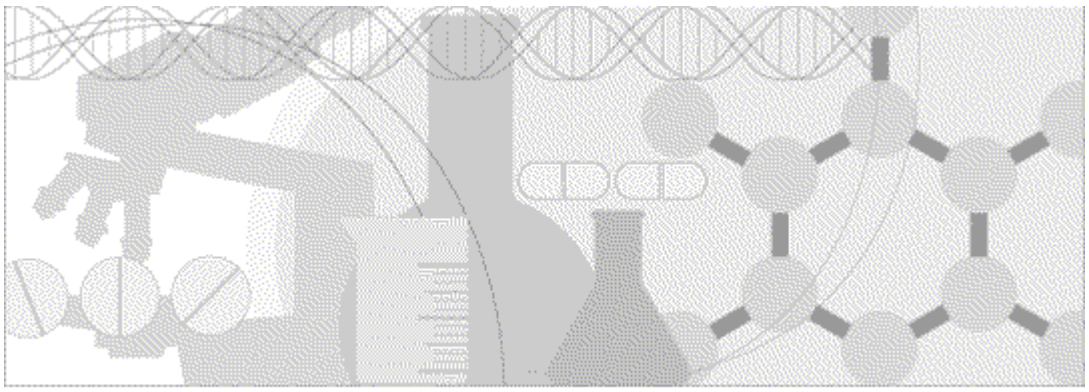
Installation Instructions

Oracle® Health Sciences Empirica Healthcare 1.0



ORACLE

Part number: E49243-01

Contents

CHAPTER 1

About this release

In this chapter

About the Empirica Healthcare 1.0 release

Before beginning the installation, check the Oracle Software Delivery Cloud (https://edelivery.oracle.com) for the latest patchsets and patches, as well as the accompanying Release Notes and Known Issues documents, and the latest versions of the documentation.

Related information

Empirica Healthcare 1.0 documentation

All documentation is available from the Oracle Software Delivery Cloud (https://edelivery.oracle.com) and the Oracle Technology Network.

All documents may not be updated for every Empirica Healthcare release. Therefore, the version numbers for the documents in a release may differ.

Document	Description	Last updated
Release Notes	The *Release Notes* document provides high-level descriptions of the main features in this release of the Empirica Healthcare application, as well as system requirements.	1.0
Known Issues	The *Known Issues* document provides detailed information about the known issues in this release, along with workarounds, if available.	1.0
User Guide	The *User Guide* describes how to use the Empirica Healthcare application to perform epidemiologic and statistical analyses of commercially available healthcare and administrative claims data.	1.0
Installation Instructions	The *Installation Instructions* document describes how to install the Empirica Healthcare software.	1.0
Secure Configuration Guide	The *Secure Configuration Guide* provides guidance and recommendations on securely installing, configuring, and managing the Empirica Healthcare software and its system components.	1.0
Third Party Licenses and Notices	The *Third Party Licenses and Notices* document includes licenses and notices for third party technology that may be included with the Empirica Healthcare software.	1.0

If you need assistance

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

CHAPTER 2

Empirica Healthcare overview

In this chapter

Introduction to the Empirica Healthcare software

The Empirica Healthcare software is a data analysis environment for exploring multiple sources of the following types of data:

- Population-based temporal, clinical data, such as electronic healthcare records.
- Administrative data, such as insurance claims.

The application informs and supports pharmacovigilance, pharmacoepidemiological, and risk management activities at the following organizations:

- Life sciences organizations, such as pharmaceutical and drug safety regulatory organizations.
- Healthcare organizations, such as payer and provider organizations.

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 Healthcare 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:

- Healthcare_Install.tar.gz

  This file contains the components for installing the Empirica Healthcare software.

- Healthcare-1_0_0_0_XXX.zip

  This file contains the build that you install, where XXX is the build number.

- Database.zip

  This file contains scripts for setting up the Empirica Healthcare database account.

CHAPTER 3

Planning your installation

In this chapter

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 for the database.
- 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 datafiles 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/jdk1.6.0_43
- 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://<*server name*>:7002/console
  - Administrative account name and password.
- For single-sign on (SSO) installations, the following information:
  - Native login port number to use for initially changing the Empirica Healthcare admin password.
  - Port number to use for normal SSO Empirica Healthcare connections on the server.
  - SSO logout URL.

Checklists

The following checklists walk you through the installation process:

1 *Checklist—Preparing the database and application servers* (on page 16).

2 *Checklist—Setting up the Empirica Healthcare software* (on page 28).

CHAPTER 4

Preparing the database and application servers

In this chapter

Checklist—Preparing the database and application servers

☑	Task		More information
❑	1	Obtain an SSL certificate and install it on the application server.	None, setting up SSL is outside the scope of this document.
❑	2	Make sure you have the required privileges for each server.	*Required privileges for the database server* (on page 17). *Required privileges for the application server* (on page 18).
❑	3	Review the assumptions that this guide makes about environment variables for the Linux accounts.	*Assumptions about environment variables* (on page 19).
❑	4	Set the default file creation umask.	*Setting the default file creation umask* (on page 19).
❑	5	Download the Toolbox.zip file.	*Downloading the Toolbox.zip file* (on page 20).
❑	6	Unpack the installation files.	*Unpacking the installation files into the installation directory* (on page 20).
❑	7	Configure the connection to the Oracle database.	*Adding the database TNSNAMES entry* (on page 21). *Setting environment variables* (on page 21).
❑	8	Set up the Empirica Healthcare database account.	*Setting up the Empirica Healthcare database account* (on page 22).
❑	9	Set up the YUM repository.	*Setting up the YUM repository* (on page 23).
❑	10	Install unlimited strength encryption Java libraries.	*Installing unlimited strength encryption Java libraries* (on page 23).
❑	11	Install and configure Xvfb.	*Determining whether Xvfb is installed* (on page 23). *Configuring Xvfb* (on page 24).
❑	12	Modify the default WebLogic Configuration.	*Modifying the default WebLogic Configuration* (on page 24).

Required privileges for the database server

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

- A user account that belongs to a group, such as dba, 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 belongs to a group, such as dba, 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 and that is a member of the group that is able to start and stop WebLogic. 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

Assumptions about environment variables

The installation makes the following assumptions about Linux user accounts:

- The user accounts do not customize their Oracle-specific environment variables, such as:
  - ORACLE_HOME
  - ORACLE_BASE
  - ORACLE_SID
- The user accounts do not override the default PATH variable in such a way that conflicts with the instructions in this guide.

Oracle recommends using a simple setup and using the instructions in this guide to set the environment variables.

Setting the default file creation umask

Perform this step for 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 offer read-only access to other users in your group (dba) and no permissions to users outside the group.

  This change takes effect after you log out and log in again.

Preparing the installation staging area

Downloading the Toolbox.zip file

1 Navigate to the following URL:

http://www.drugepi.org/toolbox-archive/

2 Download the **Pharmacoepidemiology Toolbox including High-dimensional Propensity Score (hd-PS)** package, version 2.4.11.

This guide refers to this package as Toolbox.zip.

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 Healthcare 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 Healthcare_Install.tar.gz to the /u01/stage directory.

The /u01/stage/Healthcare_Install directory is created.

Note: In this document, $INSTALL_DIR refers to the folder created in this step, such as u01/stage/Healthcare_Install.

3 Using a tool such as UnZip, unpack the Healthcare-1_0_0_0_XXX.zip file into the $INSTALL_DIR/Healthcare directory.

4 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.

5 Using a tool such as UnZip, unpack the contents of the Toolbox.zip file that you downloaded in *Downloading the Toolbox.zip file* (on page 20) into the following directory:

/u01/stage

A directory named toolbox is created within the /u01/stage directory.

Configuring the connection to the Oracle database

Adding the database TNSNAMES entry

1 On the application server, open the tnsnames.ora file.

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* (on page 12).

Setting environment variables

Perform the following steps on the application server using your privileged account and using sudo. For example, you could run the command **sudo vi <file_name>**.

1 To support sh and bash login shells, add the following lines to the /etc/profile file.

For the values in the first three 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
```

2 Add the bin directory of your Oracle client installation to the PATH variable.

For example, add the following text to the /etc/profile. Replace the bold text with the appropriate value.

```
export PATH=/u01/app/oracle/product/11.2.0/client_1/bin:$PATH
```

3 To support csh and tcsh login shells, add the following lines to the /etc/csh.login file.

For the values in the first three 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
```

4 Add the bin directory of your Oracle client installation to the PATH variable.

For example, add the following text to the /etc/csh.login file. Replace the bold text with the appropriate value.

```
setenv PATH /u01/app/oracle/product/11.2.0/client_1/bin:${PATH}
```

Setting up the Empirica Healthcare database account

1 Review the 1_create_healthcare_tablespaces_linux.sql file:

   a Open the file from the following directory:

   /u01/stage/Database

   b Verify that the datafile_path in the file points to your preferred location for the tablespace data files.

   c If the path does not point to the preferred location, use a non-privileged user account to edit the file as needed. You might need to make the file writable first.

   For example:

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

2 Create the application tablespace:

   a Open a command shell.

   b Execute the 1_create_healthcare_tablespaces_linux.sql script from the Oracle sys account.

   For example, type:

```
$ sqlplus "sys@<TNS_Name> as sysdba" \
   @/u01/stage/Database/1_create_healthcare_tablespaces_linux
```

   c When prompted, type the Oracle sys account password.

3 Create the application Oracle user and schema:

   a In the command shell, type the following text:

```
$ sqlplus "sys@<TNS_Name> as sysdba" \
   @/u01/stage/Database/2_create_healthcare_oracle_user
```

   b When prompted, type the Oracle sys account password.

   c When prompted a second time, create a password for the Empirica Healthcare database account. Retype the password to verify it. Remember this password for later in this procedure.

4 Populate the application schema:

   a Open a command shell.

   b Execute the 3_create_all.sql script from the Empirica Healthcare database account. For example:

```
$ sqlplus healthcare@mydatabase @/u01/stage/Database/3_create_all
```

   c When prompted, type the Empirica Healthcare database account password that you created in the previous step.

Preparing the environment on the application server

Setting up the YUM repository

Perform these steps on the application server to set up the YUM repository. YUM is a package management utility for Linux. The utility is used to install required components.

Depending upon your configuration, you might need to perform additional or different steps to allow required components to be installed. Consult your system administrator.

1 Using the privileged user account, execute the following commands.

The $ and # symbols represent prompts. Do not include the symbols in the commands.

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
# rpm --import /etc/pki/rpm-gpg/RPM-GPG-KEY
# cp $INSTALL_DIR/yum/public-yum-el5.repo /etc/yum.repos.d
```

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

Installing unlimited strength encryption Java libraries

Perform these steps on the application server.

- 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 command in a command shell:

```
$ sudo cp -f $INSTALL_DIR/java/*.jar
/usr/java/jdk1.6.0_43/jre/lib/security/
```

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 report 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* (on page 24).

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

3 If Xvfb is not installed, type the following command:

```
$ sudo yum install Xvfb
```

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/base_domain/bin.

1 Using the non-privileged user account, open the file setDomainEnv.sh in a text editor, such as vi.

2 Search for the line starting with the following text:

IF USER_MEM_ARGS the environment variable

3 Type the following text above the comment, adjusting values for the following considerations:

- If you are not using UTC for the time zone, adjust the time zone in the text accordingly.
- -XmxNNNNm and –XX:MaxPermSize are memory parameters that control the amount of memory used by the Empirica Healthcare 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.

```
# Local Customization
export USER_MEM_ARGS="-Xms256m –Xmx2048m  -XX:MaxPermSize=1024m"
export LANG=en_US.UTF-8
export TZ=UTC
export DISPLAY=localhost:99.0
```

4 In the setDomainEnv.sh file, search for instances of ojdbc6dms.jar:

- If no instances exist, continue to step 5.
- 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 [ "${PRE_CLASSPATH}" != "" ] ; then
    PRE_CLASSPATH="${ORACLE_HOME}/jdbc/lib/ojdbc6.jar${CLASSPATHSEP}${PRE_CLASSPATH}"
    export PRE_CLASSPATH
else
    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.

5 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/fmw/oracle_common -Djava.awt.headless=true"
```

  with the following text:

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

6 Relocate the poi-2.5-final-20040302.jar file:

a Copy the poi-2.5-final-20040302.jar file from the following location:

  $INSTALL_DIR/Healthcare/WEB-INF/lib/

  to the lib directory under the WebLogic domain directory, such as the following directory:

  /u01/app/oracle/Middleware/user_projects/domains/base_domain/lib

b Delete the poi-2.5-final-20040302.jar file from the following location:

  $INSTALL_DIR/Healthcare/WEB-INF/lib/

CHAPTER 5

Setting up the Empirica Healthcare software

In this chapter

Checklist—Setting up the Empirica Healthcare software

☑	Task		Information
❑	1	Run setup to create the license.config file.	*Running setup to create the license.config file* (on page 29).
❑	2	Configure properties files.	*Reviewing the webvdme.properties file* (on page 30). *Reviewing the listener.properties file* (on page 32). *Creating the webvdme-fonts.properties file* (on page 32). *Setting up the log4j.properties file* (on page 32).
❑	3	Install the pharmacoepi.jar file.	*Installing the pharmacoepi.jar file* (on page 34).
❑	4	Add manifest entries to JAR files.	*Adding manifest entries to JAR files* (on page 35).
❑	5	Start WebLogic.	*Starting WebLogic* (on page 36).
❑	6	Set up the Empirica Healthcare deployment in WebLogic.	*Setting up the Empirica Healthcare deployment in WebLogic* (on page 37).
❑	7	Set the passwords of the admin and system users.	*Setting the passwords of the admin and system users* (on page 38).

Running setup to create the license.config file

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

1 Navigate to the following directory:

$INSTALL_DIR/bin/

2 Edit the generate_keys.sh file:

a Verify that the following variables are set to the correct values for your system:

- INSTALL_ROOT
- JAVA_HOME

This variable must point to the JDK installation directory.

b If the variables are not set to the correct values, edit the values as needed.

3 In a command shell, navigate to $INSTALL_DIR, and execute the following command:

```
$ bin/generate_keys.sh
```

The following response appears:

```
[INFO] Generating
/u01/stage/Healthcare_Install/Healthcare/WEB_INF/classes/ESAPI.properties
[INFO] Generating
/u01/stage/Healthcare_Install/Healthcare/WEB_INF/classes/license.config
```

Configuring properties files

Reviewing the webvdme.properties file

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

Prerequisites: If you intend to configure the Empirica Healthcare software to use single sign-on (SSO) with Oracle Access Manager (OAM), refer to *Single sign-on (SSO) - Oracle Access Manager (OAM) setup* (on page 46) for configuration details.

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

1 Navigate to the following directory:

$INSTALL_DIR/Healthcare/WEB-INF/classes

2 Copy the template_webvdme.properties file within the same directory.

3 Rename the new file to 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. For typical installations, you must modify the values for b and c in the following list.

a user=healthcare

b 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

c sqlldr_connect=tnsnames_alias

Example: sqlldr_connect=orcl

6 Make sure that the following properties exist in the file. Do not assign values to the properties.

- pass=
- encrypt_pass=

7 Modify the temp_dir entry so that it points to a location such as the following:

/u01/app/oracle/product/EHC/temp

This directory will hold temporary files created by the Empirica Healthcare software.

8 Save the file, and exit the editor.

9 Create the temp_dir directory, if it does not already exist. Make sure to create this directory such that the non-privileged user account has write access to it.

10 Store the Empirica Healthcare database account password established in *Setting environment variables* (on page 21) in the webvdme.properties file in encrypted form:

a Open a command shell.

b Navigate to the following directory:

$INSTALL_DIR/bin

c Execute the following statement:

```
java -jar EmpiricaPropPassword.jar \
   -license_file $INSTALL_DIR/Healthcare/WEB-INF/classes/license.config
   \
   -property_name pass \
   -property_file $INSTALL_DIR/Healthcare/WEB-
   INF/classes/webvdme.properties
```

The Password prompt appears.

d Type the password for the Empirica Healthcare database account.

The Re-enter Password prompt appears.

e Retype the password. The passwords are not echoed, but they must match.

If the password is successfully set, informational messages appear, ending with the following message:

```
"Password written under property named 'pass'".
```

Note: If the passwords do not match, an error message appears. Try the process again.

f Open the webvdme.properties file, and make sure a value is set for the **pass** entry. The encrypt_pass property does not require a value, but the property must be present.

11 Optionally, configure the Empirica Healthcare software for single sign-on (SSO):

a In the file webvdme.properties, 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, which you obtained in *Information to collect before you begin* (on page 12). For example:

sso.EmpiricaSsoPlugin.logoutRedirectUrl=https://ssoServer:port/oamsso/logout.jsp

c Update the session timeout value:

a Navigate to the following directory:

$INSTALL_DIR/Healthcare/WEB-INF

b Open the web.xml file.

c Set the value of the **session-timeout** parameter so that it is the same value as the session timeout value for the single sign-on setup in the organization.

Reviewing the listener.properties file

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

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

1 Navigate to the following directory:

$INSTALL_DIR/Healthcare/WEB-INF/classes

The directory contains the template_listener.properties file.

2 Copy the template_listener.properties file within the same directory.

3 Rename the new file to listener.properties.

4 Using a text editor, open the listener.properties file.

5 Edit the values as needed.

> **Note:** If R version 2.13.2 is installed on your application server, set the property r_path to the path of the R executable.

6 Save and close the file.

Creating the webvdme-fonts.properties file

The webvdme-fonts.properties file stores font information.

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

1 Navigate to the following directory:

$INSTALL_DIR/Healthcare/WEB-INF/classes

The directory contains the template_webvdme-fonts.properties file.

2 Copy the template_webvdme-fonts.properties file within the same directory.

3 Rename the new file to webvdme-fonts.properties.

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/Healthcare/WEB-INF/classes

2 Open the log4j.properties file, and replace the following string:

```
${catalina.base}/logs/weberror.log
```

with the location for storing the application log files, such as:

```
/u01/app/oracle/product/EHC/logs/weberror.log
```

3 Replace the following line:

```
log4j.logger.org.apache.jsp=info
```

with the following line:

```
log4j.logger.jsp_servlet=info
```

Installing the pharmacoepi.jar file

- Copy the pharmacoepi jar file from the following location:

  /u01/stage/toolbox/java

  to the following location:

  $INSTALL-DIR/Healthcare/WEB-INF/lib

Adding manifest entries to JAR files

If you do not perform these steps, security-related dialog boxes appear for end users when they work with single-patient and multi-patient timelines.

Prerequisites

Make sure you have access to the jar command.

To add manifest entries to JAR files:

1 In the $INSTALL_DIR/AppJars/DataMontage directory, copy the following files into an empty directory that is outside the AppJars/DataMontage directory:

- lti.jar
- DataMontage.jar

2 Update the manifest in both JAR files:

a Create a text file and save it. You can use any file name. The example later in this procedure uses the name MANIFEST.MF.

b In the file, insert a line of text with the fully qualified domain name of the server that hosts WebLogic and the WebLogic connection port.

Specific text allows for a more secure deployment of the applets. If you cannot obtain the fully qualified domain name, you can use an asterisk (*) as a wildcard, or you can use the IP address of the server.

For example: **Codebase: *.oracle.com:7002**

c Insert a line break after the line of text, and save and close the file.

d Open a command shell and navigate to the directory containing the text file you created and the JAR files.

e In the command shell, issue the following commands, replacing MANIFEST.MF with the name of the text file you created:

- jar umf MANIFEST.MF DataMontage.jar
- jar umf MANIFEST.MF lti.jar

3 Sign the JAR files. Use your company's processes to perform this task.

4 Copy the signed JAR files to the $INSTALL_DIR/AppJars/DataMontage directory, replacing the original files.

5 Copy the signed DataMontage.jar file to the WEB-INF/lib directory, replacing the original file.

Starting WebLogic

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:

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

2 Execute the following command:

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

Setting up the Empirica Healthcare deployment in WebLogic

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

1 Log in to the WebLogic Console using the administrative username and password provided to you by the system administrator. Typically, the address for the WebLogic Console is the following:

https://servername:7002/console

2 On the left pane named **Domain Structure**, click **Deployments**.

3 On the left pane named **Change Center**, if the buttons in the Deployments table on the right are not enabled, click the **Lock & Edit** button.

The buttons are enabled.

4 In the **Deployments** table on the right, click the **Install** button.

5 In the console, navigate to the following directory:

$INSTALL_ROOT

6 Select the **Healthcare** radio button, and click **Next**.

7 Select **Install this deployment as an application**, and click **Next**.

8 Leave the default selections in the first two sections on the page.

9 In the **Source accessibility** section, select **Copy this application onto every target for me**, and click **Next**.

10 Click **Finish**.

11 In the **Domain Structure** pane on the left, select **Deployments**, and inspect the State of the Healthcare application in the Deployments table on the right:

- If the state of the deployment is **Active**, you have completed the installation.
- If the state of the deployment is **New** or **distribute Initializing**, do the following:
  a On the **Change Center** pane in the upper left, click the **Activate Changes** button.

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

  b Select the checkbox to the left of the Healthcare deployment, click the **Start** button, and select **Servicing all requests** from the drop-down list.

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

Setting the passwords of the system and admin users

The **system** account is used internally by the Empirica Healthcare software. You cannot use the **system** account to log in to the Empirica Healthcare 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 Healthcare software. You must set the password for the product installation to be complete.

Prerequisites

- You must have read access to all files in the directories in the classpath and write access to runPasswordReset.sh file.
- The database must be up and reachable by using the Empirica Healthcare database account and credentials defined in webvdme.properties.

To set the passwords:

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/jdk1.6.0_43
ORACLE_JDBC=$ORACLE_HOME/jdbc/lib/ojdbc6.jar
WEBLOGIC_MODULES_DIR=/u01/app/oracle/product/fmw/modules

# Product installation staging locations
INSTALL_ROOT=/u01/stage/Healthcare_Install
PRODUCT_BASE_DIR=$INSTALL_ROOT/Healthcare
```

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. If you have changed the default password requirements, the password must meet the requirements established by the Empirica Healthcare 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.

CHAPTER 6

Post-installation configuration

In this chapter

Configuring the Empirica Healthcare software

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

1 To test that the site is set up correctly, open the Microsoft Internet Explorer browser, and navigate to the following address:

https://<*server name*>:7002/Healthcare

Notes:

- If your site is not configured to require SSL connections, use the following values. Oracle recommends requiring SSL connections.
  - **http://** instead of **https://**.
  - **7001** instead of **7002**.
- 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 ***Information to collect before you begin*** (on page 12).

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 admin and system users*** (on page 38).

3 When prompted, change your password.

You are logged out of the software.

4 Log in using the default 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 If R version 2.13.2 is installed on your system and you specified the r_path property in ***Reviewing the listener.properties file*** (on page 32), you can select **Show Evaluative Analysis tab** to enable the evaluative analysis feature.

If R version 2.13.2 is not installed on your system, ensure that **Show Evaluative Analysis tab** is not selected. This disables the evaluative analysis feature.

d Make sure that all other site options are set correctly. If you change any site options, save the changes.

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 Healthcare 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* (on page 12).

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 Healthcare installation is complete.

APPENDIX A

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

In this appendix

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

To configure the Empirica Healthcare software to use single sign-on (SSO) using Oracle Access Manager (OAM), use the following XML as a template for registering the Empirica Healthcare OAM SSO agent on the OAM server. The script registers an OAM agent with a Webgate ID.

Replace the bold values with appropriate values for your installation. In the following example, **EmpiricaHealthcare** is the name of your registered SSO agent or Webgate ID. The name must be unique in the OAM environment. You will be prompted for the Webgate ID when you install and configure Webgate on the Empirica Healthcare application server.

```
<?xml version="1.0" encoding="UTF-8"?>
<OAMRegRequest>
   <serverAddress>https://<OAM_server>.oracle.com:7002</serverAddress>
      <hostIdentifier>EmpiricaHealthcare</hostIdentifier>
      <agentName>EmpiricaHealthcare</agentName>
<cachePragmaHeader>private</cachePragmaHeader>
<cacheControlHeader>private</cacheControlHeader>
      <protectedResourcesList>
         <resource>/Healthcare/</resource>
         <resource>/Healthcare</resource>
      </protectedResourcesList>
      <publicResourcesList>
         <resource>/index.html</resource>
         <resource>/Healthcare/ping.jsp</resource>
         <resource>/Healthcare/utlLogout.jsp</resource>
      <resource>/Healthcare/AppJars/DataMontage/lti.jar</resource>
      <resource>/Healthcare/AppJars/DataMontage/lti.jar/.../*</resource>
      <resource>/Healthcare/AppJars/DataMontage/DataMontage.jar</resource>
      <resource>/Healthcare/AppJars/DataMontage/DataMontage/.../*</resource>
   </publicResourcesList>
   <excludedResourcesList>
         <resource>/Healthcare/servlet/event</resource>
         <resource>/Healthcare/servlet/event/</resource>
   </excludedResourcesList>
</OAMRegRequest>
```