

Oracle® Health Sciences Empirica Signal

Installation Guide

Release 8.0.1.0.316

E73006-01

March 2016

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Preface

The preface includes the following section:

- [Audience](#)
- [Documentation accessibility](#)
- [Related documents](#)
- [Finding prerequisite software for Oracle Health Sciences applications](#)
- [Conventions](#)

Audience

This document is intended for database and system administrators who are responsible for installing, upgrading, and configuring the Empirica Signal and Topics software.

Documentation accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Related documents

For more information, see the following documents in the Oracle Health Sciences Empirica Signal Release 8.0.1 documentation set:

- *Oracle Health Sciences Empirica Signal and Topics User Guide*
- *Oracle Health Sciences Empirica Signal Release Notes*
- *Oracle Health Sciences Empirica Signal Known Issues*
- *Oracle Health Sciences Empirica Topics Reporting and Oracle Business Intelligence Configuration Guide*
- *Oracle Health Sciences Empirica Signal Secure Configuration Guide*

- *Oracle Health Sciences Empirica Signal Third Party Licenses and Notices*
- *Oracle Health Sciences Empirica Topics API Guide*

Finding prerequisite software for Oracle Health Sciences applications

Prerequisite software for Oracle Health Sciences applications is available from the following locations:

- Download the latest major or minor release from the Oracle Software Delivery Cloud (<https://edelivery.oracle.com/>).

For information on the credentials that are required for authorized downloads, click **FAQs** on the main page of the Oracle Software Delivery Cloud portal.

- Download subsequent patch sets and patches from My Oracle Support (<https://support.oracle.com>).

To find patch sets or patches, select the **Patches & Updates** tab.

If a previous version of prerequisite software is no longer available on the Oracle Software Delivery Cloud, log a software media request Service Request (SR). Previous versions of prerequisite software are archived and can usually be downloaded. After you open an SR, you can check its status:

- US customers: Call 1-800-223-1711.
- Outside the US: Check www.oracle.com/us/support/contact/index.html for your local Oracle Support phone number.

For more information on logging a media request SR, go to My Oracle Support for Document 1071023.1: Requesting Physical Shipment or Download URL for Software Media

(<https://support.oracle.com/epmos/faces/DocumentDisplay?id=1071023.1>).

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.
<sample>	You should replace the angle brackets and italicized placeholder text with appropriate text.

Empirica Signal Overview

This chapter includes the following sections:

- [Introduction to the Empirica Signal software](#)
- [Assumptions](#)
- [Physical configuration options](#)
- [Components of the installation package](#)

Introduction to the Empirica Signal software

The Empirica Signal software is a web-based analysis environment for generating statistical scores for combinations of drugs and events in a drug safety database, and for detecting signals (unexpected associations of drugs and events).

Assumptions

This guide assumes familiarity with the following activities:

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

Physical configuration options

The 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

The installation package contains the following components.

File	Description
Signal_Install.tar.gz	Components for installing the Empirica Signal software.
Signal-8_0_1_0_XXX.zip	Build that you install, where XXX is the build number.
Database.zip	Scripts for setting up the Empirica Signal database account.

File	Description
IQ_Test.doc	Document for installation qualification information.
OQ_Test.doc	Document for operational qualification information.
UQ_Test.doc	Document for upgrade qualification information.

Note: If you plan to document your installation or upgrade with the provided IQ_Test.doc or UQ_TEST.doc, familiarize yourself with the contents of the corresponding document and fill it in as you proceed through the instructions in this document.

Planning your installation

This chapter includes the following topics:

- [How to use this document](#)
- [Prerequisites for upgrading from 7.3.3.x to 8.0.1](#)
- [Migrating the database when upgrading from 7.3.3.x to 8.0.1](#)
- [Preparing the environment for the Empirica Signal installation](#)
- [Information to collect before you begin](#)

How to use this document

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

Sections that are installation-specific or upgrade-specific are labeled as such. Procedures without installation-specific or upgrade-specific labels are applicable to all upgrades and installations.

Prerequisites for upgrading from 7.3.3.x to 8.0.1

You can upgrade from releases 7.3.3.3, 7.3.3.4, or 7.3.3.5 to release 8.0.1 of the Empirica Signal software.

If you are running a release that is earlier than 7.3.3.3, you must upgrade to release 7.3.3.3 before upgrading to release 8.0.1. For information on upgrading to release 7.3.3.3, see the *Empirica Signal Windows 2003/2008 Server Installation and Upgrade Instructions* for release 7.3.3.3.360.

If you are upgrading from release 8.0 to 8.0.1, skip to [Chapter 8, "Upgrading the Signal application software from 8.0 to 8.0.1"](#).

Migrating the database when upgrading from 7.3.3.x to 8.0.1

If you are migrating your database from Microsoft Windows to Linux, back up your database first. Work with a database administrator to migrate the contents of your database to a Linux system.

Preparing the environment for the Empirica Signal installation

Before installing, make sure that the application and database servers meet the software requirements described in the *Empirica Signal Release Notes*.

Appendix B describes how to install some of the required software:

1. [Installing WebLogic](#)
2. [Installing Oracle ADF Runtime](#)
3. [Installing RCU and creating repositories](#)
4. [Setting up the WebLogic domain:](#)
 - a. [Creating and configuring the WebLogic domain.](#)
 - b. [Creating the nodemanager.properties file](#)
 - c. [Starting WebLogic and the Node Manager](#)
 - d. [Creating a data source for credential access.](#)
 - e. [Associating the credential store with the data source.](#)
 - f. [Restarting the SignalServer managed server](#)

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.

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 WebLogic server to the same time zone.

Oracle recommends using the UTC time zone for both servers.

- The location of the data files for the instance, if you plan to create the tablespaces in the same location. For example:

```
/u01/app/oradata/<sid>
```

Application server

- JDK installation location, such as:

```
/usr/java/jdk1.7.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/11.2.0
```
- The following information about WebLogic:
 - Installation location, such as:

```
/u01/app/oracle/Middleware
```
 - URL for the WebLogic Administration Console, such as:

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

- URL for Oracle Enterprise Manager, such as:
<https://<servername>:7002/em>
- User name and password of a WebLogic administrator.
- For single sign-on (SSO) installations, the following information:
 - Native login port number to use for initially changing the Empirica Signal admin password.
 - Port number to use for normal SSO Empirica Signal connections on the server.
 - SSO logout URL.
 - SSO header, which contains the user name.

Note: If you plan to document your installation or upgrade with the provided IQ_Test.doc or UQ_TEST.doc, familiarize yourself with the contents of the corresponding document and fill it in as you proceed through the instructions in this document.

Preparing the database and application servers

This chapter includes the following topics:

- Required privileges for the database server
- Required privileges for the application server
- Requirements and assumptions for the Linux accounts
- Preparing the installation staging area
- Configuring the connection to the Oracle database
- Setting up the application database account (install only)
- Setting up the Sample Topic Workflow Oracle account (optional; install only)
- Installing test data (optional; install only)
- Applying upgrade scripts to migrated schemas to upgrade from 7.3.3.x to 8.0.1
- Preparing the environment on the application server
- Starting WebLogic and the Node Manager

Required privileges for the database server

You must have access to the following types of accounts:

- 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.
- A user account with sudo privileges. This user executes certain steps as root.
This document refers to this user account as the privileged user account.

Required privileges for the application server

You must have access to the following types of user accounts:

- A user account that allows the user to start and stop the WebLogic server.
This account should not have sudo privileges.
This document refers to this user account as the non-privileged user account.
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.

Requirements and assumptions for the Linux accounts

This section discusses the requirements and assumptions for the Linux accounts.

Assumptions about environment variables and Linux user accounts

This guide provides steps for setting several system-wide environment variables. This guide sets the following system-wide variables:

- *ORACLE_HOME*
- *ORACLE_BASE*
- *ORACLE_SID*
- *PATH*

Note: This guide assumes that the values of these variables are not overridden by user configuration files, such as *.login*, *.profile*, *.bashrc*, and *.cshrc*.

Setting the default file creation umask

Perform this step as the non-privileged user on the application server.

- Edit the *~/ .login* file, and add the following command to the file:

```
umask 027
```

The command sets the default file creation umask, so that by default, files you create give read-only access to other users in your group and no permissions to users outside the group.

Preparing the installation staging area

This section discusses the steps to unpack the Signal installation files.

Unpacking the installation files into the installation directory

Choose an installation directory that is on the application server and that is accessible to the WebLogic software, such as */u01/stage*. The installation directory stores Empirica Signal components during the installation process.

1. Log in to the application server as the non-privileged user.
2. Using a tool such as the *tar* command, unpack the *Signal_Install.tar.gz* to the */u01/stage* directory. For example, use the following command:

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

```
$ tar xvf /u01/stage/Signal_Install.tar.gz
```

The */u01/stage/Signal_Install* directory is created.

Note: In this document, `<INSTALL_DIR>` refers to the folder created in this step, such as `/u01/stage/Signal_Install`. This document assumes that you are installing to this directory.

3. Using a tool such as `unzip`, unpack the `Signal-8_0_0_0_XXX.zip` file into the `<INSTALL_DIR>/Signal` directory.
4. Execute the following command:


```
$ chmod u+x <INSTALL_DIR>/Signal/WEB-INF/classes/MGPS
```
5. Unpack the `Database.zip` file:
 - a. Create the following directory:


```
/u01/stage/Database
```
 - b. Using a tool such as `unzip`, unpack the contents of the `Database.zip` file into the directory.

Configuring the connection to the Oracle database

This section includes the following topics:

- [Adding the database TNSNAMES entry](#)
- [Setting environment variables](#)

Adding the database TNSNAMES entry

Perform these steps using the non-privileged user account.

1. On the application server, open the `tnsnames.ora` file, located in the following directory:


```
<ORACLE_HOME>/network/admin/
```

If the file does not exist, create it.
2. Add an entry that points to the database, using the information found in the `TNSNAMES.ORA` file on the database server. For more information, see [Information to collect before you begin](#).

Setting environment variables

In this procedure, you edit configuration scripts, which set environment variables for the command shells you use. You must log out and log in again for the changes you make in this section to take effect.

In this section, you configure environment variables for your application server using your privileged account and using `sudo`. This section requires you to edit files, using commands such as the following. The first command logs you in as root. If you are prompted for your password after typing this command, type your password, not the password of root.

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

To set environment variables:

1. Edit the `/etc/profile` file as follows. This change sets environment variables for `sh` and `bash` command shells.

- a. Add the following lines to the file.

For the values in the first two lines, use information about your Oracle client installation.

```
ORACLE_BASE=/u01/app/oracle
ORACLE_HOME=/u01/app/oracle/product/11.2.0
ORACLE_SID=<server_sid>
NLS_LANG=AMERICAN_AMERICA.AL32UTF8
export ORACLE_BASE ORACLE_HOME ORACLE_SID NLS_LANG
```

- b. Add the bin directory of your Oracle client installation to the `PATH` variable. For example, add the following line as the last line where the `PATH` variable is set:

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

2. Edit the `/etc/csh.login` file. This change sets environment variables for `csh` and `tcsh` command shells.

- a. Add the following lines to the file.

For the values in the first two lines, use information about your Oracle client installation.

```
setenv ORACLE_BASE /u01/app/oracle
setenv ORACLE_HOME /u01/app/oracle/product/11.2.0
setenv ORACLE_SID <server_sid>
setenv NLS_LANG AMERICAN_AMERICA.AL32UTF8
```

- b. Add the bin directory of your Oracle client installation to the `PATH` variable. For example, add the following line as the last line where the `PATH` variable is set:

```
setenv PATH ${ORACLE_HOME}/bin:${PATH}
```

Setting up the application database account (install only)

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

1. In a command shell, use the following command to navigate to the `/u01/stage/Database` directory:

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

2. Review the `1_create_webvdme_tablespace_linux.sql` file:

- a. Edit the `1_create_webvdme_tablespace_linux.sql` file. For example:

```
$ vi 1_create_webvdme_tablespace_linux.sql
```

- b. To create the data files in a location other than the default location of your database, specify the alternate location in the `datafile_path` variable. The path must end in a forward slash (`/`). For example:

```
DEFINE datafile_path = '/u01/app/oracle/oradata/<sid>/'
```

- c. Save the file, and exit the `vi` editor.

3. Create the application tablespace:

- a. Execute the `1_create_webvdme_tablespace_linux.sql` script from the Oracle system account.

For example, type:

```
$ sqlplus system@<TNS_Name> @1_create_webvdme_tablespace_
linux.sql
```

- b. When prompted, type the Oracle system account password.

4. Create the application Oracle user and schema:

- a. Type the following text:

```
$ sqlplus sys@<TNS_Name> as sysdba @2_create_webvdme_oracle_
user.sql
```

- b. When prompted, type the Oracle sys account password.
- c. When prompted a second time, create a password for the Empirica Signal database account. Retype the password to verify it.

Note: Remember this password for later in this procedure.

- d. When prompted, create a password for the **empirica_admin** account.
- e. Retype the password to verify it.

Note: Remember this password.

5. Populate the application schema:

- a. Execute the `3_create_all` SQL script from the Empirica Signal database account (not the sys or system accounts). For example:

```
$ sqlplus webvdme@<TNS_name> @3_create_all.sql
```

- b. When prompted, type the webvdme database account password that you created in the previous step.

6. Update the schema for version 8.0.1:

- a. Execute the `update_8_0_to_8_0_1` SQL script from the Empirica Signal database account (not the sys or system accounts). For example:

```
$ sqlplus webvdme@<TNS_name> @update_8_0_to_8_0_1.sql
```

- b. When prompted, type the webvdme database account password that you created in step 4.

Setting up the Sample Topic Workflow Oracle account (optional; install only)

In this optional procedure, you perform the following steps to prepare the Empirica Signal software for using the Topics feature:

1. Create the Oracle tablespace and account.
2. Supply the contents of the account.

To set up the Sample Topic Workflow Oracle account:

1. In a command shell, use the following command to navigate to the /u01/stage/Database directory:

```
$ cd /u01/stage/Database
```
2. Create the Topic Workflow account:
 - a. In a command shell, execute the `create_topics_oracle_user.sql` SQL script from the system account. For example:

```
$ sqlplus system@<TNS_name> @create_topics_oracle_user.sql
```
 - b. Type the Oracle system account password.
 - c. When prompted a second time, create a password for the Topic Workflow database account. Retype the password to verify it.

Note: Remember this password.

3. Create sample topics tables:
 - a. In a command shell, execute the `create_sample_topics_tables.sql` SQL script from the TOPIC_WORKFLOW database account created in step 2. For example:

```
$ sqlplus topic_workflow@<TNS_name> @create_sample_topics_tables.sql
```

You are prompted to type a password.
 - b. Type the TOPIC_WORKFLOW database account password that you specified in step 2.
4. Create sample topics:
 - a. In a command shell, execute the `populate_sample_topics_tables.sql` SQL script from the TOPIC_WORKFLOW database account in step 2. For example:

```
$ sqlplus topic_workflow@<TNS_name> @populate_sample_topics_tables.sql
```

You are prompted to type a password.
 - b. Type the TOPIC_WORKFLOW database account password that you specified in step 2.

Installing test data (optional; install only)

1. In a command shell, use the following command to navigate to the /u01/stage/Database directory:

```
$ cd /u01/stage/Database
```
2. If you have an existing TEST_IQOQ account, drop the account:
 - a. Open a command shell, and type the drop command for the account. When prompted, type the System password. For example:

```
$ sqlplus system@<TNS_name>  
SQL> dropuser TEST_IQOQ cascade;
```
 - b. Exit the command shell.
3. Create the Oracle tables in a TEST_IQOQ Oracle account:

- a. As the Oracle system user, execute the following SQL script. Enter this command on one line.


```
$ sqlplus system@<TNS_name> @4_create_test_iqoq_oracle_user.sql
```
- b. At the prompt, type the system password.
- c. At the second prompt, create a password for the TEST_IQOQ account and retype it to verify it.

Note: Remember the password.

4. Populate the test database in the TEST_IQOQ Oracle account:
 - a. Execute the following SQL script. Enter the command on one line.


```
$ sqlplus TEST_IQOQ@<TNS_name> @5_populate_test_iqoq.sql
```
 - b. At the prompt, type the TEST_IQOQ password.

Applying upgrade scripts to migrated schemas to upgrade from 7.3.3.x to 8.0.1

1. In a command shell, use the following command to navigate to the /u01/stage/Database directory:


```
$ cd /u01/stage/Database
```
2. Enter the following commands to upgrade the Empirica Signal schema for version 8.0:


```
$ sqlplus webvdme@<TNS_NAME> @update_7_3_3_3_to_8_0.sql
```
3. When prompted, type the webvdme user password.
4. Enter the following commands to upgrade the Empirica Signal schema for version 8.0.1:


```
$ sqlplus webvdme@<TNS_NAME> @update_8_0_to_8_0_1.sql
```
5. When prompted, type the webvdme user password.
6. Examine the file named `disabled_userlist.txt` in your current directory. This file contains usernames for accounts that had been disabled due to excessive failed login attempts. The users are locked out rather than disabled. To disable the users, perform the following steps after the upgrade is complete and you are able to log in to the Empirica Signal application:
 - a. Log in to the Empirica Signal application as a user with the Administer Users permission.
 - b. Click **Settings**.
 - c. Click **Edit Users**.
 - d. For each user to disable, click the row menu, and then click **Edit**.
The Edit User page appears.
 - e. Deselect **Account locked**, and select **Account disabled**.
 - f. Click **Save**.
7. Perform the following command to create the DB admin user:

```
$ sqlplus sys@<TNS_NAME> as sysdba @create_dbadmin_user.sql webvdme
```

8. When prompted, type the Oracle sys account password.
9. When prompted, create a password for the **empirica_admin** account. Retype the password to verify it.

Note: Remember this password.

10. After the script completes, type **exit**.
11. Perform the following command to complete the schema upgrade to version 8.0.1:

```
$ sqlplus system@<TNS_NAME> @update_proxy_authentication.sql webvdme
```

12. When prompted, type the Oracle system account user password.
13. After the script completes, type **exit**.
14. If you use the Topics feature, execute the following command to upgrade each Topics schema account for release 8.0.1. Typical installations have a single Topics schema named `topic_workflow`.

```
$ sqlplus topic_workflow@<TNS_NAME> @update_twc_7_3_3_3_to_8_0.sql
```

15. When prompted, type the `topic_workflow` account password.

Preparing the environment on the application server

This section includes the following topics:

- [Installing unlimited strength encryption Java libraries](#)
- [Installing and configuring Xvfb](#)
- [Modifying the default WebLogic Configuration](#)

Installing unlimited strength encryption Java libraries

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

1. Copy the following files from the installation directory to the JDK installation directory:

- `local_policy.jar`
- `US_export_policy.jar`

For example, using the privileged user account, execute the following commands in a command shell, updating the path to match the location of your JDK:

```
$ sudo su - root
# cp -f <INSTALL_DIR>/java/*.jar /usr/java/jdk1.7.x_
xx/jre/lib/security/
# exit
```

2. If you are prompted to overwrite files, type **y** and press **Enter**.
3. Ensure that the two files have the same ownership and permissions as the rest of the files in the destination directory.

Installing and configuring Xvfb

The following instructions are for installing Xvfb, the X Windows Virtual Frame Buffer. These procedures are required on the application server for the creation of graphs.

Determining whether Xvfb is installed

Perform these steps using the privileged user account.

1. Execute the following command in a command shell:

```
$ which Xvfb
```

2. If the following response or some other path to Xvfb appears, Xvfb is already installed. Continue to [Configuring Xvfb](#).

```
/usr/bin/Xvfb
```

Installing Xvfb

Prerequisites: Yum must be installed and configured with an appropriate configuration file. Additionally, your system must be able to connect to the Yum repositories. For more information on configuring Yum for an Oracle Linux 6 system, see <http://public-yum.oracle.com/>.

If Xvfb is not installed, perform the following steps using the privileged user account.

1. If Xvfb is not installed, type the following command:

```
$ sudo yum install Xvfb
```

2. If you are prompted for your password after typing this command, type your password, not the password of root.

Configuring Xvfb

Perform these steps using the privileged user account.

1. Execute the following commands in a command shell:

```
$ sudo su - root
```

```
# cp <INSTALL_DIR>/service/xvfb /etc/rc.d/init.d
```

```
# /sbin/chkconfig --add xvfb
```

2. Execute the following command. This command verifies that the installation was successful.

```
# /sbin/chkconfig --list xvfb
```

The following response appears:

```
xvfb 0:off 1:off 2:off 3:on 4:off 5:on 6:off
```

3. Manually start Xvfb by executing the following command:

```
# /etc/rc.d/init.d/xvfb start
```

The following response appears:

```
Starting X Virtual Frame Buffer
```

4. Type **exit** to stop running as root.

Modifying the default WebLogic Configuration

Make the following modifications in the WebLogic domain bin directory, such as /u01/app/oracle/Middleware/user_projects/domains/empirica/bin.

1. Using the non-privileged user account, open the file `setDomainEnv.sh` in a text editor, such as `vi`.
2. Type the following text at the bottom of the file. If you are not using UTC for the time zone, adjust the time zone in the text accordingly:

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

3. In the `setDomainEnv.sh` file, search for instances of `ojdbc6dms.jar`:
 - If no instances exist, continue to step 4.
 - If at least one instance exists, replace all instances with `ojdbc6.jar` from the `$ORACLE_HOME` folder.

For example, edit the following text:

```
if [ "${PRE_CLASSPATH}" != "" ] ; then
    PRE_CLASSPATH="${COMMON_COMPONENTS_HOME}/modules/oracle.jdbc.11.1.1/ojdbc6dms.jar${CLASSPATHSEP}${PRE_CLASSPATH}"
    export PRE_CLASSPATH
else
    PRE_CLASSPATH="${COMMON_COMPONENTS_HOME}/modules/oracle.jdbc.11.1.1/ojdbc6dms.jar"
    export PRE_CLASSPATH
fi
```

to look like the following text:

```
if [ "${PRE_CLASSPATH}" != "" ] ; then
    # PRE_CLASSPATH="${COMMON_COMPONENTS_HOME}/modules/oracle.jdbc.11.1.1/ojdbc6dms.jar${CLASSPATHSEP}${PRE_CLASSPATH}"
    PRE_CLASSPATH="${ORACLE_HOME}/jdbc/lib/ojdbc6.jar${CLASSPATHSEP}${PRE_CLASSPATH}"
    export PRE_CLASSPATH
else
    # PRE_CLASSPATH="${COMMON_COMPONENTS_HOME}/modules/oracle.jdbc.11.1.1/ojdbc6dms.jar"
    PRE_CLASSPATH="${ORACLE_HOME}/jdbc/lib/ojdbc6.jar"
    export PRE_CLASSPATH
fi
```

Note: In the previous examples, the text highlighted in green replaces the yellow text.

4. Search for any instance of setting the JVM option `java.awt.headless` to true:
 - If no instances exist, continue to the next step.
 - If an instance exists, either remove or disable the instance.

For example, replace the following text:

```
EXTRA_JAVA_PROPERTIES="${EXTRA_JAVA_PROPERTIES}"
-Dem.oracle.home=/u01/app/oracle/Middleware/oracle_common
-Djava.awt.headless=true"
```

with the following text:

```
#EXTRA_JAVA_PROPERTIES="${EXTRA_JAVA_PROPERTIES}"
-Dem.oracle.home=/u01/app/oracle/Middleware/oracle_common
-Djava.awt.headless=true"
EXTRA_JAVA_PROPERTIES="${EXTRA_JAVA_PROPERTIES}"
-Dem.oracle.home=/u01/app/oracle/Middleware/oracle_common"
```


5. Save the file, and exit the editor.

Starting WebLogic and the Node Manager

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

1. In a command shell, navigate to the WebLogic default domain bin directory, using a command such as the following:

```
$ cd /u01/app/oracle/Middleware/user_projects/domains/empirica/bin
```

2. If WebLogic is running, execute the command:

```
$ ./stopWebLogic.sh
```

3. To start WebLogic, execute the following command:

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

Note: Information messages might appear. You might need to press Enter to see the prompt.

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


```
https://<servername>:7002/console
```
 - b. In the left pane, expand **Environment**, and select **Machines**.
The Summary of Machines page appears.
 - c. In the list of machines, select **SignalMachine**.
The Settings for SignalMachine page appears.
 - d. Select the **Monitoring** tab.
 - e. Confirm that the status is Reachable. If status is Inactive, the Node Manager is not running.
5. If the Node Manager is not running, perform the following steps to start it:
 - a. Navigate to \$WL_HOME/server/bin directory, such as:


```
/u01/app/oracle/Middleware/wlserver_10.3/server/bin
```
 - b. Execute the following command:


```
$ nohup ./startNodeManager.sh > /dev/null &
```
6. Exit the command shell.
7. Log into the WebLogic Administration Console using the WebLogic administrator credentials provided to you by the system administrator. Typically, the address for the WebLogic Administration Console is the following:


```
https://<servername>:7002/console
```
8. In the Domain Structure section on the left, expand **Environment**, and select **Servers**.
9. In the table of servers, select **SignalServer**.

The Settings for SignalServer page appears.

10. Select the **Configuration** tab, and select the **Server Start** sub-tab.
11. In the Change Center section on the left, click **Lock & Edit**.
12. In the Arguments field, type the following text:

```
-Xms256m -Xmx2048m -XX:MaxPermSize=1024m
```

Note: `-XmxNNNNm` and `-XX:MaxPermSize` are memory parameters that control the amount of memory used by the Empirica Signal application. You might need to adjust the parameters upwards to achieve appropriate performance. The numbers to use depend on the size of the data set installed and the number of users expected to access the system simultaneously.

13. Click **Save**.
14. In the Change Center section on the left, click **Activate Changes**.
Your changes are activated. This might take a few moments.
15. On the left, select **Servers**.
16. Select the **Control** tab.
17. Start or restart the SignalServer:
 - a. In the table of servers, if the State of the SignalServer is SHUTDOWN, proceed to step d.
 - b. In the table of servers, if the State of the SignalServer is RUNNING, select the check box for the server, expand the **Shutdown** drop-down menu, located above and below the table, and select **Force Shutdown Now**.
 - c. Wait until the State of the server changes to SHUTDOWN. The page does not refresh automatically. To refresh the page, click the refresh button, located above the table, or click the refresh button for your browser.
 - d. In the table of servers, select the check box for the SignalServer, and click **Start**, located above and below the table.
 - e. Wait until the State of the server changes to STARTING and then RUNNING. The page does not refresh automatically. To refresh the page, click the refresh button, located above the table, or click the refresh button for your browser.

Setting up the Empirica Signal software

This chapter includes the following topics:

- [Configuring properties files](#)
- [Preserving customizations and copying Release Notes documents \(upgrading from 7.3.3.x to 8.0.1\)](#)

Configuring properties files

This section describes how to configure properties files in the Empirica Signal software.

Reviewing the webvdme.properties file

Prerequisites: If you intend to configure the Empirica Signal software to use single sign-on (SSO) with Oracle Access Manager (OAM), refer to [Appendix A, Single sign-on \(SSO\) - Oracle Access Manager \(OAM\) setup](#) for configuration details.

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

The `webvdme.properties` file stores database connection information for the Empirica Signal software.

1. Create a directory that will be used for temporary files created by the Empirica Signal application, such as:

```
/u01/app/oracle/product/Signal/temp
```

Make sure to create this directory so that the non-privileged user account has write access to it.

2. Navigate to the following directory:

```
<INSTALL_DIR>/Signal/WEB-INF/classes
```

3. Make a copy of the `template_webvdme.properties` file in the same directory with the name **webvdme.properties**. For example, use the following command:

```
$ cp template_webvdme.properties webvdme.properties
```

4. Using a text editor, open the `webvdme.properties` file.
5. Review the settings for the following values in the file, changing the values as appropriate for your installation.

- a. `connect=jdbc:oracle:thin:@//host:port/service_name`

where:

- host is the IP address or fully qualified name of the database server.
- port is the port number used by the database listener.
- service_name is the database service name.

Example: connect=jdbc:oracle:thin:@//198.168.0.1:1521/ORCL

- b. sqlldr_connect=tnsnames_alias

Example: sqlldr_connect=orcl

6. Modify the **temp_dir** entry so that it points to the temporary directory that you created in step 1.

7. If you plan to use the Topics feature, specify the Topics Web Service URL:

- a. Locate the `topicsService.url` property.
- b. Remove the hash character (#) so that the property is no longer commented out.
- c. Change the values in the URL as appropriate for your installation, replacing `<server_name>` with your server name.

```
topicsService.url= https://<server_
name>:7004/Signal/ws/topicsService
```

Note: The previous example assumes that you are using SSL and will be configuring the SSL security policy for the Topics Web Service, described in [Setting up the Web Service Security Policy](#). If you are not using SSL, use http and the appropriate port.

8. If you do not plan to use the Topics feature, specify a blank Topics Web Service URL:

- a. Locate the `topicsService.url` property.
- b. Change the value in the URL to blank:

```
topicsService.url=
```

9. Optionally, configure the Empirica Signal software for single sign-on (SSO):

- a. In the `webvdme.properties` file, uncomment the following properties:
 - `sso.plugins=com.oracle.hsgbu.empirica.sso.EmpiricaSsoPlugin`
 - `sso.EmpiricaSsoPlugin.username.header=oam-remote-user`

Note: The value of the `sso.EmpiricaSsoPlugin.username.header` property depends on your OAM configuration.

- b. Specify the SSO logout URL by uncommenting the following property and replacing the bold sample URL with the appropriate value. You obtain the SSO logout URL in [Information to collect before you begin](#).

```
- sso.EmpiricaSsoPlugin.logoutRedirectUrl=https://ssoServer:port/oam
sso/logout.jsp
```

- c. Update the session timeout value:
 - a. Navigate to the following directory:

```
<INSTALL_DIR>/Signal/WEB-INF
```

- b. Open the `web.xml` file.
 - c. Set the value of the **session-timeout** parameter so that it is greater than the session timeout for the single sign-on setup in the organization.
10. Save the file, and exit the editor.

Reviewing the listener.properties file

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

The `listener.properties` file stores information used for data mining.

1. Navigate to the following directory:

```
<INSTALL_DIR>/Signal/WEB-INF/classes
```

The directory contains the `template_listener.properties` file.

2. Make a copy of the `template_listener.properties` file in the same directory with the name `listener.properties`. For example, use the following command:

```
$ cp template_listener.properties listener.properties
```

3. Using a text editor, open the `listener.properties` file.
4. Edit the following path settings as needed:
 - `mgps_path`
 - `sqlldr_path`
5. Save and close the file.
6. **(Upgrade only)** Migrate customized settings, if necessary:
 - a. Compare the values of the following properties to the values in the `listener.properties` file that was used for release 7.3.3.3, 7.3.3.4 or 7.3.3.5 of the Empirica Signal software:
 - `mgps_mem_limit`
 - `mgps_prr_mem_limit`
 - `fetch_size`
 - b. If any of the values used for release 7.3.3.3, 7.3.3.4 or 7.3.3.5 are larger, update the values in the new `listener.properties` file to the larger values.

Setting up the report_listener.properties file

You create and edit the `report_listener.properties` file to enable 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 [Reviewing the listener.properties file](#).

1. Navigate to the `<INSTALL_DIR>/Signal/WEB-INF/classes` directory. For example:

```
$ cd <INSTALL_DIR>/Signal/WEB-INF/classes
```

2. 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. 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
```
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.

Creating the `webvdme-fonts.properties` file

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

The `webvdme-fonts.properties` file stores font information.

1. Navigate to the following directory:

```
<INSTALL_DIR>/Signal/WEB-INF/classes
```

The directory contains the `template_webvdme-fonts.properties` file.

2. Make a copy of the `template_webvdme-fonts.properties` file in the same directory with the name `webvdme-fonts.properties`. For example, use the following command:

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

3. To support Asian fonts in PDF output, specify the Albany WT Unicode font as the base font. For example:

```
iText.TABLE_WRITER_BASE_FONT_PATH=ALBANYWTJ.TTF  
iText.CASE_SERIES_DETAIL_BASE_FONT_PATH=ALBANYWTJ.TTF  
iText.TOPIC_WRITER_BASE_FONT_PATH=ALBANYWTJ.TTF
```

The Albany WT Unicode font is packaged with the Empirica Signal installation files.

4. **(Upgrade only)** If you customized the `webvdme-fonts.properties` file for release 7.3.3.3, 7.3.3.4 or 7.3.3.5 and want to preserve these customizations, install Linux versions of the desired fonts on the Linux application server. Additionally, update the font names in the new `webvdme-fonts.properties` as appropriate.

Setting up the `log4j.properties` file

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

1. Navigate to the following directory:

```
<INSTALL_DIR>/Signal/WEB-INF/classes
```

2. Open the `log4j.properties` file, and update the following property with the location for storing the application log file. Make sure the non-privileged user account has write access to the folder.

```
log4j.appender.defaultAppender.File
```

3. Save and close the file.
4. **(Upgrade only)** If you changed properties in addition to the `log4j.appender.defaultAppender.File` property for release 7.3.3.3, 7.3.3.4 or 7.3.3.5, apply the same changes to the new `log4j.properties` file.

Reviewing the ldap.properties file

For integration with LDAP, the `ldap.properties` file stores information about the LDAP configuration. For information on setting up the `ldap.properties` file, see *Configuring Empirica Signal for use with LDAP* in the *Empirica Signal and Topics User Guide*.

Preserving customizations and copying *Release Notes* documents (upgrading from 7.3.3.x to 8.0.1)

Perform these steps to preserve any customizations you made to release 7.3.3.3, 7.3.3.4 or 7.3.3.5 and to copy *Release Notes* documents from previous releases.

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

1. 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:

```
C:\Lincoln\apps\webvdme\webapps\web_root\relnotes
```

to the following location:

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

Note: You do not need to copy the following documents: *Release Notes* documents for data releases that are no longer on your server, MedDRA documents for releases that are no longer on your server, *Release Notes* documents for prior releases of the Empirica Signal software, a PDF document of the *User Guide* for prior releases, and the *Logistic Regression in Empirica Signal 7.1* PDF document.

2. 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:

```
C:\Lincoln\apps\webvdme\webapps\web_root\customhomes
```

to the following location:

```
/u01/stage/Signal_Install/Signal/customhomes
```

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

```
C:\Lincoln\apps\webvdme\webapps\web_root\image
```

to the following location:

```
/u01/stage/Signal_Install/Signal/image
```

Making documentation available within the application

1. Obtain the most recent version of the *Release Notes*, *Known Issues*, and *User Guide*. For more information, see [Related documents](#).
2. Copy the *Release Notes*, *Known Issues*, and *User Guide* to the following location:

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

Configuring database and Topics credentials

This chapter includes the following topics:

- [Creating the Topics service user \(optional\)](#)
- [Storing database and Topics credentials](#)
- [Setting up permissions for the credential store](#)

Creating the Topics service user (optional)

If you plan to use the Topics feature, perform the following steps.

1. Type the URL for the Weblogic Administration Console, and log in.
2. In Domain Structure pane to the left, select **Security Realms**.
The Summary of Security Realms page appears.
3. In the Realms table, click the **myRealm** link.
The Settings for myrealm page appears.
4. Select the **User and Groups** tab.
5. In the Users table, click **New**.
The Create a New User page appears.
6. Type a name and a password for the Topics service user. For example, you might choose the username **topicsService**.

Note: Remember this information. This information is stored in the credential store.

7. Click **OK**.
The topic service user is created.

Storing database and Topics credentials

1. In an internet browser, enter the URL for the Oracle Enterprise Manager, such as the following:
`https://<server_name>:7002/em`
2. Type the WebLogic administrator credentials, and click **Login**.
The Oracle Enterprise Manager appears.

3. On the left, expand **WebLogic Domain**, and select **empirica**.
4. Expand the WebLogic Domain menu, located below the empirica page title, and select **Security > Credentials**.
The Credentials page appears.
5. Create a map for credentials for the Empirica Signal application:
 - a. In the Credentials table, click **Create Map**.
The Create Map dialog box appears.
 - b. Type the following map name:
oracle.hsgbu.empirica
 - c. Click **OK**.
6. Create a key for the credentials for the Empirica Signal database account:
 - a. In the Credentials table, click **Create Key**.
 - b. Fill in the following fields. Text fields are case-sensitive.
 - **Select Map**—Select the map you just created.
 - **Key**—Type the following value:
DatabaseCredentials
 - **Type**—Select Password.
 - **User Name, Password, Confirm Password**—Type the login information for the Empirica Signal database schema. The default user name is **webvdme**.
 - **Description**—Type the following value:
Signal schema username and password
 - c. Click **OK**.
7. If you are using the Topics feature, create a key for the Topics service credentials:
 - a. In the Credentials table, click **Create Key**.
 - b. Fill in the following fields. Text fields are case-sensitive.
 - **Select Map**—Select the map you just created.
 - **Key**—Type the following value:
TopicsService
 - **Type**—Select Password.
 - **User Name, Password, Confirm Password**—Type the login information for the Topics service user created in the WebLogic Administration Console. For example, the user name might be topicsService.
 - **Description**—Type the following value:
Username and password for Signal communicating with the Topics Service.
 - c. Click **OK**.
The Credentials page appears. The credential store keys are now set up.

8. If you are configuring the Empirica Signal application for use with LDAP, create a key for the LDAP credentials.

Note: Skip this step if you are configuring anonymous LDAP login.

- a. In the Credentials table, click **Create Key**.
 - b. Fill in the following fields. Text fields are case-sensitive.
 - **Select Map**—Select the map you just created.
 - **Key**—Type the following value:
LdapCredentials
 - **Type**—Select Password.
 - **User Name, Password, Confirm Password**—Type the login information for the LDAP user.
 - **Description**—Type the following value:
LDAP username and password
 - c. Click **OK**.
9. To see the keys you created, expand the map in the Credentials table.

Setting up permissions for the credential store

You must set up permissions for the Empirica Signal application to access the credential store. Otherwise, the Empirica Signal application cannot start, users cannot login, and the Topics Web Service is unavailable.

1. In the Oracle Enterprise Manager, on the left, expand **WebLogic Domain**, and select **empirica**.
2. Expand the WebLogic Domain menu, located below the empirica page title, and select **Security > System Policies**.

The System Policies page appears.

3. In the System Policies table, click **Create**.
- The System Policies > Create System Grant page appears.
4. In the Codebase field, type the case-sensitive codebase, such as:

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

Note: Use the codebase value as is unless you plan to use a context root value other than the default value of **Signal**. For more information, see [Creating the Empirica Signal deployment in WebLogic](#).

5. Add a permission:
 - a. Click **Add**.

The Add Permission page appears.

- a. Select a permission in the table, and click **Create Like**.

The System Policies > Create System Grant page appears.

- b. Type a codebase value, such as the following value:

```
file:${wls.home}/../..../patch_wls1036/patch_jars/-
```

Note: This directory should reflect the directory where you installed the patch for WebLogic.

- c. Click **OK**.

The permission is added.

Deploying the Empirica Signal application

This chapter includes the following topics:

- [Creating the Empirica Signal deployment in WebLogic](#)
- [Setting up the Web Service Security Policy](#)

Creating the Empirica Signal deployment in WebLogic

Perform these steps by connecting to the application server using a web browser.

1. Log in to the WebLogic Administration Console using the WebLogic administrator credentials provided to you by the system administrator. Typically, the address for the WebLogic Administration Console is the following:

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

2. On the left pane named Domain Structure, click **Deployments**.
3. In the Change Center section on the left, click **Lock & Edit**.
4. In the Deployments table on the right, click the **Install** button.
5. In the console, navigate to the following directory:
`<INSTALL_DIR>`
6. Select the **Signal** radio button, and click **Next**.
7. Select **Install this deployment as an application**, and click **Next**.
8. For Deployment Target, select **SignalServer**, and click **Next**.
9. Leave the default selections in the first two sections on the page.
10. In the Source accessibility section, select **Copy this application onto every target for me**, and click **Next**.
11. Click **Finish**.

The deployment is created. This might take a few moments.

12. In the Change Center section on the left, click **Activate Change**.

The deployment changes to the **Prepared** state.

13. Select the check box to the left of the Signal deployment, click the **Start** button, and select **Servicing all requests** from the drop-down list.

The Empirica Signal application appears in the Deployments table with a state of **Active**.

Setting up the Web Service Security Policy

1. In an internet browser, enter the URL for the Oracle Enterprise Manager, such as the following:
`https://<server_name>:7002/em`
2. Type your WebLogic administrator credentials, and login.
3. On the left side, expand **Application Deployments**, and select the deployed application, such as **Signal (SignalServer)**.
4. Expand the Application Deployment menu, located below the page title, and select **Web Services**.
Details about Web Services appear.
5. In the table of Web Services, select **EmpiricaTopicsPort**.
Information about the service appears. This might take a minute or two.
6. Select the OWSM Policies tab, if it is not already selected.
The OWSM Policies tab appears. This might take a minute or two.
7. Click **Attach/Detach**, located above the table.
8. In the Available Policies table, open the **Search** drop-down list, and select **Name**.
9. In the text field after the **Search** drop-down list, type one of the following values:
 - 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 the arrow icon.
One or more policies appear in the Available Policies table.
11. Select the row with the name of the policy you chose in step 9, one of the following:
`oracle/wss_username_token_over_ssl_service_policy`
`oracle/wss_username_token_service_policy`
12. Click **Attach**, located above the Available Policies table.
The policy moves to the Attached Policies table.
13. Click **Validate**, located above the Attached Policies table.
If the policy validates successfully, a message appears.
14. In the message, click **OK**.
15. In the upper-right corner of the page, click **OK**.
The application protects the Topics Web Service with a username token service policy. This might take a minute or two.

Post-installation configuration

This chapter includes the following topics:

- [Setting the passwords of the system and admin users \(installation only\)](#)
- [Configuring the Empirica Signal software](#)
- [Verifying the Empirica Signal setup](#)

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

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

The **admin** account is a superuser account and is not an SSO user account. You use the **admin** account to log in initially so you can create other users and configure the Empirica Signal software. You must set the password for the product installation to be complete.

Perform these steps as the non-privileged user.

1. Open a command shell, and navigate to the following directory:

```
<INSTALL_DIR>/bin/PasswordReset
```

2. Verify that the environment variable definitions in the `runPasswordReset.sh` file point to the appropriate locations for your system.

For example, open `runPasswordReset.sh` with a text editor and inspect the following lines. The values that appear are examples.

```
# System locations
JAVA_HOME=/u01/app/oracle/product/jdk1.7.x_xx
WEBLOGIC_MODULES_DIR=/u01/app/oracle/Middleware/oracle_common/modules
JPS_CONFIG_FILE=/u01/app/oracle/Middleware/user_
projects/domains/empirica/config/fmwconfig/jps-config-jse.xml
# Product installation staging locations
INSTALL_ROOT=/u01/stage/Signal_Install
PRODUCT_BASE_DIR=$INSTALL_ROOT/Signal
```

Multiple directories named **modules** might be located under the Oracle installation home. Make sure that the `WEBLOGIC_MODULES_DIR` entry refers to the directory located below the `oracle_common` directory.

The `JPS_CONFIG_FILE` entry refers to the location of the OPSS configuration file, which by default is located in the `config/fmwconfig` sub-directory of the home directory of the WLS domain.

3. Set the password for the **system** user name:

- a. In the command shell, execute the following command:

```
$ ./runPasswordReset.sh system override-passwordmustchange
```

Logging information appears, followed by a prompt to enter a new password.
 - b. Type the password for the **system** user name, and press **Enter**.
By default, the password must contain at least eight characters, including an upper-case character, lower-case character, acceptable symbol, and number.
A prompt to confirm the password appears.
 - c. Retype the password, and press **Enter**.
The passwords must match. They are not echoed.
If the passwords match and the password change is successful, a confirmation message appears.
If the passwords do not match, an error message appears. Run the command again and use matching passwords.
4. Set the password for the **admin** user name:
 - a. In the command shell, execute the following command:

```
$ ./runPasswordReset.sh admin
```

Logging information appears, followed by a prompt to enter a new password.
 - b. Type the password for the **admin** user name, and press **Enter**.
If you have not changed the default password requirements, the password must contain at least eight characters, including an upper-case character, lower-case character, acceptable symbol, and number, unless the product is already running. If the product is already running, the password must meet the requirements established by the Empirica Signal administrator for passwords.
A prompt to confirm the password appears.
 - c. Retype the password, and press **Enter**.
The passwords must match. They are not echoed.
If the passwords match and the password change is successful, a confirmation message appears.
If the passwords do not match, an error message appears. Run the command again and use matching passwords.

Note: Remember this password for later use. You use the password to log in using the admin user name when you set up and configure the application.

Configuring the Empirica Signal software

Before users can begin using the Empirica Signal software, you must complete the following tasks. For information about how to perform each task, see the *Empirica Signal and Topics User Guide*.

1. To test that the site is set up correctly, open the Microsoft Internet Explorer browser, and enter the following URL:

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

Notes:

- If your site is not configured to require SSL connections, use the following values:
 - **http://** instead of **https://**.
 - **7003** instead of **7004**.
- If you are using SSO, use the native login port provided to you by the administrator who configured OAM for your application. The native login port is listed as an entry in the [Information to collect before you begin](#).

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

2. Log in using the built-in administrative account:

- User name: admin
- Password: The password set during [Setting the passwords of the system and admin users \(installation only\)](#).

3. When prompted, change your password.

You are logged out of the software.

4. Log in using the built-in administrative account and the new password you just created.

The home page appears.

5. Verify site options:

- a.** Click **Settings**, and click **Set Site Options**.

The Site Options page appears.

- b.** Verify the SMTP server name.

- c.** Specify e-mail addresses for Feedback Email and Error Email.

The default email address is for the Empirica Signal support team (esignalcontact_ww_grp@oracle.com). Alternatively, you can send e-mail messages to an internal technical support team.

Note: If you are upgrading, an email address appears in the field. You can modify it as needed. If you are installing, the field is blank.

- d.** Make sure that all other site options are set correctly.

6. Click **Exit**.

You are logged out.

7. If you configured access using single-sign on (SSO), test SSO login:

- a.** Log in to the Empirica Signal software as **admin**, and create a user that is enabled for SSO. The same user name must also be configured for OAM.

- b.** Open the Microsoft Internet Explorer browser, and type the URL using the SSO port, which is listed as an entry in [Information to collect before you begin](#).

The login prompt appears.

- c.** Type the SSO user name and password.

The home page appears.

- d. Click **Exit**.

You are logged out.

The Empirica Signal installation is complete.

Installing report data (installation only)

To use the standard reports provided with the Empirica Signal application, you must install a small data stub in the Oracle database.

This section describes how to install the necessary configuration, AERS (1q03: S). Do not perform this procedure if you already installed a copy of the AERS68_TO_1Q03 data set on the server that hosts the Empirica Signal software.

The installation package for the Empirica Signal software includes the `Data_Stub.zip` file, which contains the following files:

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

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

1. Unzip the archive file:
 - a. On the server, create a directory named **data_stub**. For example:

```
/u01/stage/data_stub
```
 - b. Using a tool such as `unzip`, unpack the `Data_Stub.zip` file into the `data_stub` directory.
 - c. Make sure the `data_stub` directory contains all the files from the `Data_Stub.zip` file.
2. Create the tablespaces and accounts used to store the production data:
 - a. Open the `/u01/stage/data_stub/create_prod.sql` file in a text editor.
 - 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. Type the following command on one line to execute the script:

```
$ sqlplus system@<TNS_name> @create_prod
```
 - e. When prompted, type the Oracle system account password.
 - f. When prompted, type a password for the AERS68_TO_1Q03 account.
 - g. When prompted, confirm the password.

Note: Remember this password for later in this procedure.

- h. Type the following command to exit:



```
SQL> exit
```

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. Type the password for the AERS68_TO_1Q03 account. You created the password in step 2f.
4. To import the supplied standard AERS (1Q03: S) configuration into the Empirica Signal application:
 - a. Log in to the Empirica Signal application using the admin username.
 - b. Click **Settings**, and click **Manage Configurations**.
 - c. Click **Import Configurations**.
 - d. Type the following account name:


```
AERS68_TO_1Q03
```
 - 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 row menu () and click **Edit**.
 - h. On the Modify Configuration page, click **Validate Now**.
 - i. Click **Continue**.

Note: For more information on working with configurations, see the *Empirica Signal and Topics User Guide*.

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

Importing the Sample Topic Workflow Configuration (optional; installation only)

This section describes how to import the Sample Topic Workflow Configuration for use in the Empirica Signal application.

These steps are required only if you performed the steps in [Setting up the Sample Topic Workflow Oracle account \(optional; install only\)](#). 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 Empirica Signal application using the admin username.
2. Click **Settings**, and click **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. Type the following account name:
TOPIC_WORKFLOW
6. Click **Import**.
7. Verify that the Sample Topic Workflow Configuration is listed on the Manage Topic Workflow Configurations page.

For information about working with topic workflow configurations, see the *Empirica Signal and Topics User Guide*.

Verifying the Empirica Signal setup

To verify a new installation, see the following documents:

- `IQ_Test.doc` for installation qualification information.
- `OQ_Test.doc` for operational qualification information.

To verify an upgrade, see the following documents:

- `OQ_Test.doc` for operational qualification information.
- `UQ_Test.doc` for upgrade qualification information.

Upgrading the Signal application software from 8.0 to 8.0.1

This chapter is only for users who have installed Empirica Signal release 8.0 and are now upgrading to release 8.0.1. It includes the following topics:

- [Components of the installation package](#)
- [Unpacking the installation files into the installation directory](#)
- [Stop Signal](#)
- [Applying upgrade scripts to schema](#)
- [Setting up the property files](#)
- [Preserving custom home pages, release notes, and images from the 8.0 installation](#)
- [Deploying the Signal application](#)
- [Verifying the Empirica Signal setup](#)

Components of the installation package

The installation package contains the following components that you need to upgrade Empirica Signal version 8.0 to version 8.0.1.

File	Description
Signal-8_0_1_0_XXX.zip	Build that you install, where XXX is the build number.
Database.zip	Scripts for setting up and upgrading the Empirica Signal database account.
UQ_Test.doc	Document for upgrade qualification information.
OQ_Test.doc	Document for operational qualification information.

Unpacking the installation files into the installation directory

Note: In this document, <INSTALL_DIR> refers to the folder where the Signal 8.0 software is already installed; for example, /u01/stage/Signal_Install.

1. Start a login shell to the application server as the non-privileged user.

2. Rename the existing <INSTALL_DIR>/Signal directory to <INSTALL_DIR>/Signal_8.0. For example:

```
$ mv /u01/stage/Signal_Install/Signal u01/stage/Signal_Install/Signal_8.0
```
3. Create directory Signal in <INSTALL_DIR>. For example:

```
$ mkdir /u01/stage/Signal_Install/Signal
```
4. Using a tool, such as Unzip, unpack the Signal-8_0_1_0_XXX.zip file into the <INSTALL_DIR>/Signal directory.
5. Execute the following command to make the MGPS program executable:

```
$ chmod u+x <INSTALL_DIR>/Signal/WEB-INF/classes/MGPS
```
6. Rename the existing /u01/stage/Database directory to /u01/stage/Database_8.0. For example

```
$ mv /u01/stage/Database /u01/stage/Database_8.0
```
7. Create the directory Database. For example:

```
$ mkdir /u01/stage/Database
```
8. Using a tool, such as Unzip, unpack the contents of the Database.zip file into the directory.
9. If you plan to document your upgrade with the provided UQ_Test.doc, familiarize yourself with its contents now and fill it in as you proceed through the following sections.

Stop Signal

Perform these steps by connecting to the application server using a web browser:

1. Log in to the WebLogic Administration Console using the WebLogic administrator credentials provided to you by the system administrator. Typically, the address for the WebLogic Administration Console is in the form:

```
https://<servername>:<port>/console
```
2. On the left pane named Domain Structure, click **Deployments**.
3. In the Change Center section on the left, click **Lock & Edit**.
4. Select Signal in the Deployments table.
5. In the Deployment table on the right, click the **Stop** button and click **force stop now**.

Applying upgrade scripts to schema

1. In a command shell, use the following command on the app server to navigate to the /u01/stage/Database directory:

```
$ cd /u01/stage/Database
```
2. Enter the following commands to upgrade the Empirica Signal schema for version 8.0.1:

```
$ sqlplus webvdme@<TNS_NAME> @update_8_0_to_8_0_1.sql
```
3. When prompted, type the webvdme user password.

Setting up the property files

1. Copy property files from the previously backed-up Signal 8.0 setup. For example:

```
$ cp /u01/stage/Signal_Install/Signal_8.0/WEB-INF/classes/webvdme.properties /u01/stage/Signal_Install/Signal/WEB-INF/classes
```

```
$ cp /u01/stage/Signal_Install/Signal_8.0/WEB-INF/classes/webvdme-fonts.properties /u01/stage/Signal_Install/Signal/WEB-INF/classes
```

```
$ cp /u01/stage/Signal_Install/Signal_8.0/WEB-INF/classes/listener.properties /u01/stage/Signal_Install/Signal/WEB-INF/classes
```

```
$ cp /u01/stage/Signal_Install/Signal_8.0/WEB-INF/classes/log4j.properties /u01/stage/Signal_Install/Signal/WEB-INF/classes
```

2. To support Asian Fonts in PDF documents, Unicode font Albany WT is packaged with Signal Installation. To make the Empirica Signal application use the appropriate font, the font file name has to be configured to the applicable properties in webvdme-fonts.properties. For example:

```
iText.TABLE_WRITER_BASE_FONT_PATH=ALBANYWTJ.TTF
iText.CASE_SERIES_DETAIL_BASE_FONT_PATH=ALBANYWTJ.TTF
iText.TOPIC_WRITER_BASE_FONT_PATH=ALBANYWTJ.TTF
```

3. If report_listener.properties file exists in the previously backed-up Signal 8.0 setup, copy it to the upgraded installation. For example:

```
$ cp /u01/stage/Signal_Install/Signal_8.0/WEB-INF/classes/report_listener.properties /u01/stage/Signal_Install/Signal/WEB-INF/classes
```

Or

If report_listener.properties file does not exist in the previously backed-up Signal 8.0 setup, follow the steps below:

- a. Note the value of the serverid property in the listener.properties file.
 - b. Copy the template_report_listener.properties file into the same directory as report_listener.properties. For example:


```
$ cp /u01/stage/Signal_Install/Signal/WEB-INF/classes/template_report_listener.properties /u01/stage/Signal_Install/Signal/WEB-INF/classes/report_listener.properties
```
 - c. Using a text editor, open the report_listener.properties file.
 - d. 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.
 - e. Save and close the file.
4. If LDAP is integrated with Empirica Signal 8.0 setup, copy ldap.properties to the upgraded installation. For example:

```
$ cp /u01/stage/Signal_Install/Signal_8.0/WEB-INF/classes/ldap.properties /u01/stage/Signal_Install/Signal/WEB-INF/classes
```

Preserving the Plan.xml file

1. If Plan.xml file exists in the previously backed-up Signal 8.0 setup, copy it to the upgraded installation. For example:

```
$ cp /u01/stage/Signal_Install/Signal_8.0/Plan.xml /u01/stage/Signal_Install/Signal/Plan.xml
```

Preserving custom home pages, release notes, and images from the 8.0 installation

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

Perform these steps to preserve any customizations you made to release 8.0 and to copy Release Notes documents from the previous release.

1. 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:

```
/u01/stage/Signal_Install/Signal_8.0/relnotes
```

to the following location:

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

Note: You do not need to copy the following documents: Release Notes documents for data releases that are no longer on your server, MedDRA documents for releases that are no longer on your server, Release Notes documents for prior releases of the Empirica Signal software, and any PDF version of the User Guide for prior releases.

2. 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/Signal_8.0/customhomes
```

to the following location:

```
/u01/stage/Signal_Install/Signal/image
```

Making the Release Notes available within the application

1. Obtain the most recent version of the Release Notes. For more information, see Documentation accessibility.
2. Copy the Release Notes to the following location:

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

Deploying the Signal application

Perform these steps by connecting to the application server using a web browser:

1. Log in to the WebLogic Administration Console using the WebLogic administrator credentials provided to you by the system administrator. For example:

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

2. In the left pane named Domain Structure, click **Deployments**.
3. In the Change Center section on the left, click **Lock & Edit**, if not done already.
4. Select Signal in the Deployments table.
5. In the Deployment table on the right, click the **Update** button.
6. Verify that **Source path** is pointing to the Signal installation directory.
7. On the Update Application Assistant page, click **Finish**.
The deployment is updated. This might take a few moments.
8. In the Change Center section on the left, click **Activate Changes**.
The deployment changes to the Prepared state.
9. Select the check box to the left of the Signal deployment, click the **Start** button, and select **Servicing all requests** from the drop-down list. Then click **Yes**.
The Empirica Signal application appears in the Deployments table with a state of active. You might need to refresh the display a few times until the state change occurs.

Restarting the SignalServer managed server

Perform these steps by connecting to the application server using a web browser:

1. Log in to the WebLogic Administration Console using the WebLogic administrator credentials provided to you by the system administrator. For example:
`https://<servername>:<port>/console`
2. In the left pane, expand **Environment** and select **Servers**.
The Summary of Servers page appears.
3. Select the **Control** tab.
4. From the list of servers, select the **SignalServer**.
5. From the **Shutdown** drop-down list, select **Force Shutdown Now**.
6. Wait until the state of the server changes to SHUTDOWN.
The page does not refresh automatically. To refresh the page, click the **Refresh** button, located above the table, or click the **Refresh** button for your browser.
7. After the state of the server changes to SHUTDOWN, select the check box for **SignalServer** in the table, and click **Start**.
8. Wait until the state of the server changes to STARTING and then RUNNING.
The page does not refresh automatically. To refresh the page, click the **Refresh** button, located above the table, or click the **Refresh** button for your browser.

Verifying the Empirica Signal setup

To document and verify the upgrade, see the following documents:

- UQ_Test.doc for upgrade qualification information.
- OQ_Test.doc for operational qualification information.

Migrating the Signal Management software from 7.3.3.x to 8.0.1

This chapter includes the following topics:

- [About migrating the Signal Management software](#)

About migrating the Signal Management software

If your existing Empirica Signal 7.3.3.3, 7.3.3.4 or 7.3.3.5 installation includes one or more AERS, VAERS, or Vigibase Signal Management configurations, you must perform the following steps:

- Migrate the Signal Management software and configuration files to the new application server.
- Upgrade the Signal Management software and database schemas so that they are compatible with the Empirica Signal 8.0 release.

Detailed instructions are in the most recent release package of the Signal Management software.

Single sign-on (SSO) - Oracle Access Manager (OAM) setup

To configure the 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>EmpiricaSignal</hostIdentifier>
  <agentName>EmpiricaSignal</agentName>
  <cachePragmaHeader>private</cachePragmaHeader>
  <cacheControlHeader>private</cacheControlHeader>
  <protectedResourcesList>
    <resource>/Signal/</resource>
    <resource>/Signal</resource>
  </protectedResourcesList>
  <publicResourcesList>
    <resource>/index.html</resource>
    <resource>/Signal/ping.jsp</resource>
    <resource>/Signal/utlLogout.jsp</resource>
    <resource>/Signal/logout.inc</resource>
    <resource>/Signal/css/*/resource>
  </publicResourcesList>
  <excludedResourcesList>
    <resource>/Signal/servlet/event</resource>
    <resource>/Signal/servlet/event/</resource>
  </excludedResourcesList>
</OAMRegRequest>
```

Getting the application server ready for the Empirica Signal application

This section describes how to do the following steps:

- Install WebLogic.
- Install Oracle ADF Runtime.
- Install required database repositories
- Perform additional setup tasks before installing the Empirica Signal software

You must perform these steps before installing the Empirica Signal application.

For information about the required versions of each component and the download location, see the System Requirements chapter in the *Empirica Signal Release Notes*.

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

Installing WebLogic

Prerequisites:

- The user account you use for these steps must **not** be the root user.
- The following steps describe the graphical mode for installing WebLogic. Therefore, you must set the DISPLAY environment variable before running the installer.

To install WebLogic:

1. Log in to the application server as the non-privileged user.
2. Using a tool such as the tar command, unzip /u01/stage/V29856-01.zip file to the /u01/stage directory. For example, use the following command:

```
$ cd /u01/stage/  
$ mkdir weblogic  
$ cd weblogic  
$ unzip /u01/stage/V29856-01.zip
```

3. In a command shell, execute the following command:

```
$ java -jar wls1036_generic.jar
```

The Welcome page appears.

4. Click **Next**.

The Choose Middleware Home Directory page appears.

5. Select **Create a new Middleware Home**.
6. In the Middleware Home Directory field, browse to the Middleware directory, such as:
`/u01/app/oracle/product/Middleware`
7. Click **Next**.
The Register for Security Updates page appears.
8. To receive security updates, leave **I wish to receive security updates selected**, and type your e-mail address and password for My Oracle Support.
If you do not want to receive security updates, deselect **I wish to receive security updates**, and click **Yes** when prompted to confirm.
9. Click **Next**.
The Choose Products and Components page appears.
10. Select **Custom**, and click **Next**.
The Choose Products and Components page appears.
11. Deselect the following options:
 - WebLogic Server
 - Oracle Coherence
12. Select the following options:
 - Core Application Server
 - Administration Console
 - Configuration Wizard and Upgrade Framework
 - WebLogic JDBC Drivers
13. Click **Next**.
The JDK Selection page appears.
14. In the Local JDK list at the bottom of the page, deselect any selected options.
15. Click **Browse**, and select the JDK 1.7 path, such as the following path:
`/u01/app/oracle/java/jdk1.7.x.xx`
16. Click **Next**.
The Choose Product Installation Directories page appears.
17. Click **Next**.
The Installation Complete page appears.
18. Deselect **Run Quickstart**, and click **Done**.
19. Copy the following files from `$WL_HOME/modules` to `$JAVA_HOME/jre/lib/endorsed`, where `WL_HOME` is the WebLogic Server installation home directory. If the endorsed directory does not exist, create it.
 - `javax.annotation_1.0.0.0_1-0.jar`
 - `javax.xml.bind_2.1.1.jar`
 - `javax.xml.ws_2.1.1.jar`

Installing Oracle ADF Runtime

1. Log in to the application server as the non-privileged user.
2. Using a tool such as the tar command, unzip `/u01/V37382-01.zip` file to the `/u01/stage` directory. For example, use the following command:

```
$ cd /u01/stage/  
$ mkdir adf  
$ cd adf  
$ unzip /u01/stage/V37382-01.zip
```
3. In a command shell, type the following command:

```
$ cd disk1/install/linux64
```
4. Type the following command:

```
$ ./runInstaller
```

Information about the Oracle Universal Installer appears.
You are prompted to enter the JDK location.
5. Type the JDK directory. Replace the following directory with the path to your JDK, and change XX to your JDK version number:

```
/u01/app/oracle/java/jdk1.7.X_XX
```

The Welcome page appears.
6. Click **Next**.
The Install Software Updates page appears.
7. Select either **Skip Software Updates** or **Search My Oracle Support for Updates**.
8. If you selected **Search My Oracle Support for Updates**, type your My Oracle Support credentials. If an update is required, you are prompted to install it.
9. Click **Next**.
The Prerequisite Checks page appears.
10. Review the checks, and click **Next**.
The Specify Installation Location page appears.
11. Make sure the Oracle Middleware Home field points to the directory created in the WebLogic installation.
12. Click **Next**.
The Application Server page appears.
13. Click **Next**.
The Installation Summary page appears.
14. Click **Install**.
The Installation Progress page appears.
15. After the installation completes, click **Next**.
The Installation Complete page appears.
16. Click **Finish**.

Installing RCU and creating repositories

1. Log in to the application server as the non-privileged user.
2. Using a tool such as the tar command, unzip /u01/V37394-01.zip file to the /u01/stage directory. For example, use the following command:

```
$ cd /u01/stage/  
$ mkdir rcu  
$ cd rcu  
$ unzip /u01/stage/V37394-01.zip
```
3. In a command shell, type the following command:

```
$ ./rcuHome/bin/rcu &
```

The Welcome page appears.
4. Click **Next**.
The Create Repository page appears.
5. Click **Next**.
The Database Connection Details page appears.
6. Type the database information, including a user name with sysdba privileges, and click **Next**.
The Repository Creation Utility dialog box appears.
7. After the progress completes, click **OK**.
The Select Components page appears.
8. Expand **Oracle AS Common Schemas**, and select **Metadata Services** and **Oracle Platform Security Services**.
9. In the Create a new Prefix field, type a prefix, such as **EMPIRICA**.
10. Click **Next**.
The Repository Creation Utility - Checking Prerequisites dialog box appears.
11. Click **OK**.
The Schema Passwords page appears.
12. Specify the schema passwords, and click **Next**.

Note: Remember these passwords.

- The Map Tablespaces page appears.
13. Click **Next**.
The Repository Creation Utility - Confirmation dialog box appears.
 14. Click **OK**.
The Repository Creation Utility - Creating Tablespaces dialog box appears.
 15. Click **OK**.
The Summary page appears.
 16. Click **Create**.

The Completion Summary page appears.

17. Click **Close**.

Setting up the WebLogic domain

This section includes the following topics:

- [Creating and configuring the WebLogic domain](#)
- [Creating the nodemanager.properties file](#)
- [Starting WebLogic and the Node Manager](#)
- [Creating a data source for credential access](#)
- [Associating the credential store with the data source](#)
- [Restarting the SignalServer managed server](#)

Creating and configuring the WebLogic domain

The Empirica Signal application requires a WebLogic domain that includes Enterprise Manager and is configured for Web Service security. You can either create a new WebLogic domain or extend an existing WebLogic domain. This procedure describes how to create a new WebLogic domain.

You must use the same user account that you used when you [installed WebLogic](#).

1. In a command shell, type the following command:

```
$ cd /u01/app/oracle/product/Middleware/wlserver_10.3/common/bin
```

2. Type the following command:

```
$ ./config.sh &
```

The Welcome page appears.

3. Select **Create a new WebLogic domain**, and click **Next**.

The Select Domain Source page appears.

4. Select **Generate a domain configured automatically to support the following products**, and select the following products:

- Oracle Enterprise Manager - 11.1.1.0 [oracle_common]
- Oracle WSM Policy Manager - 11.1.1.0 [oracle_common]
- Oracle JRF - 11.1.1.0 [oracle_common]

5. Click **Next**.

The Specify Domain Name and Location page appears.

6. Type a domain name, such as **empirica**, and click **Next**.

The Configure Administrator User Name and Password page appears.

7. Type a user name and password for WebLogic administration.

Note: Remember these credentials. You use them to administer the WebLogic instance.

8. Click **Next**.

The Configure Server Start Mode and JDK page appears.

9. In the WebLogic Domain Startup Mode section, select **Production Mode**.
10. In the JDK Selection section, select **Available JDKs**, and select the 1.7.x_xx JDK that is specified in the system requirements in the *Empirica Signal Release Notes*.
11. Click **Next**.

The Configure JDBC Component Schema page appears.

12. In the table at the bottom, select the OWSM MDS schema.
13. Fill in the following fields:
 - From the **Driver** drop-down list, select the driver for either a service or instance connection.
 - For **DBMS/Service**, type the appropriate value for the driver you selected:
 - If the name of the driver contains the words **for Instance connections**, type the SID.
 - If the name of the driver contains the words **for Service connections**, type the service name.
 - For **Schema Owner**, type a value, such as EMPIRICA_MDS.
 - For **Schema Password**, type the password that you created when you created the schema in [Installing RCU and creating repositories](#).
14. Click **Next**.

The Test JDBC Component Schema page appears.

15. Click **Next**.

The Select Optional Configuration page appears.

16. Select the following options:
 - Administration Server
 - Managed Servers, Clusters and Machines
 - Deployments and Servers

17. Click **Next**.

The Configure the Administration Server page appears.

18. Select **SSL enabled**, and for **SSL listen port**, type **7002**.
19. Click **Next**.

The Configure Managed Servers page appears.

20. Click **Add**.

A row in the table becomes editable.

21. Select **SSL enabled**, and fill in the fields as follows:
 - **Name**—Type **SignalServer**
 - **Listen address**—Type the fully qualified name of the application server.
 - **Listen port**—Type **7003**.
 - **SSL listen port**—Type **7004**.

22. Click **Next**.

The Configure Clusters page appears.

23. Click Next.

The Configure Machines page appears.

24. Select the **Unix Machine tab.**

25. Click Add.

A row in the table becomes editable.

26. Fill in the fields as follows:

- **Name**—Type **SignalMachine**.
- **Node manager listen address**—Type the fully qualified name of the application server.
- **Node manager listen port**—Type **5556**, if the value is not already present.

27. Click Next.

The Assign Servers to Machines page appears.

28. In the right list of machines, select **SignalMachine.**

29. In the left list of servers, select **SignalServer, and click the right arrow button.**

The server is added to the machine.

30. Click Next.

The Target Deployments to Clusters or Servers page appears.

31. Assign deployments to the AdminServer:

- a. In the list of target servers on the left, select **AdminServer**.
- b. Deselect the **FMW Welcome Page** entry, and make sure all other entries are selected.

32. Assign deployments to the SignalServer:

- a. In the list of target servers on the left, select **SignalServer**.
- b. Deselect the **FMW Welcome Page** entry.
- c. Select the following options, if they are not already selected, and make sure all other options are not selected:
 - **wsil-wls**
 - **wsm-pm**

33. Click Next.

The Target Services to Clusters or Servers page appears.

34. In the list of target servers on the left, select **SignalServer.**

35. In the list of services on the right, select the following services, if they are not already selected:

- **JRF Startup Class**
- **JPS Startup Class**
- **JDBC**, as well as all of its child options.

36. Click Next.

The Configuration Summary page appears.

37. Click Create.

The Creating Domain page appears.

38. When progress reaches 100 percent, click Done.

The wizard closes.

39. Store your WebLogic administrator credentials so that you are not prompted for your credentials when you start WebLogic:

- a.** In the command shell, navigate to the AdminServer directory under the empirica domain. For example, navigate to the following location:

```
/u01/app/oracle/Middleware/user_projects/domains/empirica
```

- b.** If the following directory structure does not exist within the empirica directory, create it:

```
servers/AdminServer/security
```

Note: The directory names are case-sensitive. Capitalize the words as they are shown.

- c.** Using a text editor, edit the `boot.properties` file in the security directory. This step creates the file, if it does not already exist.

- d.** Type the following lines in the file, providing the user name and password that you created when you created and configured the WebLogic domain. For more information, see [Creating and configuring the WebLogic domain](#).

```
- username=<weblogic_admin_user>
- password=<weblogic_admin_password>
```

- e.** Save the file, and close the text editor.

Creating the nodemanager.properties file

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

- 1.** Navigate to the `$WL_HOME/server/bin` directory, such as:

```
/u01/app/oracle/Middleware/wlserver_10.3/server/bin
```

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

```
$ ./startNodeManager.sh <listen_address> 5556
```

where `<listen_address>` is the value you entered in [Creating and configuring the WebLogic domain](#).

- 3.** After the console says **<secure socket listener started on port 5556>**, press **Ctrl+C**.

The Node Manager stops.

- 4.** Navigate to the `$WL_HOME/common/nodemanager` directory, such as:

```
/u01/app/oracle/Middleware/wlserver_10.3/common/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

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

- StopScriptEnabled
- StartScriptEnabled

6. Save the file, and exit the vi editor.

Starting WebLogic and the Node Manager

1. Navigate to the WebLogic default domain bin directory, using a command such as the following:

```
$ cd /u01/app/oracle/Middleware/user_projects/domains/empirica/bin
```

2. Start WebLogic using the following command:

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

Note: Information messages might appear. You might need to press Enter to see the prompt.

3. Navigate to \$WL_HOME/server/bin directory, such as:

```
/u01/app/oracle/Middleware/wlserver_10.3/server/bin
```

4. Execute following command

```
$ nohup ./startNodeManager.sh &
```

5. Verify that the Node Manager can be reached:

- a. In an internet browser, enter the URL for the WebLogic Administration Console, such as the following:

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

- b. In the left pane, expand **Environment**, and select **Machines**.

The Summary of Machines page appears.

- c. In the list of machines, select **SignalMachine**.

The Settings for SignalMachine page appears.

- d. Select the **Monitoring** tab.

- e. Confirm that the status is Reachable. If status is Inactive, the Node Manager is not running.

6. Start Managed Server using the Node Manager:

- a. In an internet browser, enter the URL for the WebLogic Administration Console, such as the following::

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

- b. In the left pane, expand **Environment**, and select **Servers**.

- c. Select the **Control** tab.

- d. Select **SignalServer**, and click **Start**.
7. Apply the JRF Template to the Managed Server:
 - a. In an internet browser, enter the URL for the Oracle Enterprise Manager, such as the following:
<https://<servername>:7002/em>
 - b. In the left pane, expand **Weblogic Domain**, expand **empirica**, and select the **SignalServer**.
 - c. Click **Apply JRF Template**, located at the top of the page.
8. Restart the SignalServer managed server:
 - a. In an internet browser, enter the URL for the WebLogic Administration Console, such as the following:
<https://<servername>:7002/console>
 - b. In the left pane, expand **Environment**, and select **Servers**.
The Summary of Servers page appears.
 - c. Select the **Control** tab.
 - d. From the list of servers, select the **SignalServer**.
 - e. From the **Shutdown** drop-down list, select **Force Shutdown Now**.
 - f. After the state of the SignalServer changes to **Shutdown**, select the check box for **SignalServer** in the table, and click **Start**.

Creating a data source for credential access

To set up a data source in the WebLogic Administration Console for the credential store:

1. In an internet browser, enter the URL for the WebLogic 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**.
4. In the right pane, click the **New** button, and from the drop-down list that appears, select **Generic Data Sources**.
The JDBC Data Source Properties page appears.
5. Type values for the following fields:
 - **Name**—For example, type **Empirica Credential Store**.
 - **JNDI Name**—For example, type **jdbc/mds/opss**.
6. Click **Next**.
The JDBC Data Source Properties page appears.
7. Click **Next**.
The Transaction Options page appears.
8. Click **Next**.

The Connection Properties page appears.

9. Fill in the following names:
 - **Database Name**—Type the SID.
 - **Host Name**
 - **Port**
 - **Database User Name**—For example, EMPIRICA_OPSS.
 - **Password, Confirm Password**—Type the password that you entered when you [installed RCU](#).

10. Click **Next**.

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** and **SignalServer**.

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.

Associating the credential store with the data source

1. In an internet browser, enter the URL for the Oracle Enterprise Manager, such as the following:

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

2. In the left pane, expand **WebLogic Domain**, and select **empirica**.

3. In the right pane, expand the **WebLogic Domain** drop-down menu at the top of the page, and select **Security > Security Provider Configuration**.

The Security Provider Configuration page appears.

4. In the Security Stores area, click **Change Store Type**.

The Configure Security Stores page appears.

5. From the **Store Type** drop-down list, select **Oracle Database**.

6. Next to the **Data Source JNDI Name** field, click **Select**, select the **Empirica Credential Store**, and click **OK**.

7. In the Data Source Properties area, type the:

- **User name**—Name of the database user name, such as EMPIRICA_OPSS.
- **Password, Confirm Password**—Password for the schema that you created in [Installing RCU and creating repositories](#).

8. In the **Root DN** field, type **cn=root**.

9. Select **Create new domain**.
10. In the **Domain Name** field, type **empirica**.
11. Click **OK**.

A message appears, indicating that the domain must be restarted.
12. Click **Yes**.

The domain restarts. A confirmation dialog box appears and displays the results.
13. Click **Close**.

The credential store is set up.
14. Stop and restart the WebLogic server.

Restarting the SignalServer managed server

1. In an internet browser, enter the URL for the WebLogic Administration Console, such as the following:
<https://<servername>:7002/console>
2. In the left pane, expand **Environment**, and select **Servers**.

The Summary of Servers page appears.
3. Select the **Control** tab.
4. From the list of servers, select the **SignalServer**.
5. From the **Shutdown** drop-down list, select **Force Shutdown Now**.
6. After the state of the SignalServer changes to **Shutdown**, select the check box for **SignalServer** in the table, and click **Start**.

Configuring SSL

The 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.

Perform the following steps to configure WebLogic to use SSL for production use of the Empirica Signal application. For more information, see the following document:

http://docs.oracle.com/cd/E23943_01/web.1111/e13707/ssl.htm

1. Obtain an SSL certificate from a Certification Authority.
2. Using the WebLogic Administration Console, configure both AdminServer and SignalServer to use your SSL certificate. For more information, see the following document:
http://docs.oracle.com/cd/E23943_01/apirefs.1111/e13952/taskhelp/security/ConfigureKeystoresAndSSL.html
3. Configure the Node Manager to use your SSL certificate. For more information, see the following document:
http://docs.oracle.com/cd/E23943_01/doc.1111/e15483/node_manager.htm#CCHEBIHI

Troubleshooting

This section includes the following topics:

- [Issue: An error occurs when you try to log in because the application cannot connect to the database.](#)
- [Issue: An error occurs when you select Save to Topic, and the weberror.log contains an error message about a missing security heading.](#)
- [Issue: The password for the OPSS database account changes.](#)

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

Resolution:

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

1. Restart WebLogic using the following commands:

```
$ ./stopWebLogic.sh
```

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

2. In the WebLogic 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 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 WebLogic start script (`startWebLogic.sh`) in your domain directory, such as the following directory:

```
/u01/app/oracle/Middleware/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 WebLogic 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/Middleware/user_
projects/domains/empirica/servers/AdminServer/stage/signal/signal/
...
```

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

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

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

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

Issue: An error occurs when you select Save to Topic, and the weberror.log contains an error message about a missing security heading.

Resolution: In the Enterprise Manager, check that the OWSM user token policy, either SSL or non-SSL, is correctly added.

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


```
$ cd
/u01/app/oracle/Middleware/user-projects/domains/empirica/config/fm
wconfig.
```
 - b. In a command shell, start WLST using a command such as:


```
$ /u01/app/oracle/Middleware/oracle_common/common/bin/wlst.sh
```

 The following prompt appears:


```
wls:offline>
```
 - c. 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.
 - d. To exit WLST, execute the **exit()** command.
- The data source associated with the OPSS schema database account.
 - a. Open the WebLogic Administration Console.
 - b. Expand **Services**, and select **Data Sources**.
 - c. Select the **Data Source** entry.

If you followed the recommendations in [Creating a data source for credential access](#), the data source is named **Empirica Credential Store**, and the JDNI name is **jdbc/mds/opss**.

- d. Select the **Configuration** tab, and select the **Connection Pool** tab.
- e. In the Change Center section on the left, click **Lock & Edit**.
- f. Scroll to the Password and Confirm Password fields.
- g. Type the account password in both fields, and click **Save**.
- h. 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.

1. Open the WebLogic Administration Console.
2. 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. Type the account password in both fields, and click **Save**.
9. In the Change Center section on the left, click **Activate Changes**.

