, or COOKIE	
	Note: This implementation does not support the COOKIE header.	
# IPACL_HEADER_VALUE_RE GEX	This parameter determines how the IP address is parsed from a header value.	<pre>#IPACL_HEADER_VALUE_ REGEX=\\b\\d{1,3}\ \.\\d{1,3}\\.\</pre>
	This parameter is evaluated only when IPACL_ENABLE is set to TRUE and IPACL_SOURCE is set to HEADER.	\d{1,3}.\\d{1,3}\\b(\\s*,\\s*\\b\\d{1,3}\\.\\d{1,3}\\.\\d{1,3}\\.\\d{1,3}\\.\\d{1,3}\\.\\d\d{1,3}\\.\\d\d\d{1,3}\\\d\d\d\d\d\d\d\d\d\d\d\d\d\d\d\d\d\d
	The default value is \b\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}\\d{1,3}	



Parameter	Description	Example
# IPACL_ALLOW	Add IP addresses to the IPACL_ALLOW list separated by comma. Defines the whitelist of IP	IPACL_ALLOW =192.168.1.100-192.1 68.1.200, 10.1.1.20
	addresses able to access the application.	
	This parameter is both evaluated and required only when IPACL_ENABLE is set to TRUE.	
	The format is as follows, in Backus Normal Form notation:	
	<ip4-octet> ::= <0255</ip4-octet>	
	<ip4-address> ::=</ip4-address>	
	<ip4- octet="">.<ip4- octet="">.<ip4- octet=""></ip4-></ip4-></ip4->	
	<ip4-range> ::= <ip4- address>-<ip4-address></ip4-address></ip4- </ip4-range>	
	<ip4-entry> ::= <ip4-address> <ip4-range></ip4-range></ip4-address></ip4-entry>	
	<ip_acl_list> := <ip4-entry> <ip4-entry> {, <ip4-entry>}</ip4-entry></ip4-entry></ip4-entry></ip_acl_list>	
	IPACL_ALLOW: <ip_acl_list></ip_acl_list>	
	Examples: IPACL_ALLOW: 192.168.1.100	
	IPACL_ALLOW: 192.168.1.101	
	IPACL_ALLOW: 192.168.1.200	
	IPACL_ALLOW: 192.168.1.200, 10.1.1.20	

5. Save and close the webvdme.properties file.

Set up the listener.properties file

You create and edit the listener.properties file to store information used for data mining runs.

Perform these steps using the non-privileged user account on the application server.

- 1. Navigate to the <INSTALL_DIR>/Signal/WEB-INF/classes directory, for example:
 - \$ cd /u01/stage/Signal Install/Signal/WEB-INF/classes
- 2. If this is a new installation:
 - a. Copy the template_listener.properties file into the same directory, and name the copy template.properties, for example:
 - \$ cp template_listener.properties listener.properties
 - **b.** Using a text editor, open the listener.properties file.
 - c. Edit the parameters as needed according to the following table:



Parameter	Description	Example
(Upgrade only) mgps_mem_limit	If the value of this parameter was larger in the listener.properties file for your previous version of Oracle Empirica Signal, update the parameter with the	-
(Upgrade only) mgps_prr_mem_limit	larger value. For the property mgps_prr_mem_limit, default value is 1054686. If your previous version of Oracle Empirica Signal was larger, update the parameter with the larger value.	-
(Upgrade only) fetch_size	If the value of this parameter was larger in the listener.properties file for your previous version of Oracle Empirica Signal, update the parameter with the larger value.	-
mgps_path	Specify the path to the MGPS executable. For more information, see Install MGPS.	mgps_path=u01/app/ oracle/product/ Signal/bin/MGPS
r_path	If R version 4.0.5 is installed on your application server, specify the path to the directory where R is installed.	r_path=/usr/lib64/R
rgps_command	If R version 4.0.5 is installed on your application server and you want to enable Regression-adjusted Gamma Poisson Shrinker (RGPS) computations, specify the path to the command that starts R.	rgps_command=/usr/bin/R
	You can execute the which R command to determine the path.	
	For more information, see Install or upgrade the RGPS add-on package to the R library.	
rgps_cpus_count	Maximum Number of CPU cores to use in RGPS execution.	rgps_cpus_count=2
	This value should be less than the total number of CPU cores on the machine. A larger number will speed up RGPS execution but may affect other activities on the application server.	
sqlldr_path	Specify the path to the SQL Loader executable.	sqlldr_path=/u01/app /oracle/product/ 19.3.0/bin/sqlldr



d. Save and close the file.

For all other upgrades, copy your previous listener.properties to the <INSTALL DIR>/Signal/WEB-INF/classes directory, for example:

```
$ cp /u01/stage/Signal_Install_old/Signal/WEB-
INF/classes/listener.properties /u01/stage/Signal_Install/Signal/WEB-
INF/classes/listener.properties
```

Set up the report_listener.properties file

You create and edit the report_listener.properties file to enable Oracle Empirica Signal to run reports in batches.

Before you begin, note the value of the serverid property in the listener.properties file. For more information, see Set up the listener.properties file.

Perform these steps using the non-privileged user account on the application server.

1. Navigate to the <INSTALL DIR>/Signal/WEB-INF/classes directory, for example:

```
$ cd <INSTALL DIR>/Signal/WEB-INF/classes
```

2. If this is a new installation, copy the template_report_listener.properties file into the same directory, and name the copy report_listener.properties, for example:

```
$ cp template report listener.properties report listener.properties
```

3. For all other upgrades, copy your previous report_listener.properties to the <INSTALL DIR>/Signal/WEB-INF/classes directory, for example:

```
$ cp /u01/stage/Signal_Install_old/Signal/WEB-
INF/classes/report_listener.properties
/u01/stage/Signal_Install/Signal/WEB-
INF/classes/report listener.properties
```

- 4. Using a text editor, open the report listener.properties file.
- 5. If the value of the serverid property in the file is the same value as the serverid property in the listener.properties file, change the value.
- 6. Save and close the file.

Set up the webvdme-fonts.properties file

You create and edit the webvdme-fonts.properties file to store font information for Oracle Empirica Signal.

Perform these steps using the non-privileged user account on the application server.

Navigate to the <INSTALL DIR>/Signal/WEB-INF/classes directory, for example:

```
$ cd /u01/stage/Signal_Install/Signal/WEB-INF/classes
```

2. If this is a new installation:



a. Copy the template_webvdme-fonts.properties file into the same directory, and name the copy webvdme-fonts.properties, for example:

```
$ cp template webvdme-fonts.properties webvdme-fonts.properties
```

- b. Using a text editor, open the webvdme-fonts.properties file.
- **c.** To support Asian fonts in PDF output, specify the *GoNotoCurrentJp* font as the base font, for example:

```
iText.TABLE_WRITER_BASE_FONT_PATH=GoNotoCurrentJp.ttf
iText.CASE_SERIES_DETAIL_BASE_FONT_PATH=GoNotoCurrentJp.ttf
iText.TOPIC_WRITER_BASE_FONT_PATH=GoNotoCurrentJp.ttf
```

The GoNotoCurrentJp font is packaged with the Oracle Empirica Signal installation files.

- d. Save and close the file.
- 3. For all other upgrades, copy your previous webvdme_fonts.properties to the <INSTALL_DIR>/Signal/WEB-INF/classes directory and specify the GoNotoCurrentJp font as the base font, for example:

```
iText.TABLE_WRITER_BASE_FONT_PATH=GONOtoCurrentJp.ttf
iText.CASE_SERIES_DETAIL_BASE_FONT_PATH=GONOtoCurrentJp.ttf
iText.TOPIC_WRITER_BASE_FONT_PATH=GONOtoCurrentJp.ttf
```

Set up the log4j2.xml file for Oracle Empirica Signal

You edit the log4j2.xml file to specify where to store Oracle Empirica Signal log files.

Perform these steps using the non-privileged user account on the application server.

- 1. Navigate to the <INSTALL_DIR>/Signal/WEB-INF/classes directory, for example:
 - \$ cd /u01/stage/Signal Install/Signal/WEB-INF/classes
- 2. Using a text editor, open the log4j2.xml file.
- 3. Set the <Property name="filePath"> tag parameter to the directory where the Oracle Empirica Signal log files will be stored; for example:

```
<Property name="filePath">/u01/app/oracle/product/Signal/logs</property>
```

(Upgrade only) If you customized the log4j.properties file for the previous release of the Oracle Empirica Signal software, apply the customizations to the log4j2.xml file for the current release.

- Save and close the file.
- 5. Set the permissions on the directory containing the log file to enable write access for the non-privileged user account.

Set up the log4j2.xml file for Oracle Empirica Topics

You edit the log4j2.xml file to specify where to store the Oracle Empirica Topics log files.

Perform these steps using the non-privileged user account on the application server.



1. Navigate to the <INSTALL_DIR>/TopicsService/WEB-INF/classes directory, for example:

```
$ cd /u01/stage/Signal Install/TopicsService/WEB-INF/classes
```

- 2. Using a text editor, open the log4j2.xml file.
- 3. Set the <Property name="filePath"> tag parameter to the directory where the Oracle Empirica Topics log files will be stored; for example:

```
<Property name="filePath">/u01/app/oracle/product/Signal/logs</Property>
```

(Upgrade only) If you customized the log4j.properties file for the previous release of the Oracle Empirica Signal software, apply the customizations to the log4j2.xml file for the current release.

Save and close the file.

Set up the Idap.properties file

To integrate Oracle Empirica Signal with LDAP, you store information about the LDAP configuration in the ldap.properties file.

For more information, see the LDAP section in the User Guide and Online Help.

If you are upgrading from a previous version, copy your previous ldap.properties file to the installation area. For example:

\$ cp ldap.properties /u01/stage/Signal Install/Signal/WEB-INF/classes

Upgrade from Oracle Empirica Signal release 9.1 or later

Perform these tasks to upgrade from Oracle Empirica Signal 9.1.0.x, 9.2.0.x, 9.2.1.x, or 9.2.2.x to 9.2.3.

- Restore site-specific properties files
 - To upgrade from Oracle Empirica Signal 9.1.0.x, 9.2.0.x, 9.2.1.x, or 9.2.2.x to 9.2.3, it is necessary to restore site-specific properties files.
- Preserve the Oracle WebLogic Server deployment files
 To upgrade Oracle Empirica Signal from 9.1.0.x, 9.2.0.x, 9.2.1.x, or 9.2.2.x to 9.2.3,
 perform this task.
- Preserve custom home pages, images, and release notes from a previous release (upgrade only)
 - Perform these steps to preserve any customizations you made to previous releases and to copy *Release Notes* documents from previous releases.

Restore site-specific properties files

To upgrade from Oracle Empirica Signal 9.1.0.x, 9.2.0.x, 9.2.1.x, or 9.2.2.x to 9.2.3, it is necessary to restore site-specific properties files.

Perform these steps using the non-privileged user account on the application server.

- 1. In a command shell, navigate to the backup directory <INSTALL_DIR>/
 Signal Install old/Signal/WEB-INF/classes.
- 2. Copy the webvdme.properties file to the installation area. For example:
 - \$ cp webvdme.properties /u01/stage/Signal Install/Signal/WEB-INF/classes



- 3. Update the webvdme.properties file in /u01/stage/Signal_Install/Signal/WEB-INF/classes:
 - a. Update the Oracle Empirica Signal help URL content from /u01/stage/ Signal_Install/Signal/WEB-INF/classes/template_webvdme.properties and, if custom help is configured, uncomment help.url:

```
# Signal help URL
# To override the default help URL, uncomment and change the major
version and patchset version if available of the URL
# e.g., help.url=https://docs.oracle.com/pls/topic/lookup?ctx=en/
industries/health-sciences/empirica-signal/9.x/userguide&id=
#help.url=https:/docs.oracle.com/pls/topic/lookup?ctx=en/industries/
health-sciences/empirica-signal/
<majorVersion.minor.Version.[patchsetVersion]>/userguide&id=
```

b. Remove deprecated property oracleHelpCenter.url and related content.

```
# Oracle Help Center URL for hosting help content
# If the property or its value is not set, then help will default to
the local help file
oracle.HelpCenter.url=https://docs.oracle.com/health-sciences-empirica-
signal-90./ESIUG
```

4. Copy the listener properties file to the installation area. For example:

```
$ cp listener.properties /u01/stage/Signal Install/Signal/WEB-INF/classes
```

5. Copy the report listener properties file to the installation area. For example:

```
$ cp report_listener.properties /u01/stage/Signal_Install/Signal/WEB-INF/
classes
```

6. Copy the webvdme-fonts.properties file to the installation area. For example:

```
iText.TABLE_WRITER_BASE_FONT_PATH=GONOtoCurrentJp.ttf
iText.CASE_SERIES_DETAIL_BASE_FONT_PATH=GONOtoCurrentJp.ttf
iText.TOPIC_WRITER_BASE_FONT_PATH=GONOtoCurrentJp.ttf
```

7. Copy the log4j2.xml file to the installation area, overwriting the existing file. For example:

```
$ cp -f log4j2.xml /u01/stage/Signal Install/Signal/WEB-INF/classes
```

8. If Oracle Empirica Signal is integrated with LDAP, copy the Oracle Empirica Signal file to the installation area. For example:

```
$ cp ldap.properties /u01/stage/Signal Install/Signal/WEB-INF/classes
```

- 9. In a command shell, navigate to the backup directory <INSTALL_DIR>/ Signal_Install_old/TopicsService/WEB-INF/classes.
- 10. Copy the webvdme.properties file to the installation area. For example:

```
$ cp webvdme.properties /u01/stage/Signal_Install/TopicsService/WEB-INF/
classes
```



11. Copy the log4j2.xml file to the installation area, overwriting the existing file. For example:

```
$ cp -f log4j2.xml /u01/stage/Signal Install/TopicsService/WEB-INF/classes
```

Preserve the Oracle WebLogic Server deployment files

To upgrade Oracle Empirica Signal from 9.1.0.x, 9.2.0.x, 9.2.1.x, or 9.2.2.x to 9.2.3, perform this task.

Perform these steps using the non-privileged user account on the application server.

- In a command shell, navigate to the backup directory <INSTALL_DIR>/ Signal_Install_old/Signal.
- 2. If a Plan.xml file exists, copy it to the Oracle Empirica Signal installation area. For example:

```
$ cp Plan.xml /u01/stage/Signal Install/Signal
```

- Navigate to the backup directory <INSTALL_DIR>/Signal_Install_old/ TopicsService.
- 4. Copy Plan.xml to the TopicsService installation area in the same location. For example:

```
$ cp Plan.xml /u01/stage/Signal_Install/TopicsService/TopicsService
```

5. Copy plan folder to the TopicsService installation area in the same location. For example:

```
$ cp -r plan /u01/stage/Signal_Install/TopicsService
```

Preserve custom home pages, images, and release notes from a previous release (upgrade only)

Perform these steps to preserve any customizations you made to previous releases and to copy *Release Notes* documents from previous releases.

Perform these steps using the non-privileged user account on the application server.

 Copy any relevant Release Notes documents from the previous installation location to the new installation location. For example, copy the Release Notes documents from the following location:

```
\label{location:condition} $$ \u01/stage/Signal_Install_old/Signal/relnotes $$ to the following location:
```

```
/u01/stage/Signal_Install/Signal/relnotes
```

Copy any custom content, such as custom home pages, from the previous installation location to the new installation location. For example, copy your file from the following location:

```
/u01/stage/Signal_Install_old/Signal/customhomes to the following location:
```

```
/u01/stage/Signal Install/Signal/customhomes
```

Copy any custom images from the previous installation location to the new installation location. For example, copy your file from the following location:

```
/u01/stage/Signal_Install_old/Signal/image to the following location:
```

/u01/stage/Signal_Install/Signal/image



The logo file name logo.gif is reserved for system use. If your custom logo file is named logo.gif, it will not be used. Please rename your customer logo file and reflect that change in the respective login group settings.



Deploy the Oracle Empirica Signal application

- Create the Oracle Empirica Signal deployment on the Oracle WebLogic Server
 To deploy Oracle Empirica Signal, create the deployment on the Oracle WebLogic Server.
- Create the Oracle Empirica Topics web service deployment on the Oracle WebLogic Server

Follow these steps only if you use Oracle Empirica Topics.

- Set up the Oracle Empirica Topics web service security policy
 Follow these steps only if you use Oracle Empirica Topics.
- Deploy the Oracle Empirica Signal application
 Follow these instructions to deploy the Oracle Empirica Signal 9.2.3 upgrade.
- Deploy the Oracle Empirica Topics web service
 Follow these instructions to deploy the Oracle Empirica Topics 9.2.3 upgrade.

Create the Oracle Empirica Signal deployment on the Oracle WebLogic Server

To deploy Oracle Empirica Signal, create the deployment on the Oracle WebLogic Server.

 In a Web browser, navigate to the Oracle WebLogic Server Administration Console, for example:

```
https://< servername >:7002/console
```

- 2. Log in using the administrator credentials provided to you by the system administrator.
- 3. In the Domain Structure pane, click **Deployments**.
- 4. In the Change Center pane, click Lock & Edit.
- 5. In the Deployments table, click **Install**.

The Install Application Assistant wizard appears.

- 6. On the Locate deployment to install and prepare for deployment page:
 - a. In the Path field, enter the path to the jax-rs library, for example:

/u01/app/oracle/product/Middleware12c/wlserver/common/deployable-libraries

- b. Select jax-rs-2.0.war.
- c. Click Next.
- 7. On the Choose targeting style page:
 - a. Select Install this deployment as a library.
 - b. Click Next.
- 8. On the Select deployment targets page:
 - Select SignalServer.
 - b. Click Next.

- On the Optional Settings page, in the Source Accessibility section:
 - a. Select Copy this application onto every target for me.
 - b. Click Next.
- 10. Click Finish.
- 11. Click Save.
- 12. In the Domain Structure pane, click **Deployments**.

jax-rs appears in the Deployments table.

- 13. In the Change Center pane, click Activate Changes.
- 14. In the Domain Structure pane, click Deployments.
- 15. In the Change Center pane, click Lock & Edit.
- 16. In the Deployments table, click Install.

The Install Application Assistant wizard appears.

- 17. On the Locate deployment to install and prepare for deployment page:
 - a. In the Path field, enter the path to the <INSTALL DIR>.
 - b. Select Signal.
 - c. Click Next.
- **18.** On the Choose targeting style page:
 - a. Select Install this deployment as an application.
 - b. Click Next.
- 19. On the Select deployment targets page:
 - a. Select SignalServer.
 - b. Click Next.
- 20. On the Optional Settings page, in the Source Accessibility section:
 - a. Select Copy this application onto every target for me.
 - b. Click Next.
- 21. Click Finish.

After a few moments, the Oracle Empirica Signal deployment is created.

- 22. Click Save.
- 23. In the Domain Structure pane, click **Deployments**.

Signal appears in the Deployments table.

24. In the Change Center pane, click Activate Changes.

The deployment state changes to Prepared.

- 25. In the Deployments table, select the Signal deployment and open Control tab.
- 26. Expand the Start drop-down list, and select Servicing all requests.
- 27. If prompted to confirm, click Yes.

The deployment state changes to Active.



Create the Oracle Empirica Topics web service deployment on the Oracle WebLogic Server

Follow these steps only if you use Oracle Empirica Topics.

 In a Web browser, navigate to the Oracle WebLogic Server Administration Console, for example:

```
https://< servername >:7002/console
```

- 2. Log in using the administrator credentials provided to you by the system administrator.
- In the Domain Structure pane, click Deployments.
- 4. In the Change Center pane, click Lock & Edit.
- 5. In the Deployments table, click Install.

The Install Application Assistant wizard appears.

- On the Locate deployment to install and prepare for deployment page, perform the following:
 - a. In the Path field, enter the path to the <INSTALL DIR>.
 - b. Select TopicsService and click Next.
- On the Choose targeting style page, select Install this deployment as an application and click Next.
- On the Select deployment targets page, select TopicsServer and click Next.
- On the Optional Settings page, perform the following:
 - a. Select Copy this application onto every target for me.
 - b. Click Next, then Finish.

After a few moments, the TopicsService deployment is created.

- c. Click Save.
- In the Domain Structure pane, click Deployments.

TopicsService appears in the Deployments table.

In the Change Center pane, click Activate Changes.

The deployment state changes to Active.

- **12.** In the Deployments table, select the **TopicsService** deployment and **Control** tab.
- 13. Expand the Start drop-down list and select Servicing all requests.
- 14. If prompted to confirm, click Yes.

The deployment state changes to Active.

Set up the Oracle Empirica Topics web service security policy

Follow these steps only if you use Oracle Empirica Topics.

 In a Web browser, navigate to the Oracle WebLogic Server Administration Console, for example:

https://< server_name >:7002/em



- Log in using the administrator credentials provided to you by the system administrator.
- 3. In the left navigation pane, click **Servers** and select **TopicsServer**.
- 4. At the top, expand WebLogic Server and select Web Services.
- Click EmpiricaTopicsPort.

After one or two minutes, information about the EmpiricaTopicsPort web service appears.

- Select the WSM Policies tab.
- 7. Click the Attach/Detach Policies link.
- 8. Under Directly Attached Policies, click Attach/Detach.
- In the Attach/Detach Policies(EmpiricaTopicsPort) window, search for one of the following policies in the Available Policies table:
 - If you configured SSL— oracle/ wss_username_token_over_ssl_service_policy
 - If you did not configure SSL— oracle/ wss_username_token_service_policy
- 10. Click Attach.

The policy appears in the Directly Attached Policies table.

Click Validate.

A confirmation message appears.

12. Click **OK**, then click **OK** again in the upper-right corner of the page.

After one or two minutes, the application applies a user name token service policy to the Oracle Empirica Topics web service.

Deploy the Oracle Empirica Signal application

Follow these instructions to deploy the Oracle Empirica Signal 9.2.3 upgrade.

In an Internet browser, navigate to the Oracle WebLogic Server Administration Console.
 For example:

```
https://<servername>:7002/console
```

- 2. Log in using administrator credentials.
- 3. In the Domain Structure pane, click **Deployments**.
- 4. In the Change Center pane, click Lock & Edit.
- 5. In the Deployments table, select the **Signal** checkbox.
- Click Update.
- Click Next, then click Finish.
- 8. Once the application has deployed successfully, in the left panel, click Activate Changes.
- In the Domain Structure section on the left, expand Environment, then choose Servers.
- 10. In the Control tab, select the **SignalServer** checkbox, then click **Shutdown**.
- 11. Select Force Shutdown Now, then click Yes.
- 12. Refresh until State is SHUTDOWN.
- **13.** Select the **SignalServer** checkbox, then click **Start**.



- 14. On the Start Server page, click Yes to start the server.
- 15. Refresh until State is RUNNING.
- 16. Log out.

Deploy the Oracle Empirica Topics web service

Follow these instructions to deploy the Oracle Empirica Topics 9.2.3 upgrade.

In an Internet browser, navigate to the Oracle WebLogic Server Administration Console.
 For example:

https://<servername>:7002/console

- 2. Log in using administrator credentials.
- 3. In the Domain Structure pane, click **Deployments**.
- 4. In the Change Center pane, click Lock & Edit.
- 5. In the Deployments table, select the **TopicsService** checkbox.
- 6. Click Update.
- 7. Click Next, then click Finish.
- 8. Once the application has deployed successfully, in the left panel, click Activate Changes.
- 9. In the Domain Structure section on the left, expand Environment, then choose Servers.
- 10. In the Control tab, select the **TopicsServer** checkbox, then click **Shutdown**.
- 11. Select Force Shutdown Now, then click Yes.
- 12. Refresh until State is SHUTDOWN.
- 13. Select the TopicsServer checkbox, then click Start.
- 14. On the Start Server page, click Yes to start the server.
- 15. Refresh until State is RUNNING.
- 16. Log out.



Post-installation configuration

- Set the passwords of the system and admin users (installation only)
 You must set passwords for the system and admin users for the product installation to be complete.
- Configure the Oracle Empirica Signal software
 Before you can use Oracle Empirica Signal, you must configure the Oracle Empirica Signal software.
- Import the sample topic workflow configuration (installation only)

 To use the Oracle Empirica Topics feature, import the sample topic workflow configuration.
- Install report data (installation only)
 You install a small data stub on the Oracle Database to enable the standard reports in the
 Oracle Empirica Signal application. The data stub includes the AERS (1q03:S) data
 configuration.
- Upgrade Oracle Business Intelligence or Oracle Analytics Server
 If you have Oracle Business Intelligence or Oracle Analytics configured with Oracle Empirica Signal, upgrade Oracle Analytics Server.

Set the passwords of the system and admin users (installation only)

You must set passwords for the **system** and **admin** users for the product installation to be complete.

The **system** account is used internally by the Oracle Empirica Signal software. You cannot use the **system** account to log in to the Oracle Empirica Signal application.

The **admin** account is a non-SSO superuser account. You use the **admin** account to log in initially so you can create local users and configure the Oracle Empirica Signal software.

Perform these steps using the non-privileged user account on the application server.

- $\textbf{1.} \quad \textbf{Navigate to the} < \texttt{INSTALL_DIR} > \texttt{/bin/PasswordReset directory, for example:} \\$
 - \$ cd /<INSTALL DIR>/bin/PasswordReset
- 2. Using a text editor, open the runPasswordReset.sh file.
- 3. Check the values of these environment variables and change them as necessary to the correct locations for your system:
 - JAVA HOME—Path to the Java installation directory.
 - COMMON_COMPONENTS_HOME—Path to the oracle_common subdirectory in the WebLogic Middleware directory.
 - JPS_CONFIG_FILE—Path to the OPSS configuration file, which is located in the config/fmwconfig subdirectory of the Oracle WebLogic Server domain home directory by default.

- JPS_MANIFEST_JAR—Path to the JPS_MANIFEST_JAR file for your version of the Oracle WebLogic Server.
- INSTALL_ROOT—Value of <INSTALL ROOT>.
- Save and close the file.
- **5.** Set the password for the **system** user:
 - a. In the command shell, execute the runPasswordReset.sh script for the system user, for example:
 - \$./runPasswordReset.sh system override-passwordmustchange

Logging information appears, and then a password prompt appears.

b. Enter the password for the **system** user, and press **Enter**.

By default, the password must contain at least eight characters, including an uppercase character, lowercase character, acceptable symbol, and number.

A confirmation prompt appears.

- c. Reenter the password, and press Enter.
 - If the passwords match, a confirmation message appears.
 - If the passwords don't match, an error message appears. You must run the command again and enter matching passwords.
- 6. Set the password for the admin user:
 - a. In the command shell, execute the runPasswordReset.sh script for the admin user, for example:
 - \$./runPasswordReset.sh admin

Logging information appears, and then a password prompt appears.

b. Enter the password for the **admin** user, and press **Enter**.



You use this password to log in to the Oracle Empirica Signal application as the **admin** user.

The password must contain at least eight characters, including an uppercase character, lowercase character, acceptable symbol, and number.

A confirmation prompt appears.

- c. Reenter the password, and press **Enter**.
 - · If the passwords match, a confirmation message appears.
 - If the passwords don't match, an error message appears. You must run the command again and enter matching passwords.

Configure the Oracle Empirica Signal software

Before you can use Oracle Empirica Signal, you must configure the Oracle Empirica Signal software.

For information about each task, see the User Guide and Online Help.



1. In a Web browser window, navigate to the login page, for example:

https://< server name >:7004/Signal



This example is for a site that requires SSL and does not use single sign-on.

If your site does not require SSL, use:

http://< server name >:7003/Signal

If your site uses SSO, use the native login port that Oracle or the administrator who configured SSO for the application provided to you.

If the login page appears, the site is set up correctly.

- 2. Enter the credentials necessary to log in as the admin user.
 - Username—admin
 - Password—The password you created in Set the passwords of the system and admin users.



For upgrades, use the credentials from your previous installation.

If this is a new installation, you are prompted to change your password.

a. Change the password.

You are logged out of the application.

b. Log in as the **admin** user with the new password.

The home page appears.

- **3.** Set your site options.
 - a. Click Settings and then click Set Site Options.

The Site Options page appears.

- b. Verify the SMTP server name.
- c. If R is installed on your system, and you set the rgps parameters in the listener.properties file, select Enable RGPS Option in MGPS Data Mining Runs.

Alternatively, verify that the option is deselected.

For more information, see Set up the listener.properties file.

- d. In the following fields, specify the email address for your support team:
 - From Email Address
 - Error Email

The default email address is for the Oracle Empirica Signal support team (esignalcontact www grp@oracle.com).



- e. Verify that all other site options are set correctly.
- f. Click Save.
- 4. Click Exit.

You are logged out.

- 5. If your site uses SSO, create a new user and test the SSO login:
 - a. Create an SSO user in your SSO application, if it does not already exist.
 - **b.** If you self-host Oracle Empirica Signal and use Oracle Access Manager for SSO, create the same user in the Oracle Empirica Signal application.

If Oracle hosts your instance of Oracle Empirica Signal, you do not need to perform this step.

- c. In a Web browser window, navigate to the login page.
- d. Log in as the newly created SSO user.

The home page appears.

e. Click Exit.

You are logged out.

Import the sample topic workflow configuration (installation only)

To use the Oracle Empirica Topics feature, import the sample topic workflow configuration.

These steps are required only if you intend to use the Oracle Empirica Topics feature and you have performed the steps in Set up the Topic Workflow database account (optional, installation only). However, Oracle recommends that you perform these steps so that you will have a sample configuration to copy and use as a template for new configurations. Do not edit the sample configuration.

- 1. Log in to the Oracle Empirica Signal application using the admin username.
- 2. Click Settings and then Manage Topic Workflow Configurations.
- 3. Click Import Workflow Configuration Account.

A dialog box appears, asking you to confirm the restoration. This message appears even if no topic workflow configurations were deleted.

- 4. Click OK.
- 5. Enter the following account name:

TOPIC WORKFLOW

- Click Import.
- Verify that Sample Topic Workflow Configuration is listed on the Manage Topic Workflow Configurations page.
- 8. Verify that the sample topic created is listed on the Topic Management page.

For information about working with topic workflow configurations, see the *User Guide and Online Help*.



Install report data (installation only)

You install a small data stub on the Oracle Database to enable the standard reports in the Oracle Empirica Signal application. The data stub includes the AERS (1q03:S) data configuration.

Do not perform this procedure if the AERS68_TO_1Q03 data set is already installed on the application server.

Before you begin, locate the Data Stub.zip file. The zip file contains:

- An Oracle DMP file.
- SQL scripts.
- A shell (.sh) script.
- An IMP file.

Perform these steps using the non-privileged user account on the application server.

- 1. Unpack the Data Stub.zip file:
 - a. Create a /u01/stage/data stub directory, for example:

```
$ mkdir /u01/stage/data_stub
```

b. Unzip the Data Stub.zip file into the data stub directory, for example:

```
$ unzip Data Stub.zip -d /u01/stage/data stub
```

- c. Verify that the /data_stub directory contains the same files as the Data_Stub.zip file
- Create the tablespaces and accounts used to store the production data:
 - a. Using a text editor, open the /u01/stage/data stub/create prod.sql file.
 - **b.** To create the data file in a location other than the default location of your database, specify the alternate location in the DATAFILE PATH variable.
 - c. In a command shell, use the following command to navigate to the /u01/stage/data stub directory:

```
$ cd /u01/stage/data stub
```

d. Enter the following command on one line to execute the script:

```
$ sqlplus system@<TNS NAME> @create prod
```

A password prompt appears.

e. Enter the Oracle system account password.

A second password prompt appears.

- f. Enter a password for the AERS68_TO_1Q03 account.
- g. Confirm the password.

The create_prod.sql script creates a tablespace for the data consisting of one 40 MB data file.

- 3. To load the data into the Oracle database:
 - a. Edit the load_prod.imp file, supplying your Oracle instance at the end of the userid line, for example:



userid=AERS68 TO 1Q03@orcl

b. Execute the following command to give execute permissions to load_prod.sh:

- \$ chmod u+x load prod.sh
- c. Execute the load prod.sh file using the following command:
 - \$./load prod.sh
- d. Enter the password for the AERS68_TO_1Q03 account that you created in step 2 f.
- 4. To import the supplied standard AERS (1Q03: S) configuration into the Oracle Empirica Signal application:
 - a. Log in to the Oracle Empirica Signal application using the admin user name.
 - b. Click **Settings** and then **Manage Configurations**.
 - c. Click Import Configurations.
 - d. Enter AERS68_TO_1Q03 as the account name.
 - e. Click OK.
 - f. Verify that the AERS (1q03: S) standard configuration is listed on the Manage Configurations page.
 - g. On the Manage Configurations page, click the configuration's Row Action menu, and select Edit.
 - h. On the Modify Configuration page, click Validate Now.
 - Click Continue.



For more information on working with configurations, see the *User Guide and Online Help*.

j. Optionally, delete the /data_stub directory and its contents. These files are no longer needed.

Upgrade Oracle Business Intelligence or Oracle Analytics Server

If you have Oracle Business Intelligence or Oracle Analytics configured with Oracle Empirica Signal, upgrade Oracle Analytics Server.

To upgrade Oracle Business Intelligence or Oracle Analytics, see Upgrade OBIEE/OAS for Oracle Empirica Topics 9.2.3 in the *Oracle Health Sciences Empirica Topics Reporting and Oracle Analytics Configuration Guide*.



Single sign-on (SSO)

Set up Oracle Access Manager (OAM)

To configure the Oracle Empirica Signal application to use single sign-on (SSO) using Oracle Access Manager (OAM), an OAM administrator runs the OAM register script. This script creates an OAM agent and uses an XML file as input, such as the following XML sample.

Set up Oracle Access Manager (OAM)

To configure the Oracle Empirica Signal application to use single sign-on (SSO) using Oracle Access Manager (OAM), an OAM administrator runs the OAM register script. This script creates an OAM agent and uses an XML file as input, such as the following XML sample.

Replace the bold values with appropriate values for your installation. In the following example, EmpiricaSignal is the name of your registered SSO agent or Webgate ID. The name must be unique in the OAM environment.

```
<?xml version="1.0" encoding="UTF-8"?>
<OAMRegRequest>
  <serverAddress>https://<OAM server>.oracle.com:7004</serverAddress>
    <hostIdentifier>Empirica Signal </hostIdentifier>
    <agentName>Empirica Signal</agentName>
    <cachePragmaHeader>no-cache</cachePragmaHeader>
    <cacheControlHeader>no-cache/cacheControlHeader>
    ctedResourcesList>
     <resource>/Signal/</resource>
      <resource>/Signal</resource>
    </protectedResourcesList>
    <publicResourcesList>
      <resource>/index.html</resource>
     <resource>/Signal/ping.jsp</resource>
     <resource>/Signal/utlLogout.jsp</resource>
     <resource>/Signal/include/logout.inc</resource>
      <resource>/Signal/css/*</resource>
    </publicResourcesList>
    <excludedResourcesList>
      <resource>/Signal/image/*</resource>
     <resource>/Signal/servlet/event/</resource>
     <resource>/js/libs/**</resources>
    </excludedResourcesList>
</OAMRegRequest>
```



9

Get the application server ready for Oracle Empirica Signal with Oracle WebLogic Server 12c

 About getting the application server ready for Oracle Empirica Signal with Oracle WebLogic Server 12c

You must perform these procedures before you install the Oracle Empirica Signal application.

- Install Oracle WebLogic Server 12c
 Download and install Oracle WebLogic Server 12c.
- Install Oracle ADF Runtime 12c
 Download and install Oracle ADF Runtime 12c.
- Install Oracle Fusion Middleware Repository Creation Utility (RCU) and create repositories
 Install the Oracle Fusion Middleware Repository Creation Utility (RCU) and create
 repositories.
- Set up Oracle WebLogic Server domain 12c
 Complete these tasks to set up the Oracle WebLogic Server domain 12c.

About getting the application server ready for Oracle Empirica Signal with Oracle WebLogic Server 12c

You must perform these procedures before you install the Oracle Empirica Signal application.

For information about the required versions of each component and where to download the components, see the System Requirements chapter in the *Release Notes*.



For any input, do not include trailing whitespace. Most text is case sensitive. Paths might vary depending on your environment.

- Prerequisites
 Complete these prerequisite installation tasks.
- Set environment variables
 Edit configuration scripts to set environment variables for the command shells you use on your application server using your privileged account and sudo.

Prerequisites

Complete these prerequisite installation tasks.

JDK version 8 update 201 (or later) must be installed on the application server.

- The application server must have enough free space. For more information, see the System Requirements section in the *Release Notes*.
- Oracle 19c database must be installed on the DB server.
- The corresponding Oracle database client must be installed on the application server.

Set environment variables

Edit configuration scripts to set environment variables for the command shells you use on your application server using your privileged account and sudo.

To edit files, you use commands such as the following:

```
$ sudo su - root
# vi <file_name>
# exit
```

The first command logs you in as root. If you are prompted for your password after entering this command, enter your password, not the password of root.

You must log out and log in again for the changes you make in this section to take effect.

To set environment variables, perform the following:

- 1. Edit the /etc/profile file as follows:
 - a. Add the following lines to the file.

```
ORACLE_BASE=/u01/app/oracle
ORACLE_HOME=/u01/app/oracle/product/19.3.0
NLS_LANG=AMERICAN_AMERICA.AL32UTF8
JAVA_HOME=<jdk_home_location>
export ORACLE_BASE ORACLE_HOME NLS_LANG JAVA_HOME
```



For the values in the first two lines, use information about your Oracle client installation. For $<jdk_home_location>$, use the location where the JDK is installed.

b. Add the bin directories of your Oracle client and Java installations to the PATH variable. For example, add the following line as the last line where the PATH variable is set:

```
export PATH=$ORACLE_HOME/bin:$JAVA_HOME/bin:$PATH
```

- 2. Edit the /etc/csh.login file as follows:
 - a. Add the following lines to the file.

```
setenv ORACLE_BASE /u01/app/oracle
setenv ORACLE_HOME /u01/app/oracle/product/19.3.0
setenv NLS_LANG AMERICAN_AMERICA.AL32UTF8
setenv JAVA HOME <jdk home location>
```



b. Add the bin directories of your Oracle client and Java installations to the PATH variable. For example, add the following line as the last line where the PATH variable is set:

setenv PATH \${ORACLE HOME}/bin:\${JAVA HOME}/bin:\${PATH}

Install Oracle WebLogic Server 12c

Download and install Oracle WebLogic Server 12c.

To download Oracle WebLogic Server 12c, perform the following:

- 1. Go to https://docs.oracle.com/en/middleware/fusion-middleware/12.2.1.4/mstrd/index.html or to http://edelivery.oracle.com.
- Under Oracle WebLogic Server 12.2.1.4, select Generic.

Perform these steps using the non-privileged user account on the application server.

To install Oracle WebLogic Server 12c:

1. In the command shell, unzip the downloaded file, for example:

```
$ unzip fmw 12.2.1.4.0 wls Disk1 1of1.zip
```

2. Run the following:

```
$ java -jar fmw_12.2.1.4.0_wls.jar
```

WebLogic Fusion Middleware 12c Oracle WebLogic Server and Coherence Installation is launched.

Click Next.

The Auto Updates page appears.

Select the relevant option and click Next.

The Installation Location page appears.

5. Enter the appropriate location for Oracle Home. For example:

/u01/app/oracle/product/Middleware12c

Click Next.

The Installation Type page appears.

- Select WebLogic Server.
- 8. Click Next.

The Prerequisite Checks page appears.

Click Next.

The Installation Summary page appears.

10. Verify the installation summary information and click **Install**.

The Installation Progress page appears.

11. When progress status is 100%, click Next.

The Installation Complete page appears.

12. Click Finish.

The Configuration Type page appears

13. Click Cancel.

A confirmation dialog appears.

14. Click Yes.



Install Oracle ADF Runtime 12c

Download and install Oracle ADF Runtime 12c.

To download Oracle ADF Runtime 12c:

- 1. Go to https://www.oracle.com/middleware/technologies/weblogic-server-installers-downloads.html or to http://edelivery.oracle.com .
- 2. Under Application Development Runtime, select version 12.2.1.4 and download the file.
- 3. Save the fmw_12.2.1.4.0_infrastructure_Disk1_lof1.zip file in the following location:

/u01/stage/ADF

4. Extract the archive file.

To install Oracle ADF Runtime 12c:

 From the shell, change to the location where the extracted ADF jar file is located. For example:

\$ cd /u01/stage/ADF

2. Execute the following command:

\$ java -jar fmw 12.2.1.4.0 infrastructure.jar



Ignore the error about the monitor. When confirmation is asked, enter ${\bf Y}$ and press the ${\bf Return}$ key.

The ADF installation wizard is launched.

Click Next.

The Auto Updates page appears.

4. Select the relevant option and click Next.

The Installation Location page appears.

5. For the Oracle Home, enter the directory created during WebLogic 12c installation. For example:

/u01/app/oracle/product/Middleware12c

Click Next.

The Installation Type page appears.

- 7. Select Fusion Middleware Infrastructure.
- 8. Click Next.

The Prerequisite Checks page appears.

When prerequisite checks status is 100%, click Next. The Installation Summary page appears.

10. Verify the installation summary information and click **Install**.

The Installation Progress page appears.

11. When progress status is 100%, click **Next**. The Installation Complete page appears.



12. Click Finish.

Install Oracle Fusion Middleware Repository Creation Utility (RCU) and create repositories

Install the Oracle Fusion Middleware Repository Creation Utility (RCU) and create repositories.

 To locate the RCU shell script, go to <Middleware_Home>/oracle_common/bin. For example:

/u01/app/oracle/product/Middleware12c/oracle common/bin

2. Execute the following command:

\$./rcu

The Repository Creation Utility is launched.

Click Next.

The Create Repository page appears.

- Under Create Repository, select System Load and Product Load.
- Click Next.

The Database Connection Details page appears.

- 6. From the Database Type drop-down list, select Oracle Database.
- 7. Enter the database information, including a user name with SYSDBA privileges.
- 8. From the Role drop-down list, select SYSDBA.
- Click Next.
- 10. If prompted, click **Ignore** to ignore the warning about supported databases.

The Checking Prerequisites dialog box appears.

11. When checking is complete, click **OK**.

The Select Components page appears.

- 12. In the Create new prefix field, enter a prefix, such as EMPIRICA.
- 13. Expand AS Common Schemas.
- 14. Select Metadata Services and Oracle Platform Security Services.

Audit-related checkboxes are automatically selected.

15. Click Next.

The Repository Creation Utility - Checking Prerequisites dialog box appears.

16. Click **OK**.

The Schema Passwords page appears.

17. Specify the schema passwords and click Next.

The Map Tablespaces page appears.

18. Click Next.

A confirmation dialog box appears.

19. Click **OK**.



The tablespaces are validated and created.

20. Click OK.

The Summary page appears.

21. Click Create.

After the repository is created, the Completion Summary page appears.

22. Click Close.

Set up Oracle WebLogic Server domain 12c

Complete these tasks to set up the Oracle WebLogic Server domain 12c.

- Create and configure Oracle WebLogic Server domain 12c
 Follow these steps to create and configure Oracle WebLogic Server domain 12c.
- Create a boot identity file

A boot identity file contains the user credentials for starting and stopping an instance of Oracle WebLogic Server. An administration server or managed server can refer to this file for user credentials instead of prompting at the command line to provide them.

- Create the nodemanager.properties file 12c
 Follow these steps to create the nodemanager.properties file.
- Start the Oracle WebLogic Server and the Node Manager
 Follow these steps to start the Oracle WebLogic Server and the Node Manager.
- Create a data source for credential access
 Follow these steps to set up a data source in the Oracle WebLogic Server Administration
 Console for the credential store.
- Configure SSL
 Perform the following steps to configure the Oracle WebLogic Server to use SSL for production use of the Oracle Empirica Signal application.

Create and configure Oracle WebLogic Server domain 12c

Follow these steps to create and configure Oracle WebLogic Server domain 12c.

1. In a command shell,

```
go to <Middleware_Home>/wlserver/common/bin. For example:
/u01/app/oracle/product/Middleware12c/oracle common/common/bin
```

2. Execute the following command:

\$./config.sh



If you get a permission error, change permissions on <code>config.sh</code> to <code>chmod u+x config.sh</code>.

The Oracle Fusion Middleware Configuration Wizard is launched.

3. Select **Create a new domain** and specify the domain location, for example:



/u01/app/oracle/product/Middleware12c/user_projects/domains/empirica

where empirica is the domain name.

Click Next.

The Templates page appears.

- Select Create Domain Using Product Templates.
- **6.** From the Available Templates list, select the following templates:
 - Basic WebLogic Server Domain [wlserver]
 - Oracle Enterprise Manager [em]
 - Oracle WSM Policy Manager [oracle_common]
 - Oracle JRF [oracle_common]
 - WebLogic Coherence Cluster Extension [wlserver]
- Click Next.

The Application Location page appears.

- 8. Check the Domain name, Domain location, and Application location.
- Click Next.

The Administrator Account page appears.

- 10. Enter a user name and password for Oracle WebLogic Server administration.
- 11. Click Next.

The Domain Mode and JDK page appears.

- 12. Select **Production** and check the JDK location.
- 13. Click Next.

The Database Configuration Type page appears.

- 14. Select RCU Data.
- 15. Enter the database connection details as follows:
 - Vendor—Select Oracle.
 - **Driver**—Select the Oracle thin driver for service connections.
 - DBMS/Service—Use the service name for your database.
 - Host Name—Use your database host name.
 - Port—Specify the port number for the Oracle database service.
 - Schema Owner—Enter a value such as EMPIRICA_STB.
 - Schema Password

 —Enter the password that you used when you created the schema
 in Install Oracle Fusion Middleware Repository Creation Utility (RCU) and create
 repositories.
- 16. Click Get RCU Configuration, then click Next.

The JDBC Component Schema page appears.

17. Select all checkboxes and click Next.

The JDBC Component Schema Test page appears.

18. Click Next.



19. After all connections have been tested successfully, click Next.

The Advanced Configuration page appears.

- 20. Select the following checkboxes:
 - Administration Server
 - Node Manager
 - Topology
 - Deployments and Services
- 21. Click Next.

The Administration Server page appears.

- 22. Select Enable SSL and specify 7002 for SSL Listen Port.
- 23. Click Next.

The Node Manager page appears.

24. Select Per Domain Default Location and enter node manager credentials.



Keep the node manager credentials for future reference.

25. Click Next.

The Managed Servers page appears.

- **26.** Click **Add** and create a server with the following details:
 - Server Name—SignalServer
 - Listen Address—<the full name of the application server>
 - Listen Port—7003
 - Enable SSL—<selected>
 - SSL Listen Port—7004
 - Server Groups—Unspecified
- 27. Click **Add** and create a server with the following details:
 - Server Name—TopicsServer
 - Listen Address—<the full name of the application server>
 - Listen Port—7005
 - Enable SSL—<selected>
 - SSL Listen Port—7006
 - Server Groups—Unspecified
- 28. Click Next.

The Clusters page appears.

29. Click Next.

The Server Templates page appears.

30. Click Next.



The Coherence Clusters page appears.

31. Click Next.

The Machines page appears.

- 32. Select the Unix Machine tab.
- 33. Click Add and create a machine with the following details:
 - Name—SignalMachine
 - Node Manager Listen Address—<the full name of the application server>
 - Node Manager Listen Port—5556
- 34. Click Next.

The Assign Servers to Machines page appears.

- **35.** From the Servers list, select **SignalServer** and **TopicsServer** and move them to the **SignalMachine** in the Machines list.
- 36. Click Next.

The Virtual Targets page appears.

37. Click Next.

The Partitions page appears.

38. Click Next.

The Deployments Targeting page appears.

- 39. Assign a deployment to the AdminServer:
 - a. In the list of Target Servers on the right, select AdminServer.
 - If not already listed under AdminServer/AppDeployment on the right, select the wsm-pm

AppDeployment on the left and move it to the AdminServer target to augment the AppDeployment list.

- c. If not already listed under AdminServer / Library on the right, select the oracle.wsm.idmrest.sharedlib Library on the left and move it to the AdminServer target to augment the Library list.
- **40.** To assign a deployment to the SignalServer, perform the following:
 - a. In the list of Target Servers on the right, select SignalServer.
 - Assign the wsm-pm application to the server.
 - **c.** Assign the oracle.wsm.idmrest.sharedlib library to the server.
- **41.** Repeat Step 39 for TopicsServer.
- 42. Click Next.

The Services Targeting page appears.

- 43. If not already listed, add the following services to the SignalServer:
 - From JDBCSystemResource: mds-owsm
 - From the Startup Class directory: JRF Startup Class
- 44. Repeat Step 43 for TopicsServer.
- 45. Click Next.



The Configuration Summary page appears.

46. Click Create.

The Configuration Progress page appears.

When the configuration is complete, a message appears stating that the domain has been created.

47. Click Next.

The End of Configuration page appears.

48. Click Finish.

Create a boot identity file

A boot identity file contains the user credentials for starting and stopping an instance of Oracle WebLogic Server. An administration server or managed server can refer to this file for user credentials instead of prompting at the command line to provide them.

Because the credentials are encrypted, using a boot identity file is more secure than storing plain text credentials in a startup or shutdown script. There can be a different boot identity file for each server in a domain.

For the Production Mode domain, you can create the boot identity file manually, as explained below.

Check that the following directory is present in the domain directory:

```
$WL HOME/user projects/domains/<domain name>/servers/AdminServer
```

- 2. If the AdminServer was started with the start script in a Terminal window, click **Ctrl + C** in that window to stop the server.
- 3. Navigate to the domain directory \$WL_HOME/user_projects/domains/ <domain name>/servers/AdminServer, for example:

/u01/app/oracle/product/Middleware12c/user_projects/domains/empirica/servers/AdminServer

- 4. If not present, create a subdirectory called security.
- 5. Navigate to the security directory and execute the following command:

```
$ cat - > boot.properties
username=weblogic
password= <domain_password>
```

- 6. To save the file and exit the editor, press Ctrl+D.
- 7. From the \$WL_HOME/user_projects/domains/<domain_name>/bin directory, restart the server using the ./startWebLogic.sh command.
- 8. When messages that say RUNNING appear, press Ctrl+C.
- 9. From the \$WL_HOME/user_projects/domains/<domain_name>/servers/
 AdminServer/security directory, execute cat boot.properties to verify that:
 - The user name and password have been encrypted by the server.
 - A comment has been added with the timestamp when encryption occurred.



Create the nodemanager.properties file 12c

Follow these steps to create the nodemanager.properties file.

Perform these steps using the non-privileged user account on the application server.

1. Navigate to the \$WL_HOME/user_projects/domains/<domain_name>/bin directory.
For example:

/u01/app/oracle/product/Middleware12c/user projects/domains/empirica/bin

2. Start the Node Manager by executing the following command:

```
$ ./startNodeManager.sh <listen address> 5556
```

where sten_address> is the value you entered in Create and configure Oracle WebLogic Server domain 12c.

When the <secure socket listener started on port 5556> message appears in the Console, press Ctrl+C.

The Node Manager stops.

4. Navigate to the \$WL_HOME/user_projects/domains/empirica/nodemanager directory. For example:

/u01/app/oracle/product/Middleware12c/user_projects/domains/empirica/nodemanager

- 5. Review the nodemanager.properties file:
 - a. Edit the nodemanager.properties file. For example:

```
$ vi nodemanager.properties
```

- **b.** Set the values of the following properties to **true**:
 - SecureListener



For a non-SSL environment, set this property to **false**.

- weblogic.StopScriptEnabled
- weblogic.StartScriptEnabled
- **6.** Save the file, then exit the vi editor.

Start the Oracle WebLogic Server and the Node Manager

Follow these steps to start the Oracle WebLogic Server and the Node Manager.

1. Navigate to the \$WL_HOME/user_projects/domains/<domain_name>/bin directory using a command such as the following:

\$ cd /u01/app/oracle/product/Middleware12c/user projects/domains/ empirica/bin

2. Execute the following command:

\$ nohup ./startNodeManager.sh &



3. To restart the administration server, execute the following command:

```
$ nohup ./startWebLogic.sh > /dev/null &
```

- 4. Verify that the Node Manager can be reached:
 - a. In a Web browser, enter the URL for the Oracle WebLogic Server Administration Console, such as the following:

```
https:// <servername>:7002/console
```

- b. Log in using the Oracle WebLogic Server administrator credentials.
- c. In the left pane, expand **Environment** and select **Machines**.

The Summary of Machines page appears.

d. In the list of machines, select SignalMachine.

The Settings for SignalMachine page appears.

- Select the Monitoring tab.
- Confirm that the status is Reachable.

If the status is **Inactive**, the Node Manager is not running.

- 5. Start Managed Servers using the Node Manager:
 - In a Web browser, enter the URL for the Oracle WebLogic Server Administration Console, such as the following:

```
https:// <servername>:7002/console
```

- b. Log in using the Oracle WebLogic Server administrator credentials.
- c. In the left pane, expand **Environment** and select **Servers**.
- d. Select the Control tab.
- Select SignalServer and TopicsServer, and click Start.
- Click Yes.
- Apply the JRF Template to the Managed Server:
 - a. In a Web browser, enter the URL for the Oracle Enterprise Manager, such as the following:

```
https:// <servername>:7002/em
```

- b. Log in using the Oracle WebLogic Server administrator credentials.
- c. From the navigation icon in the upper-left corner, expand Weblogic Domain, expand empirica, and select SignalServer.
- d. Click the Lock icon and select Lock & Edit.
- e. At the top of the page, click Apply JRF Template.
- Click the Lock icon and select Activate Changes.
- g. From the navigation icon in the upper-left corner, expand **WebLogic Domain**, expand **empirica**, and select the **TopicsServer**.
- h. Click the Lock icon and select Lock & Edit.
- i. At the top of the page, click Apply JRF Template.
- j. Click the Lock icon and select Activate Changes.
- 7. Restart the SignalServer and TopicsServer managed servers:



In a Web browser, enter the URL for the Oracle WebLogic Server Administration Console, such as the following:

https:// <servername>:7002/console

- b. Log in using the Oracle WebLogic Server administrator credentials.
- In the left pane, expand Environment and select Servers.

The Summary of Servers page appears.

- d. Select the Control tab.
- e. From the list of servers, select **SignalServer** and **TopicsServer**.
- f. From the **Shutdown** drop-down list, select **Force Shutdown Now**.
- g. After the states of the SignalServer and TopicsServer change to Shutdown, select the checkboxes for SignalServer and TopicsServer in the table, and click Start.
- h. In the left panel, expand **Environment** and select **Coherence Clusters**.
- i. In the right panel, click the **defaultCoherenceCluster** link.
- j. Click the **Members** tab and check if any server is part of the cluster.
- k. Remove server(s) from the cluster by unchecking corresponding box(s). To do this you may need to click the Lock & Edit button on the left panel.
- I. When done, click Activate Changes.

Create a data source for credential access

Follow these steps to set up a data source in the Oracle WebLogic Server Administration Console for the credential store.

1. In a Web browser, enter the URL for the Oracle WebLogic Server Administration Console, such as the following:

https:// <servername>:7002/console

- 2. In the left pane, expand Services, and select Data Sources.
- 3. In the upper-left corner of the page, in the Change Center section, click Lock & Edit.
- In the right pane, click the New button, and from the drop-down list that appears, select Generic Data Source.

The JDBC Data Source Properties page appears.

- 5. Enter values for the following fields:
 - Name—For example, enter Empirica Credential Store.
 - JNDI Name—For example, enter jdbc/mds/opss.
- Click Next.

The JDBC Data Source Properties page appears.

- 7. From the **Database Driver** drop-down list, choose:
 - Oracle's Driver (Thin XA) for Instance Connections; Versions: Any—to address
 your database using its instance name.
 - Oracle's Driver (Thin XA) for Service Connections; Versions: Any—to address your database using its service name.
- Click Next.



The Transaction Options page appears.

Click Next.

The Connection Properties page appears.

- **10.** Fill in the following names:
 - Database Name—Depending on your driver choice, enter the service name or SID.
 - Host Name
 - Port
 - Database User Name—For example, EMPIRICA_OPSS.
 - Password, Confirm Password—Enter the password that you entered when you installed RCU.
- 11. Click Next.

The Test Database Connection page appears.

12. At the top of the page, click **Test Configuration**.

A Connection Test Succeeded message appears.

13. Click Next.

The Select Targets page appears.

- 14. From the Servers list, select AdminServer, SignalServer, and TopicsServer.
- 15. Click Finish.
- **16.** In the upper-left corner of the page, in the Change Center section, click **Activate Changes**.

A message appears, indicating that the changes have been activated. The Credential Store Data Source entry is created.

Configure SSL

Perform the following steps to configure the Oracle WebLogic Server to use SSL for production use of the Oracle Empirica Signal application.

The Oracle WebLogic Server is configured by default to use a demo SSL certificate. This certificate is intended for demonstration purposes only. Do not use the demo SSL certificate for production environments.

For more information, see the following document:

https://docs.oracle.com/middleware/1221/wls/SECMG/ssl.htm

- Obtain an SSL certificate from a Certification Authority.
- 2. Using the Oracle WebLogic Server Administration Console, configure AdminServer, SignalServer, and TopicsServer to use your SSL certificate.

For more information, see the following document:

https://docs.oracle.com/middleware/1221/wls/SECMG/identity trust.htm#SECMG365

3. Configure the Node Manager to use your SSL certificate.

For more information, see the following document:

https://docs.oracle.com/middleware/12213/wls/NODEM/java nodemgr.htm#NODEM173

Troubleshooting

 Issue: An error occurs when you try to log in because the application cannot connect to the database

Try these steps in order, testing after each step to determine whether the issue is resolved.

- Issue: The password for the OPSS database account changes
 This issue occurs when the password for the EMPIRICA_OPSS account expires or changes, for example, due to password expiration policies.
- Issue: The password for the MDS account changes
 This issue occurs when the password for the EMPIRICA_MDS account expires or changes, for example, due to password expiration policies.

Issue: An error occurs when you try to log in because the application cannot connect to the database

Try these steps in order, testing after each step to determine whether the issue is resolved.

Resolution:

1. Restart Oracle WebLogic Server using the following commands:

```
$ ./stopWebLogic.sh
$ nohup ./startWebLogic.sh > /dev/null &
```

- 2. In the Oracle WebLogic Server Administration Console, verify that the data source user name is set up as **EMPIRICA_OPSS** with the correct password. Test the connection.
- 3. In the Oracle Enterprise Manager, under System Policies, verify that the codebase paths match the installation.
- **4.** To check for specific permission errors, enable debugging, and examine error messages in the log file:
 - a. Open the Oracle WebLogic Server start script (startWebLogic.sh) in your domain directory, for example:

```
/u01/app/oracle/Middleware12c/user projects/domains/empirica/bin
```

b. Add the following text below the # START WEBLOGIC entry in the file:

```
JAVA_OPTIONS="${JAVA_OPTIONS} -Djava.security.debug=access,failure -
Djps.auth.debug=true -Djps.auth.debug.verbose=true"
```

c. Restart Oracle WebLogic Server using the following commands:

```
$ ./stopWebLogic.sh
$ nohup ./startWebLogic.sh > /dev/null &
```

d. Examine the startWebLogic.sh output to see whether it contains the following permission error:

```
java.security.AccessControlException: access denied
```

e. If the error exists, look below the error at the code source, such as the following text:

```
CodeSource=file:/u01/app/oracle/product/Middleware12c/user_projects/domains/empirica/servers/SignalServer/stage/Signal/Signal/...
```

- f. In Oracle Enterprise Manager, update the permission codebase paths in System Policies to reflect the missing permission.
- g. Restart Oracle WebLogic Server using the following commands:

```
$ ./stopWebLogic.sh
$ nohup ./startWebLogic.sh > /dev/null &
```

h. After the permission issue is resolved, remove the debug options, and start Oracle WebLogic Server using the following commands:

```
$ ./stopWebLogic.sh
$ nohup ./startWebLogic.sh > /dev/null &
```

Issue: The password for the OPSS database account changes

This issue occurs when the password for the **EMPIRICA_OPSS** account expires or changes, for example, due to password expiration policies.

Resolution:

You must register the new password in the following locations:

The bootstrap wallet file

 In a command shell, navigate to the directory for the bootstrap wallet file using a command such as:

```
$ cd /u01/app/oracle/Middleware12c/user-projects/domains/empirica/config/
fmwconfig
```

2. In a command shell, start **WLST** using a command such as:

```
$ /u01/app/oracle/Middleware12c/oracle common/common/bin/wlst.sh
```

The following prompt appears:

```
wls:/offline>
```

3. Execute the following command:

```
modifyBootStrapCredential(jpsConfigFile='./jps-config.xml',
username='< user >', password='< new password >')
```

where:

- < user > is the name of the OPSS schema database account, such as EMPIRICA OPSS.
- < new password > is the new password of the OPSS schema database account.
- To exit WLST, execute the exit() command.

The data source associated with the OPSS schema database account

1. Open the Oracle WebLogic Server Administration Console.

- Expand Services, and select Data Sources.
- Select the Data Source entry.
 If you followed the recommendations in Create a data source for credential access, the data source is named Empirica Credential Store, and the JDNI name is jdbc/mds/opss.
- 4. Select the **Configuration** tab, and select the **Connection Pool** tab.
- 5. In the Change Center section on the left, click Lock & Edit.
- 6. Scroll to the **Password** and **Confirm Password** fields.
- 7. Enter the account password in both fields, and click **Save**.
- 8. In the Change Center section on the left, click **Activate Changes**.

Issue: The password for the MDS account changes

This issue occurs when the password for the **EMPIRICA_MDS** account expires or changes, for example, due to password expiration policies.

Perform the following steps to register the new password in the data source associated with the MDS schema database account.

- Open the Oracle WebLogic Server Administration Console.
- Expand Services, and select Data Sources.
- 3. Select the Data Source entry.
- 4. Select the mds-owsm data source.
- 5. Select the **Configuration** tab, and select the **Connection Pool** tab.
- 6. In the Change Center section on the left, click Lock & Edit .
- 7. Scroll to the **Password** and **Confirm Password** fields.
- 8. Enter the account password in both fields, and click **Save**.
- In the Change Center section on the left, click Activate Changes.



11

Change log

Date	Part number	Description
July 2025	G31185-03	Updated some backend structural elements that don't impact the information in this publication.
November 2024	G16537-01	 Changes for 9.2.3: Updated file names and versions as necessary. Removed outdated content. Updated applying upgrade scripts. Updated content, for more information see: Restore site-specific properties files Set up the webvdmefonts.properties file
August 2023	F82912-01	Rebranded as Life Sciences document. No changes to 9.2.2 content; however, the 9.2.2 to 9.2.2.1 Upgrade Guide refers to this guide.
April 2023	F70453-01	9.2.2 release.
August 2022	F56762-02	Fixed broken links.
July 2022	F56762-01	9.2.1 release.

