

Steps for manually installing ESS Version 10

June 6th, 2017

Copyright 2006, 2017 R.James Holton, All rights reserved.

This process is used to install ESS from the `ess_nn_nn.zip` on a Web, application and database server.

To run ESS, you need to have a functioning application server such as Tomcat. You need to have a functioning database such as MySQL. In addition, you'll probably want to have a functioning Web server such as Apache. If you have a Web server, and this is the best, you will need a conduit between your Web server and your Application server such as `mod_jk` or use `proxy_ajp` to force Apache to act as a proxy for Tomcat. This allows you to address the Application server folders through your Web server URL or IP. Don't panic if you don't have these installed yet. See note 1 below.

Expenseservices.com uses, and has tested ESS on Linux and Window's stacks consisting of Apache2, Tomcat, MySQL and conduits (`mod_jk` and `proxy_ajp`).

Note 1: If you don't have a stack that will support ESS already on your server, the easiest way to install the components for review is to get a stack installer from BitNami.org. BitNami provides TomcatStack (<http://bitnami.org/stack/tomcatstack>) which has all the necessary components required by ESS. The installer is very straightforward and you can install Apache, Tomcat and MySQL by responding to a few prompts.

Note 2: We no longer distribute, through SourceForge.net, the SQL scripts and configuration files for Oracle. If you want these items, you should contact "service@expenseservices.com". We currently are distributing MySQL and MS SQL Server configuration files via SourceForge.net. The MySQL files are an inherent part of the release. The MS SQL Server files are available in the *resources/mssql* folder.

Note 3: We've also run ESS on IIS, JRun, ODBC. A goal in ESS coding was to make it non-environment specific.

Note 4: Currently ESS needs the "AddDefaultCharset ISO-8859-1" set in the Apache `httpd.conf` file.

If you don't understand the previous paragraphs, you should seek technical support. The manual installation of ESS is not "hard," but it does require a good degree of familiarity with your Web, application and database servers. The instructions below will require you to create a significant number of folders and links.

Follow these steps to install ESS once your servers have been setup:

1. Unzip the contents of the ESS.{ver}.zip file into your home or a work folder (aka., {home}). Move the folder ess into the /var folder. If you have a Windows machine you should create a /var folder.
2. You need to insure that the Tomcat server has access to all of the items in /var/ess. Particularly, this means write access to the create and write /var/ess/expense.log, /var/ess/xmlr, /var/ess/xmlu, /var/ess/eod and /var/ess/reports. With the Bitnami stack, use usermod to add tomcat to the bitnami group (usermod -a -G bitnami tomcat).
3. If you are using a database other than MySQL or ODBC, you'll need to copy your JDBC driver jar files to /var/ess/application/webapps/ess-app/WEB-INF/lib folder. You'll also need to copy several other configuration files to the xmls folder. For more information consult the Readme.txt in the *resources* folder for your database. You can skip this step if you are using MySQL which is the default.
4. Next, you need to create symbolic links from the server folders (apache, tomcat and mysql) to the appropriate application and data folders. Create these three links:
 - o From Apache's htdocs folder, make ess => /var/ess/application/htdocs/ess, if using BitNami, or if you are using proxy_ajp make this link in Tomcat's webapps folder. (Bitnami's Tomcatstack uses proxy_ajp)
 - o From Tomcat's webapps folder, make ess-app => /var/ess/application/webapps/ess-app
 - o Create /var/ess/application/webapps/ess-app/WEB-INF/web.xml => /var/ess/xmls/web.xml BitNami, or proxy_ajp make this link in Tomcat's webapps folder. You can use the upgrade.sh or upgrade.bat, located in the ess/application/scripts folder to do this.
 - o There are specific examples in the [installation notes](#), is at the end of this document, for creating symbolic links on each platform.
5. You next need to create the 'ess' database. If you are using MS SQL Server consult *ess/resources/mssql/readme.txt*. If using MySQL, here is the process
 - o Log into MySQL as ROOT (mysql -u root -p).
 - o Use the create command to create the 'ess' database ('create database ess;').
 - o Switch to the 'ess' database ('use ess;').
 - o Use the '.' command to execute the MASTER.SQL script ('\ MASTER.SQL'). MASTER.SQL is located in the database folder in the release directory. If you are logged in as "bitnami" on linux and have unzipped the ess zip file in your home folder, here is the string: \. /home/bitnami/database/MASTER.SQL
 - o You may have to prefix the MASTER.SQL script with the correct path (e.g., '~/ess/database/MASTER.SQL').
6. The '@@strings@@' in the configuration files represent specific addressing. We want to replace the '@@strings@@' with information that is valid for your installation. Edit the /var/ess/xmls/system.xml file to provide the correct information regarding your email system.
 - o exp_email_address (@@emailname@@) - The email account that will be used by ESS to send out workflow and informational messages. Example: expense@mycompany.com

- smtp_address (@@smtp@@) - This is the URL of the SMTP server that ESS will use to send out e-mail messages. Example: mail.mycompany.com
 - smtp_domain= (@@domain@@) - The general domain of your company. Example: mycompany.com
 - pal_email_address = (@@emailname@@) - The email account that will be used by ESS to send out workflow and informational messages. Example: expense@mycompany.com
 - dump_mail = (@@emailname@@) - This is the account where information will be delivered in the event of a system failure.
7. Edit, in the messages sections, the server_url element in the system.xml for '@@expensereport@@'. This should be set to the protocol and base URL of the server that is running ESS (example: https://www.expenseservices.com). This should be coordinated with the messages in the ess.properties class files that reference '@@expensereport@@'.
 8. If you are supporting the acceptance of receipt scans by phone or email you need to set up a separate POP3 mailbox to act as a gateway in collecting the scans. Do not use the address that you send ESS mail from as this will cause confusion in handling incoming messages. To edit the gateway and POP3 elements for the gateway, in the configuration section of system.xml edit:
 - Gateway_interval – Interval in minutes that ESS will look for messages in the POP3 mail box.
 - Gateway_stop_time – Recommend setting to 'No'.
 - Pop3_logon – The login ID to the POP3 mail box that serves as the gateway.
 - Pop3_password – POP3 password
 - Pop3_delete_messages – Normally set to 'Yes'. 'No' is used for debugging.
 - Pop3_address – Address of the POP3 server.
 - Pop3_port – Either 110 or 995 for encryption.
 9. There are a few other elements in the system.xml configuration section that may be important in your setup:
 - Smtplib_authentication – Either 'none' or 'plain' depending on whether your smtp server requires authentication.
 - Smtplib_port - This used to always be 25, but mainly servers/networks will use a different port. If port 465 is used the link will be encrypted.
 10. Edit /var/ess/xmls/web.xml for the root user. This file may have a link to it from /var/ess/application/webapps/ess-app/WEB-INF/web.xml.
 - @@dbuser@@ - login user for access to the database. Example: root
 - @@dbpassword@@ password used to access database. Example: password
 - It may be necessary to modify the port number used to access MySQL in the DBDatabase context-param. The current string being used is:
jdbc:mysql://localhost:3306/ess?zeroDateTimeBehavior=convertToNull
 - The number 3306 is the port number and should correspond to the port used when MySQL was set up. The MySQL port default is 3306.
 - If you are supporting the acceptance of receipt scans by phone or email, you may want to activate the ReceiptConduitLaunch listener class. This will run a background task when Tomcat is started that is responsible for polling the email box associated with downloading the receipt scan files. Remove the "comment-"

characters from the beginning and ending name tags for listener that contains the *ess.ReceiptConduitLaunch* class to activate this feature. Consult the *webFullVersion.xml* file in the WEB-INF folder as to what an active *ess.ReceiptConduitLaunch* class element should look like.

11. You may need to open up the sharing on the `/var/ess/application/webapps/ess-app/WEB-INF/classes` folder on Windows machines.
12. The *web.xml* file also controls LDAP support. You should get the ESS application up and running independent of LDAP and then switch to LDAP. Consult the LDAP Integration document for setting LDAP up (*LDAPInstructions.txt*).
13. Restart the Tomcat server. (Under BitNami, use the `sudo /opt/bitnami/ctlscript.sh restart` function to do this)
14. Test the reporter/approver login with one of the following URL:
 - o `http://{your server address}/ess/en/XLogin.html`
login = `reporter@expenseservices.com`, password = password
(reporter in English)

[Note: Reporter's reports are send to Approver for approval]

15. Test the audit login with the following URL:
 - o `http://{your server address}/ess/ess/Audit.html`
Login = `admin@expenseservices.com`, password = password
(auditor in English)
(You can also access the audit and admin menu from the 'Admin' link on the reporter login)
16. Consult the ESS documentation page for more information:
 - o `http://www.expenseservices.com/supportDocumentation.html`

=====

=====

ESS Installation Addendum

The following are examples of how to use hard and symbolic links to set up ESS. Since every installation may be a little different, please use these as examples only.

1. Example: Creating symbolic links from apache, tomcat and mysql folders.

On a BitNami Windows Apache Tomcat Stack, run as the Administrator in the command prompt:

In the `/BitNami/tomcatstack-7.0.50-0/apache-tomcat/webapps` folder:

```
mklink /D ess \var\ess\application\htdocs\ess
```

In the /BitNami/tomcatstack-7.0.50-0/apache-tomcat/webapps folder:

```
mklink /D ess-app \var\ess\application\webapps\ess-app
```

In the /var/ess/application/webapps/ess-app/WEB-INF folder:

```
mklink web.xml \var\ess\xmls\web.xml
```

On Ubuntu Linux with mod_jk

In the /var/www folder: ln -s /var/ess/application/htdocs/ess ess

In the /var/lib/tomcat6/webapps folder: ln -s /var/ess/application/webapps/ess-app ess-app

In the /var/ess/application/webapps/ess-app/WEB-INF folder: ln /var/ess/xmls/web.xml web.xml

On Amazon Micro Linux with proxy_ajp (BitNami TomcatStack [see Notes 6,7])

In the /opt/bitnami/apache-tomcat/webapps folder:

```
sudo ln -s /var/ess/application/htdocs/ess ess
```

In the /opt/bitnami/apache-tomcat/webapps folder:

```
sudo ln -s /var/ess/application/webapps/ess-app ess-app
```

In the /var/ess/application/webapps/ess-app/WEB-INF folder: ln /var/ess/xmls/web.xml web.xml

On my Mac Mini [see Note 5]

In the /Library/WebServer/documents folder: ln -s /var/ess/application/htdocs/ess ess

In the /usr/local/apache-tomcat-n.n.nn folder: ln -s /var/ess/application/webapps/ess-app ess-app

In the /var/ess/application/webapps/ess-app/WEB-INF folder: ln /var/ess/xmls/web.xml web.xml

On my Mac with BitNami [see Notes 6,7]

In the /Applications/tomcatstack*/apache-tomcat/webapps folder: ln -s /var/ess/application/htdocs/ess ess

In the /Applications/tomcatstack*/apache-tomcat/webapps folder: ln -s /var/ess/application/webapps/ess-app ess-app

In the /var/ess/application/webapps/ess-app/WEB-INF folder: ln /var/ess/xmls/web.xml web.xml

On a Linux with BitNami [see Notes 6,7]

In the /opt/tomcatstack*/apache-tomcat/webapps folder: ln -s /var/ess/application/htdocs/ess ess

In the /opt/tomcatstack*/apache-tomcat/webapps folder:
ln -s /var/ess/application/webapps/ess-app ess-app

In the /var/ess/application/webapps/ess-app/WEB-INF folder: ln /var/ess/xmls/web.xml web.xml

You may need to be logged on as root or use sudo for these operations

Other notes:

1. If you change the controller and auditor's email address you will need to adjust the security.xml file which is located in the /var/ess/xmls folder.

2. Add the AddDefaultCharset ISO-8859-1 to either the httpd.conf or the httpd-languages.conf [see if there is a better solution]

3. Note to adding expense types and locations they will need a translation in the `ess.properties` files.

4. You can determine whether you are using `mod_jk` or `proxy_ajp` by looking in the Apache `httpd.conf` file.

5. If you installed with BitNami, the default BitNami folder is in the Applications folder on the Mac. The "On my Mac" example had the components installed separately.

6. In my test installation with BitNami on the Mac, I needed to go into the `setenv.sh` file in the `tomcat/bin` folder and change the Java version to 1.6.0.

7. These instructions are for installations that use the BitNami TomcatStack. BitNami has other stacks that contain Tomcat. You may need to modify the `httpd.conf` file to get the proxy to work correctly.

=====