**Lab Documents:**

* [https://github.com/paulnguyen/cmpe281/blob/master/aws/4-aws-tomcat-and-mysql.md (Links to an external site.)](https://github.com/paulnguyen/cmpe281/blob/master/aws/4-aws-tomcat-and-mysql.md)
* [https://readlearncode.com/cloud/amazon-free-usage-tier-installing-tomcat-7-on-an-ec2-linux-instance/ (Links to an external site.)](https://readlearncode.com/cloud/amazon-free-usage-tier-installing-tomcat-7-on-an-ec2-linux-instance/)
* [http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/install-LAMP.html (Links to an external site.)](http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/install-LAMP.html)

**Introduction:**

In this Lab, you will be deploying a Java Stack on the Cloud using the Grails Framework and Sample App.

**Key Steps:**

1. Install Java JDK 1.8 on a Free-Tier Amazon Linux AMI Instance
2. Install Tomcat 7 on AWS EC2 Instance
3. Install MySQL on same Grails Instance
4. Update Grails App DB Config and Deploy WAR App to Tomcat

**Part I.  Install Java 8 JDK and Tomcat 7**

Step 1: Launch EC2 Free-Tier Instance

Type: t2.micro

VPC: cmpe281

Subnet: Public

Auto Assigned Public IP: Enabled

Create new SG: tomcat-grails

Open Ports: 22, 80, 8080

Key Pair: cmpe281-us-west-1

Step 2: SSH into EC2 Instance via Public IP

Step 3: Install Java 8

sudo yum install java-1.8.0-openjdk-devel

\*\* Select Java 8 Option for: \*\*

sudo /usr/sbin/alternatives --config java

sudo /usr/sbin/alternatives --config javac

NOTE:

JAVA\_HOME = /usr/lib/jvm/java-1.8.0-openjdk.x86\_64

Step 4: Install Tomcat 7

wget http://mirror.symnds.com/software/Apache/tomcat/tomcat-7/v7.0.75/bin/apache-tomcat-7.0.75.tar.gz

tar zxpvf apache-tomcat-7.0.75.tar.gz

sudo mv apache-tomcat-7.0.75 /usr/share

To configure Tomcat to launch automatically create

a file called tomcat in the directory

/etc/rc.d/init.d/ with the following contents:

!/bin/sh

# Tomcat init script for Linux.

#

# chkconfig: 2345 96 14

# description: The Apache Tomcat servlet/JSP container.

JAVA\_HOME=/usr/lib/jvm/java-1.8.0-openjdk.x86\_64

CATALINA\_HOME=/usr/share/apache-tomcat-7.0.75

export JAVA\_HOME CATALINA\_HOME

exec $CATALINA\_HOME/bin/catalina.sh $\*

Set Init Scrip Permissions

sudo chmod 755 /etc/rc.d/init.d/tomcat

sudo chkconfig --level 2345 tomcat on

Manual Run of Tomcat

/etc/rc.d/init.d/tomcat start

/etc/rc.d/init.d/tomcat stop

Step 5: Config Tomcat Users

File: /usr/share/apache-tomcat-7.0.75/conf/tomcat-users.xml

Password: <Chose your Password>

<tomcat-users>

<role rolename="manager-script"/>

<role rolename="manager-jmx"/>

<role rolename="manager-status"/>

<role rolename="admin-gui"/>

<role rolename="manager-gui"/>

<user username="tomcat" password="\*\*\*\*\*\*\*\*\*\*"

roles="manager-gui,manager-status,admin-gui"/>

<user username="tomcattools" password="\*\*\*\*\*\*\*\*\*\*"/>

</tomcat-users>

Go to EC2 Public IP on port 8080

Go to "Manager App" to Deploy your WAR File.

**Part II.  Install MySQL, Create CMPE281 Database and Deploy Hello Grails Application**

Step 6: Install MySQL on Same Tomcat EC2 Instance

REF: http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/install-LAMP.html

NOTE: Only Install MySQL from Instructions Above.

sudo yum install -y mysql56-server

sudo service mysqld start

sudo service mysqld stop

sudo chkconfig mysqld on

sudo mysql\_secure\_installation

Default root password = none (hit enter)

Set root passwrd = \*\*\*\*\* (choose your own)

Remove Anonymous Users = Y

Disallow root Remote Logins = Y

Remove Test Databases = Y

Step 7: MySQL Command Line

REF: https://dev.mysql.com/doc/refman/5.6/en/mysql.html

mysql --user=user\_name --password=your\_password db\_name

mysql --user=root --password

password: \*\*\*\*\* (enter your password)

mysql> create database cmpe281 ;

mysql> use cmpe281;

mysql> show tables ;

**Part II (Cont.) -- Update Hello Grails Project and Generate/Deploy WAR File**

Install SDK MAN

Follow Instructions Here: http://sdkman.io/

[(Links to an external site.)](https://github.com/paulnguyen/cmpe281/blob/master/aws/5-aws-hellograils-deploy.md#install-groovy--grails-locally)Install Groovy & Grails Locally

Note: assuming you already have Java JDK 7 or 8 Installed

sdk ls groovy

sdk ls grails

sdk install groovy 2.4.7

sdk install grails 3.2.5

sdk current

grails --version

| Grails Version: 3.2.5

| Groovy Version: 2.4.7

| JVM Version: 1.8.0\_112

[(Links to an external site.)](https://github.com/paulnguyen/cmpe281/blob/master/aws/5-aws-hellograils-deploy.md#config-grails-database-connection-for-production)Config Grails Database Connection for Production

Update your grails-app/conf/application.yml File

to Connector to your AWS MySQL DB.

[(Links to an external site.)](https://github.com/paulnguyen/cmpe281/blob/master/aws/5-aws-hellograils-deploy.md#generate-and-deploy-application-war-file)Generate and Deploy Application WAR file

In your Grails Project Root Folder, Run Command:

grails war

Deploy Generated WAR file in:

build/libs (folder)

Note: To Deploy, SCP War file to EC2 Instance and Copy into Tomcat's "webapps" folder.

This should be in the folder:

/usr/share/apache-tomcat-7.0.75/webapps