



## 12.8 Install OpenClinica 3.2 on Linux

These instructions have been verified for CentOS 6.5.

These instructions are for installing version 3.2 of OpenClinica, and also apply to installing the maintenance releases of 3.2 for example 3.2.1. When you see *v.x* or *v.x.y* in the instructions, use your version number, e.g. 3.2.1.

### Overview of Installation on Linux Systems

Use the following process to acquire, install, and configure OpenClinica and its software dependencies. In each step, click the link to view detailed instructions for that step:

1. Ensure your [operating system meets the specified requirements](#)
2. [Download the installation files](#)
3. [Install Java](#)
4. [Install Tomcat](#)
5. [Install PostgreSQL database](#)
6. [Set up the PostgreSQL database](#)
7. [Deploy OpenClinica within Tomcat](#)
8. [Set Tomcat to start](#)
9. [Configure the OpenClinica application](#)
10. [Restart the system and verify access to OpenClinica](#)
11. [Configure Tomcat to use HTTPS](#)
12. [Verify the installation](#) by ensuring you can log in to OpenClinica.

After completing the OpenClinica installation, see the [Overview of OpenClinica](#) for instructions to start using the application. A good first step is to define one or more users (especially a Study Director) and then build a Study.

### Operating System Requirements

The following packages should be installed for your Operating System:

- vim
- unzip
- tar

You require "root" user access. Run all commands in the installation instructions using root-level permission.

# Download Installation Files

OpenClinica and OpenClinica Web Services run and depend on several external software technologies: the Java Development Kit, the Apache Tomcat Servlet Container, and the PostgreSQL relational database (unless you are using the Oracle database).

The OpenClinica website has a copy of the necessary installers for Java, Tomcat, and PostgreSQL for you to download. If you choose to use versions of Java, Tomcat, and PostgreSQL other than those provided on the website, please note that they have not been tested with the OpenClinica application.

There are 32-bit and 64-bit editions of the software, when applicable. To determine if your system is running a 32-bit or 64-bit operating system, in your Linux terminal, run

```
uname -a
```

The display reports the version:

- If i386 or i686 displays, it is a 32-bit operating system.
- If x86\_64 displays, it is a 64-bit operating system.

To download the installation files:

1. Run the following commands to create the OpenClinica directory on your system and to make it the current directory:

```
mkdir -p /usr/local/oc/install  
cd /usr/local/oc/install
```

2. Run the following commands to download the Java, Tomcat, and PostgreSQL files for your architecture. In the commands, substitute v.x with the version of OpenClinica you are installing ( e.g. 3.1):

- For 32-bit operating systems, to get the files from OpenClinica run:

Apache Tomcat: <https://openclinica.app.box.com/oc-downloads/1/2186656927>

JDK and Postgres:

<https://openclinica.app.box.com/oc-downloads/1/2186650849>

- For 64-bit operating systems, to get the files from OpenClinica, run:

Apache Tomcat: <https://openclinica.app.box.com/oc-downloads/1/2186656927>

JDK and Postgres:

<https://openclinica.app.box.com/oc-downloads/1/2186651363>

- Instead of downloading the files from the above links, you can download them directly from their native websites:

- PostgreSQL:<http://www.postgresql.org/>

- Java:<http://www.oracle.com/technetwork/java/index.html>

- Tomcat:<http://tomcat.apache.org/>

3. Download the OpenClinica software from the OpenClinica website, using this location:<https://community.openclinica.com/project/openclinica>. To download the software, you need an [OpenClinica community user account](#), which is free to create; you will be required to log in to the account to download the OpenClinica software.

After downloading the OpenClinica software, move it to the directory where you downloaded the other software components to:

```
/usr/local/oc/install
```

## Install Java

The OpenClinica software is written in the Java programming language, so you must have Java installed on your system in order to run the OpenClinica application.

1. The current directory on your system should be `/usr/local/oc/install`. If it is not, make it the current directory by running:

```
cd /usr/local/oc/install
```

2. Install Java by running:

```
tar -zxvf jdk-7*
```

3. Install Java in the operating system by running:

```
mv jdk1* /usr/local/  
ln -s /usr/local/jdk1* /usr/local/java
```

Java is now installed in the correct location.

## Install Tomcat

The OpenClinica software uses the [Apache Tomcat](#) Java application server.

1. The current directory on your system should be `/usr/local/oc/install`. If it is not, make it the current directory by running:

```
cd /usr/local/oc/install
```

2. Install Tomcat by running the following:

```
tar -zxvf apache-tomcat-  
mv apache-tomcat-* /usr/local/
```

```
ln -s /usr/local/apache-tomcat-7.0.52 /usr/local/tomcat
/usr/sbin/adduser tomcat
```

3. Move the web apps provided with Tomcat that are not needed by OpenClinica to another location by running:

```
mkdir /usr/local/tomcat/oldwebapps
mv /usr/local/tomcat/webapps/* /usr/local/tomcat/oldwebapps
```

Tomcat is now installed.

## Install PostgreSQL Database

The OpenClinica software uses PostgreSQL as an underlying relational database management system. Complete these instructions to install the PostgreSQL database.

1. The current directory on your system should be `/usr/local/oc/install`. If it is not, make it the current directory by running:

```
cd /usr/local/oc/install
```

2. Start the PostgreSQL setup by running:

```
chmod a+x postgresql-8.4.*
./postgresql-8.4.* --mode text
```

The PostgreSQL Setup Wizard starts.

3. For most of the options in the Setup Wizard, accept the defaults. Complete the Setup Wizard as follows:

Prompt	Action
Installation Directory [/opt/PostgreSQL/8.4]	Press Enter to accept.
Data Directory [/opt/PostgreSQL/8.4/data]	Press Enter to accept.
Password	Enter a password for the PostgreSQL database superuser, then press Enter. Record the password because you will need it again in this installation.
Retype Password	Type the password again, then pressEnter.
Port [5432]	Press Enter to accept.
Please choose an option [1]	Press Enter to accept.
Install pl/pgsql in template1 database? [Y/n]	Type n, then press Enter.
Do you want to continue? [Y/n]	Press Enter to accept.

Setup has finished installing PostgreSQL on your computer.

Stack Builder may be used to download and install additional tools, drivers and applications to complement your PostgreSQL installation. [Y/n]

Type n, then press Enter.

PostgreSQL is now installed on your system and will start when you start up your system.

## Set Up the PostgreSQL Database

Complete these instructions to set up the PostgreSQL database.

1. Run the following commands to create the PostgreSQL database and database user OpenClinica uses to connect to the database:

```
/opt/PostgreSQL/8.4/bin/psql -U postgres -c "CREATE ROLE clinica LOGIN ENCRYPTED  
PASSWORD 'clinica' SUPERUSER NOINHERIT NOCREATEDB NOCREATEROLE"
```

```
/opt/PostgreSQL/8.4/bin/psql -U postgres -c "CREATE DATABASE openclinica WITH  
ENCODING='UTF8' OWNER=clinica"
```

2. The database user password is set to clinica by default, which is not a secure password. Change the password as follows:

1. Run:

```
/opt/PostgreSQL/8.4/bin/psql -U postgres
```

2. A psql prompt displays with this message:

```
ALTER USER clinica WITH PASSWORD 'XXXX';
```

3. Replace XXXX with a secure password. Record the password for use in a later installation step.

4. Exit the psql prompt by running:

```
q
```

## Deploying OpenClinica within Tomcat

1. The current directory on your system should be /usr/local/oc/install. If it is not, make it the current directory by running:

```
cd /usr/local/oc/install
```

2. Run the following commands. In the commands, *v.x* is your version of OpenClinica, e.g. 3.2:

```
unzip OpenClinica-v.x*
cd OpenClinica-v.x*/distribution
unzip OpenClinica.war -d OpenClinica
cp -rf OpenClinica* /usr/local/tomcat/webapps
```

OpenClinica is now deployed for use with the database.

## Deploying OpenClinica Web Services within Tomcat

Web Services are optional. Do not install them if you are not planning to use them.

1. The current directory on your system should be `/usr/local/oc/install`. If it is not, make it the current directory by running:

```
cd /usr/local/oc/install
```

2. Run the following commands. In the commands, *v.x* is your version of OpenClinica, e.g. 3.2:

```
unzip OpenClinica-ws-v.x*
cd OpenClinica-ws-v.x*/distribution
unzip OpenClinica-ws.war -d OpenClinica-ws
cp -rf OpenClinica* /usr/local/tomcat/webapps
```

OpenClinica web services are now deployed for use with the database.

## Set Tomcat to Start

You can set Tomcat to automatically start when you start your system, or you can start and stop Tomcat manually by issuing commands.

To set Tomcat to start automatically on system startup, run the following:

```
cp /usr/local/oc/install/OpenClinica-v.x*/install-docs/linux/tomcat /etc/init.d/
```

```
cd /etc/init.d
```

```
chmod a+x /etc/init.d/tomcat
```

`/sbin/chkconfig --add tomcat` (Note: This command is only for Red Hat Linux. For other operating systems, see the operating system instructions for adding an init script.)

To stop and start Tomcat manually by issuing commands, run the following:

```
/usr/local/tomcat/bin/shutdown.sh (stops Tomcat)
```

/usr/local/tomcat/bin/startup.sh (starts Tomcat)

## Configure OpenClinica for Optimum Performance

Under stress tests, OpenClinica 3.1.3 has performed well with the following JVM (Java Virtual Machine) settings:

Edit the init.d/tomcat and replace the JAVA\_OPTS with following:

```
export JAVA_OPTS="$JAVA_OPTS -Xmx1280m -XX:+UseParallelGC -XX:ParallelGCThreads=n -XX:MaxPermSize=180m -XX:+CMSClassUnloadingEnabled"
```

For the setting -XX:ParallelGCThreads=n, n should be replaced with the # of cores of your CPU as long as the total number of cores are lesser than 8.

The number of cores can be determined by using 'top' command.

Please note that the minimum RAM requirement is 1280 MB of memory for these settings, so the server is expected to have much higher RAM available. The amount of available memory can be determined by using the command `free -m` to give the memory (in MB). The MaxPermSize value depends on the number of war files that you are deploying. The web war needs a 180m of PermGen and the ws war needs a 90m of PermGen memory settings.

For the settings to take effect, restart the Tomcat server.

## Configure the OpenClinica Application

If you followed all the previous instructions exactly, there is only one property in the configuration file, [datainfo.properties](#), that you may need to change in order for OpenClinica to start. There are other properties in the configuration file you will probably want to modify for your system.

1. Open the configuration file: /usr/local/tomcat/webapps/OpenClinica/WEB-INF/classes/datainfo.properties
2. Edit values for the properties in the datainfo.properties file. You must change the value for dbPass to the password you selected in Set Up the PostgreSQL Database. Change the values for any other properties, then save the file.
3. Update the filePath parameter to the right value.
4. Run the following commands:

```
chown -R tomcat /usr/local/tomcat/*  
chown -R tomcat /usr/local/apache-*
```

5. You may also need to configure OpenClinica for internationalization should you wish to utilize OpenClinica in different languages. Also, if you need to use some UTF-8 characters in your application, you may need to modify your default connector configuration. For more information regarding configuring OpenClinica for internationalization and using UTF-8 characters, please refer to <https://docs.openclinica.com/3.1/technical-documents/openclinica-and-internationalization>

# Configure the OpenClinica Web Services

If you followed all the previous instructions exactly, there is only one property in the configuration file, [datainfo.properties](#), that you may need to change in order for OpenClinica Web Services to start. There are other properties in the configuration file you will probably want to modify for your system.

*Note: Most of the properties are not needed or used for Web Services, see [Description of datainfo.properties File for Web Services](#) for more information on what settings are actually used.*

1. Open the configuration file: /usr/local/tomcat/webapps/OpenClinica-ws/WEB-INF/classes/datainfo.properties
2. Edit values for the properties in the datainfo.properties file. You must change all values from Database Configuration section of datainfo.properties file to reflect your settings in datainfo.properties file for OpenClinica application. Change the values for any other properties.
3. Run the following commands:

```
chown -R tomcat /usr/local/tomcat/*  
chown -R tomcat /usr/local/apache-*
```

## Description of datainfo.properties File

The datainfo.properties file will look similar to the following. Each group of properties is numbered and a description of the property group is presented as a series of comment lines (lines that begin with # are comments) before the section where you specify the values for the properties in the group.

```
#####  
#####
```

```
# 1 - Database Configuration
```

```
#
```

```
# Database configuration is done with the following 6 properties
```

```
# The dbType options are either postgres or oracle.
```

```
# Enter the user name and password to access the database in
```

```
# dbUser and dbPass.
```

```
# The db field is for the name of the database and provide the port
```

```
# in dbPort.
```

```
# dbHost can be a URL, IP address or localhost
```

```
#

# REQUIRED

#####

dbType=postgres

dbUser=clinica

dbPass=clinica

db=${WEBAPP.lower}

dbPort=5432

dbHost=localhost

#####

# 2 - filePath

#

# File Path is the string which declares the

# repository for all uploaded and generated

# files in the system, including CRFs and

# data sets. The directory should NOT be

# accessible by the web server.

#

# REQUIRED.

#####

filePath=${catalina.home}/${WEBAPP.lower}.data/

#####

# 3 - Attached File Location

# Location for files if item data type is "file". If it has been kept empty,
```

```
# "filePath" will be used as the attached file location.
# This will be a sub folder within the filePath location only.
# You may configure a full path that points to a directory outside of the filePath.
# If you configure a full path, it must have a trailing slash.
# Example = /usr/local/attached_file/ or C:\attached_file\
#
# NOT REQUIRED
#####
#####

# attached_file_location=

#####
#####

# 4 - user_account_notification

#
# User Account Notification is the method by
# which new users are sent their passwords.
# Users can be sent passwords via email,
# or the password can be displayed on the screen
# to the administrator, who is instructed to
# write it down and physically give it to the user
# in question. The default is email.
#
# REQUIRED.
#####
#####

userAccountNotification=email

#####
#####
```

# 5 - adminEmail

#

# The Admin Email is the field to set the administrator's

# email for a given server. It is also used for

# replies to the email messages sent by the system.

#

# REQUIRED

#####  
#####

adminEmail=admin@example.com

#####  
#####

# 6- Spring Based Email System

#

# Configure the Email SMTP host below. If the host

# requires a username and password make sure

# mail.smtp(s).auth is set to true.

# Configure mail protocol via mail.protocol, Valid options

# would be smtp or smtps.

# Configure smtp over ttls by setting mail.smtp(s).starttls.enable

# to true.

# Configure connection timeout. Preconfigured to 5 secs

#####  
#####

mailHost=mail.smtp.com

mailPort=25

mailProtocol=smtp

mailUsername=

```
mailPassword=
mailSmtpAuth=false
mailSmtpStarttls.enable=false
mailSmtpsAuth=false
mailSmtpsStarttls.enable=false
mailSmtpConnectionTimeout=100
mailErrorMsg=developers@openclinica.org
```

```
#####
#####
```

```
# 8 - sysURL
```

```
#
```

```
# The web address for the system. It can either be an external
```

```
# address (demo.openclinica.org) or an internal IP
```

```
# address (192.168.2.000).
```

```
# NOTE: If you reconfigure the address or port in some later
```

```
# step, such as by configuring SSL, you will need to come back
```

```
# and update this file. You will also need to restart tomcat
```

```
# for changes to this take effect.
```

```
#
```

```
# REQUIRED
```

```
#####
#####
```

```
sysURL=http://localhost:8080/${WEBAPP}/MainMenu
```

```
#####
#####
```

```
# 9 - max_inactive_interval
```

```
#
```

```
# This is maximum time interval between client requests. That is,  
# if users leave any page open without sending a request to the  
# server, after this time interval, when users attempt sending  
# request they will be directed to login page.
```

```
#
```

```
# REQUIRED
```

```
#####  
#####
```

```
maxInactiveInterval=3600
```

```
#####  
#####
```

```
# 11 - Logging configuration
```

```
# SysLog support has been fully implemented in OpenClinica, but by default has been turned off.  
# Every piece of code that could send information to the syslog server has not been reviewed  
# and cleaned to ensure it is entirely readable and useful. This will be an ongoing effort  
# and resolved in a future release. Please use the SysLog support at your own risk.
```

```
#
```

```
# Specify the log location - local/syslog/both
```

```
#
```

```
log.dir=${catalina.home}/logs/openclinica
```

```
logLocation=local
```

```
#
```

```
# Specify logging level - trace/debug/info/warn/error
```

```
logLevel=info
```

```
syslog.host=localhost
```

```
syslog.port=514
```

```
#####  
#####
```

# 12- News/About

```
# On the OpenClinica login screen, there will be a box to the right of the login section  
# which can contain an RSS feed. You can configure what RSS feed is used in the rss.rl field.  
# If you do not want the RSS feed, please comment out rss.url and rss.more and uncomment  
# about.text1 and about.text2. These two fields can be used for any free form text that you  
# you want to appear on the OpenClinica login page.  
# the default feed is http://clinicalresearch.wordpress.com/feed/  
# default value for rss.more http://clinicalresearch.wordpress.com/
```

```
#####  
#####
```

```
# rssUrl=http://clinicalresearch.wordpress.com/feed/  
# rssMore=http://clinicalresearch.wordpress.com/  
# about.text1= Hello World 1  
# about.text2= Hello World 2
```

```
#####  
#####
```

# 13 - CRF File Upload Configuration

```
# crf.file.extensionSettings can have 3 values valid,invalid or left empty which defaults to valid.  
# if crf.file.extensionSetting= valid , then extensions specified can be uploaded.  
# if crf.file.extensionSetting= invalid , then extensions specified can NOT be uploaded.  
# if crf.file.extensions is left empty and crf.file.extensionSettings=valid then all extensions are valid  
# if crf.file.extensions is left empty and crf.file.extensionSettings=invalid then all extensions are  
NOT valid  
# separate extensions with a comma and do not include the leading dot.
```

```
#####  
#####
```

```
# crfFileExtensions=
```

# crfFileExtensionSettings=

#####  
#####

# 14 - supportURL

#

# The Support URL is included in the support button that appears

# in the top right corner of all pages in OPenClinica. By including

# the URL here we will be able to configure it depending on the adopter

#

# REQUIRED

#####  
#####

# supportURL=https://www.openclinica.com/OpenClinica/3.1/support/

#####  
#####

# 15- Quartz Scheduler Configuration

#

# Configure the mis-fire threshold for the scheduler,

# and the number of extract jobs can run at a single time.

#

# REQUIRED

#####  
#####

org.quartz.jobStore.misfireThreshold=18000000

org.quartz.threadPool.threadCount=1

org.quartz.threadPool.threadPriority=5

#####

#####

# 16 - CCTS configuration

#

# This is used for OpenClinica instances that have been modified and configured  
# to work with the Cancer Clinical Trials Suites. This is a caBIG suite of applications.  
# The configuration determines how long OpenClinica will hold a transaction from C3PR  
# and will wait for a roll back message before committing it to the database.

#

# NOT REQUIRED

#####  
#####

ccts.waitBeforeCommit=6000

#####  
#####

# 17 - Facility information

#

# The OpenClinica defaults will be used when creating a new study  
# unless you uncomment each property and provide a value next to  
# each = sign.

#

# NOT REQUIRED

#####  
#####

# FacName=

# FacCity=

# FacState=

# FacZIP=

# FacCountry=

```
# FacContactName=

# FacContactDegree=

# FacContactPhone=

# FacContactEmail=

#####
#####

# 18 - export data file path

#

# Export Data File Path is the string which (optionally)
# declares a specific file path for file extracts to be
# saved. This is a sub folder of filePath.
# Note that if it is set, files from Jobs only will be saved
# to two places: this directory and under the above file path
# declared in the 'filePath' property.

#

# NOT REQUIRED. Please comment out if you want Jobs to generate
# one file/files only, in the directory structure under 'filePath'.

#####
#####

# exportFilePath=scheduled_data_export

#####
#

# extract.number defines how many subjects the system will paginate through when creating the
ODM file to

# to be transformed by the XSLT engine. This number can be increased to use higher amounts of
memory and

# potentially decrease the amount of wait time. Lower this number if you have an extremely large
amount of

# event definitions to reduce the impact on concurrent users in the system at the time of the extract.
```

# This is a global setting that applies to all extracts in your OpenClinica instance.

#####  
#####

extract.number=99

#####  
#####

# 19 - Usage statistics configuration

# Usage statistics refers to information automatically sent back to OpenClinica.org

# to help us figure out how well OpenClinica is working and help us improve it in

# future versions.

# This includes technical information such as the version of OpenClinica installed, the number of studies created and user load. These statistics DO NOT include information such as study or CRF names, study data, or user information. We collect this data in aggregate and use it according to our Privacy Policy [<https://community.openclinica.com/privacy-policy>] to improve our products and services.

#

# As part of system configuration, we give you the option to help us improve OpenClinica by sending these usage statistics. If you elect to send this information but later change your mind, you can disable this feature in the datainfo.properties file by changing

# 'collectStats' value to 'false'

collectStats=true

usage.stats.host=usage.openclinica.com

usage.stats.port=514

OpenClinica.version=3.2

#####  
#####

# 20 - Rule Designer configuration

# OpenClinica Enterprise customers are allowed access to a GUI based Rule Designer.

# This configuration allows the OpenClinica instance to contact the Rule Designer for

# access. If you are not an OpenClinica Enterprise customer, your users will be re-directed

# to a landing page and will have to navigate back to their OpenClinica instance.

```
# If you do not want to see a link to the Rule Designer on the Build Study page,
# you must delete this configuration option.
#
# To become an OpenClinica Enterprise customer, please contact sales@openclinica.com
#####
#####

designerURL=http://localhost:8080/designer/

#####
#####

# 21 - LDAP/Active Directory configuration
#
# IMPORTANT: To use LDAP, the property of the configuration number '10 -
change_passwd_required' must be set to '0'
#
#####
#####

# If ldap is enabled (values:'true' or 'false')

ldap.enabled=false

# LDAP host in the form 'ldap://<host>:<port">'

ldap.host=

# User distinguished name used to authenticate to LDAP

#ldap.userDn=cn=ldap1,ou=ldap,dc=dc1,dc=dc2

ldap.userDn=cn=chin,ou=chin_ldap,dc=dc1,dc=dc2

# Password used to authenticate to LDAP

ldap.password=
```

# Query used to during login to find the LDAP user by username. Should always return a maximum of one result.

```
ldap.loginQuery=(sAMAccountName={0})
```

# URL to redirect LDAP users to retrieve a forgotten password

```
ldap.passwordRecoveryURL=http://www.google.com?&q=what+do+i+do+if+i+forgot+my+password%3F
```

# BaseDN to search for users

```
ldap.userSearch.baseDn=DC=dc1,dc=dc2
```

# Query used to search users in the user search screen (when creating a new user).

# The '{0}' placeholder is replaced by the value typed in the 'filter' field.

# Simple query, searches only username

```
#ldap.userSearch.query=(amp;memberOf=CN=ldapgroup,OU=ldap,DC=dc1,DC=dc2)(sAMAccountName=*{0}*)
```

#

# Sophisticated query, searches username, first name, last name and email

```
ldap.userSearch.query=(amp;memberOf=CN=ldapgroup,OU=ldap,DC=dc1,dc=dc2)(|(sAMAccountName=*{0}*))
```

# Field used to retrieve the user's distinguished name

```
ldap.userData.distinguishedName=distinguishedName
```

# Field used to retrieve the user's username

```
ldap.userData.username=sAMAccountName
```

# Field used to retrieve the user's first name

```
ldap.userData.firstName=givenName
```

```
# Field used to retrieve the user's last name
```

```
ldap.userData.lastName=sn
```

```
# Field used to retrieve the user's email
```

```
ldap.userData.email=mail
```

```
# Field used to retrieve the user's organization
```

```
ldap.userData.organization=company
```

## Description of datainfo.properties File for Web Services

Web Services datainfo.properties file is similar the datainfo.properties of OpenClinica. However, web services needs less configuration than OpenClinica. The following file show highlighted properties that are relevant to web services. Only properties from first section must be updated and should be set exactly as they are set for OpenClinica.

```
#####  
#####
```

### # 1 - Database Configuration

```
#
```

```
# Database configuration is done with the following 6 properties
```

```
# The dbType options are either postgres or oracle.
```

```
# Enter the user name and password to access the database in
```

```
# dbUser and dbPass.
```

```
# The db field is for the name of the database and provide the port
```

```
# in dbPort.
```

```
# dbHost can be a URL, IP address or localhost
```

```
#
```

**# REQUIRED**

#####  
#####

**dbType=postgres**

**dbUser=clinica**

**dbPass=clinica**

**db=openclinica**

**dbPort=5432**

**dbHost=localhost**

#####  
#####

**# 2 - filePath**

**#**

**# File Path is the string which declares the**

**# repository for all uploaded and generated**

**# files in the system, including CRFs and**

**# data sets. The directory should NOT be**

**# accessible by the web server.**

**#**

**# REQUIRED.**

#####  
#####

**filePath=\${catalina.home}/\${WEBAPP.lower}.data/**

#####  
#####

**# 3 - Attached File Location**

**# Location for files if item data type is "file". If it has been kept empty,**

**# "filePath" will be used as the attached file location.**

# This will be a sub folder within the filePath location only.

# You may configure a full path that points to a directory outside of the filePath.

# If you configure a full path, it must have a trailing slash.

# Example = /usr/local/attached\_file/ or C:\attached\_file\

#

# NOT REQUIRED

#####  
#####

# attached\_file\_location=

#####  
#####

# 4 - user\_account\_notification

#

# User Account Notification is the method by

# which new users are sent their passwords.

# Users can be sent passwords via email,

# or the password can be displayed on the screen

# to the administrator, who is instructed to

# write it down and physically give it to the user

# in question. The default is email.

#

# REQUIRED.

#####  
#####

userAccountNotification=email

#####  
#####

# 5 - adminEmail

```
#

# The Admin Email is the field to set the administrator's
# email for a given server. It is also used for
# replies to the email messages sent by the system.

#

# REQUIRED

#####

#####

adminEmail=admin@example.com

#####

#####

# 6- Spring Based Email System

#

# Configure the Email SMTP host below. If the host
# requires a username and password make sure
# mail.smtp(s).auth is set to true.

# Configure mail protocol via mail.protocol, Valid options
# would be smtp or smtps.

# Configure smtp over ttls by setting mail.smtp(s).starttls.enable
# to true.

# Configure connection timeout. Preconfigured to 5 secs

#####

#####

mailHost=mail.smtp.com

mailPort=25

mailProtocol=smtp

mailUsername=

mailPassword=
```

**mailSmtplibAuth=false**  
**mailSmtplibStarttls.enable=false**  
**mailSmtplibAuth=false**  
**mailSmtplibStarttls.enable=false**  
**mailSmtplibConnectionTimeout=100**  
**mailErrorMsg=developers@openclinica.org**

#####  
#####

# 8 - sysURL

#

# The web address for the system. It can either be an external

# address (demo.openclinica.org) or an internal IP

# address (192.168.2.000).

# NOTE: If you reconfigure the address or port in some later

# step, such as by configuring SSL, you will need to come back

# and update this file. You will also need to restart tomcat

# for changes to this take effect.

#

# REQUIRED

#####  
#####

sysURL=http://localhost:8080/\${WEBAPP}/MainMenu

#####  
#####

# 9 - max\_inactive\_interval

```
#
# This is maximum time interval between client requests. That is,
# if users leave any page open without sending a request to the
# server, after this time interval, when users attempt sending
# request they will be directed to login page.
#
# REQUIRED
#####
#####

maxInactiveInterval=3600

#####
#####

# 11 - Logging configuration

# SysLog support has been fully implemented in OpenClinica, but by default has been
turned off.

# Every piece of code that could send information to the syslog server has not been
reviewed

# and cleaned to ensure it is entirely readable and useful. This will be an ongoing effort
# and resolved in a future release. Please use the SysLog support at your own risk.

#

# Specify the log location - local/syslog/both

#

log.dir=${catalina.home}/logs/openclinica-ws

logLocation=local

#

# Specify logging level - trace/debug/info/warn/error

logLevel=info

syslog.host=localhost

syslog.port=514
```

#####  
#####

# 12- News/About

# On the OpenClinica login screen, there will be a box to the right of the login section  
# which can contain an RSS feed. You can configure what RSS feed is used in the rss.rl field.  
# If you do not want the RSS feed, please comment out rss.url and rss.more and uncomment  
# about.text1 and about.text2. These two fields can be used for any free form text that you  
# you want to appear on the OpenClinica login page.  
# the default feed is <http://clinicalresearch.wordpress.com/feed/>  
# default value for rss.more <http://clinicalresearch.wordpress.com/>

#####  
#####

# rssUrl=<http://clinicalresearch.wordpress.com/feed/>  
# rssMore=<http://clinicalresearch.wordpress.com/>  
# about.text1= Hello World 1  
# about.text2= Hello World 2

#####  
#####

# 13 - CRF File Upload Configuration

# crf.file.extensionSettings can have 3 values valid,invalid or left empty which defaults to valid.  
# if crf.file.extensionSetting= valid , then extensions specified can be uploaded.  
# if crf.file.extensionSetting= invalid , then extensions specified can NOT be uploaded.  
# if crf.file.extensions is left empty and crf.file.extensionSettings=valid then all extensions are valid  
# if crf.file.extensions is left empty and crf.file.extensionSettings=invalid then all extensions are NOT valid  
# separate extensions with a comma and do not include the leading dot.

#####  
#####

# crfFileExtensions=

# crfFileExtensionSettings=

#####  
#####

# 14 - supportURL

#

# The Support URL is included in the support button that appears

# in the top right corner of all pages in OPenClinica. By including

# the URL here we will be able to configure it depending on the adopter

#

# REQUIRED

#####  
#####

# supportURL=https://www.openclinica.com/OpenClinica/3.1/support/

#####  
#####

# 15- Quartz Scheduler Configuration

#

# Configure the mis-fire threshold for the scheduler,

# and the number of extract jobs can run at a single time.

#

# REQUIRED

#####  
#####

org.quartz.jobStore.misfireThreshold=18000000

# threadCount should be set to zero on web services modules

org.quartz.threadPool.threadCount=0

org.quartz.threadPool.threadPriority=5

```
#####  
#####
```

# 16 - CCTS configuration

#

# This is used for OpenClinica instances that have been modified and configured  
# to work with the Cancer Clinical Trials Suites. This is a caBIG suite of applications.  
# The configuration determines how long OpenClinica will hold a transaction from C3PR  
# and will wait for a roll back message before committing it to the database.

#

# NOT REQUIRED

```
#####  
#####
```

ccts.waitBeforeCommit=6000

```
#####  
#####
```

# 17 - Facility information

#

# The OpenClinica defaults will be used when creating a new study  
# unless you uncomment each property and provide a value next to  
# each = sign.

#

# NOT REQUIRED

```
#####  
#####
```

# FacName=

# FacCity=

# FacState=

# FacZIP=

# FacCountry=

# FacContactName=

# FacContactDegree=

# FacContactPhone=

# FacContactEmail=

#####  
#####

# 18 - export data file path

#

# Export Data File Path is the string which (optionally)

# declares a specific file path for file extracts to be

# saved. This is a sub folder of filePath.

# Note that if it is set, files from Jobs only will be saved

# to two places: this directory and under the above file path

# declared in the 'filePath' property.

#

# NOT REQUIRED. Please comment out if you want Jobs to generate

# one file/files only, in the directory structure under 'filePath'.

#####  
#####

# exportFilePath=scheduled\_data\_export

#####  
#####

# 19 - Usage statistics configuration

# Usage statistics refers to information automatically sent back to OpenClinica.org

# to help us figure out how well OpenClinica is working and help us improve it in

# future versions.

# This includes technical information such as the version of OpenClinica installed, the number of studies created and user load. These statistics DO NOT include information such as study or CRF

names, study data, or user information. We collect this data in aggregate and use it according to our Privacy Policy [<https://community.openclinica.com/privacy-policy>] to improve our products and services.

#

# As part of system configuration, we give you the option to help us improve OpenClinica by sending these usage statistics. If you elect to send this information but later change your mind, you can disable this feature in the datainfo.properties file by changing

# 'collectStats' value to 'false'

collectStats=true

usage.stats.host=usage.openclinica.com

usage.stats.port=514

OpenClinica.version=3.2

#####  
#####

# 20 - Rule Designer configuration

# OpenClinica Enterprise customers are allowed access to a GUI based Rule Designer.

# This configuration allows the OpenClinica instance to contact the Rule Designer for

# access. If you are not an OpenClinica Enterprise customer, your users will be re-directed

# to a landing page and will have to navigate back to their OpenClinica instance.

# If you do not want to see a link to the Rule Designer on the Build Study page,

# you must delete this configuration option.

#

# To become an OpenClinica Enterprise customer, please contact [sales@openclinica.com](mailto:sales@openclinica.com)

#####  
#####

designerURL=<https://designer.openclinica.com/>

#####

#####

**# 21 - LDAP/Active Directory configuration**

**#**

**# IMPORTANT: To use LDAP, the property of the configuration number '10 - change\_passwd\_required' must be set to '0'**

**#**

#####  
#####

**# If ldap is enabled (values:'true' or 'false')**

**ldap.enabled=false**

**# LDAP host in the form 'ldap://<host>:<port">'**

**ldap.host=**

**# User distinguished name used to authenticate to LDAP**

**#ldap.userDn=cn=ldap1,ou=ldap,dc=dc1,dc=dc2**

**ldap.userDn=cn=chin,ou=chin\_ldap,dc=dc1,dc=dc2**

**# Password used to authenticate to LDAP**

**ldap.password=**

**# Query used to during login to find the LDAP user by username. Should always return a maximum of one result.**

**ldap.loginQuery=(sAMAccountName={0})**

**# URL to redirect LDAP users to retrieve a forgotten password**

**ldap.passwordRecoveryURL=http://www.google.com?&q=what+do+i+do+if+i+forgot+my+password%3F**

**# BaseDN to search for users**

**ldap.userSearch.baseDn=DC=dc1,dc=dc2**

**# Query used to search users in the user search screen (when creating a new user).**

**# The '{0}' placeholder is replaced by the value typed in the 'filter' field.**

**# Simple query, searches only username**

**#ldap.userSearch.query=(amp(memberOf=CN=ldapgroup,OU=ldap,DC=dc1,DC=dc2)(sAMAccountName=\*{0}\*))**

**#**

**# Sophisticated query, searches username, first name, last name and email**

**ldap.userSearch.query=(amp(memberOf=CN=ldapgroup,OU=ldap,DC=dc1,dc=dc2)(|(sAMAccountName=\*{0}\*))**

**# Field used to retrieve the user's distinguished name**

**ldap.userData.distinguishedName=distinguishedName**

**# Field used to retrieve the user's username**

**ldap.userData.username=sAMAccountName**

**# Field used to retrieve the user's first name**

**ldap.userData.firstName=givenName**

**# Field used to retrieve the user's last name**

**ldap.userData.lastName=sn**

**# Field used to retrieve the user's email**

**ldap.userData.email=mail**

**# Field used to retrieve the user's organization**

**ldap.userData.organization=company**

## Verify Access to OpenClinica

At this point, Java, Tomcat, PostgreSQL, and OpenClinica are installed and set up. Restart the system by running:

reboot

After the system starts up, access OpenClinica at the following URL:

<http://localhost:8080/OpenClinica>

The Log In page should display.

To verify your set-up, try to access OpenClinica from another computer by running the same command from that computer, but replace localhost with the server's IP or hostname.

## Verify Access to OpenClinica Web Services

At this point, Java, Tomcat, PostgreSQL, and OpenClinica and OpenClinica Web Services are installed and set up. Restart the system by running:

reboot

After the system starts up, access OpenClinica Web Services at the following URL:

<http://localhost:8080/OpenClinica-ws>

The **Welcome** page should display.

To verify your set-up, try to access OpenClinica Web Services from another computer by running the same command from that computer, but replace localhost with the server's IP or hostname.

## Configure Tomcat to Use HTTPS

OpenClinica strongly recommends securing the Tomcat application server using a Secure Socket Layer protocol (SSL). SSL is a data transport encryption technology used to make secure https:// connections. SSL requires a third-party security certificate to be effective. Information about configuring SSL certificates for Tomcat is at this website: <http://tomcat.apache.org/tomcat-6.0-doc/ssl-howto.html>.

## Verify the Installation

Log in to OpenClinica with the username root and the password 12345678. OpenClinica requires you to change the password for the user "root" to a secure password. See [Update User Profile](#) if you need more information.

The user "root" is assigned to the Study "Default". Create a user account login for yourself, with the User Type set to "technical administrator" and the User Role set to Data Manager. For instructions to create the user account, see [Create a New User](#).

Functional approval by Rahul Sundaram. Signed on 2014-07-10 12:24PM

Approved for publication by Ben Baumann. Signed on 2014-07-10 12:29PM

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