AppDynamics Practice Lab

Epic Academy

- Building an AppDynamics Lab Practice Environment

AppDynamics Lab – Options

Building AppDynamics Lab environment –Virtual Machine

Option2 : This option is a little harder but for people who wants to build from scratch. Here you build the applications yourself, build the load generation engine etc. This option really exposes you to how application works.

Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy

AppDynamics Lab Options 2

1. Lab Installation Requirement

- Centos 7 Operating, 4GB Ram , 20GB HDD, 2 CPU Core
- Putty, WinSCP
- Knowing how to use Linux editing tool like vi
- Sample GitHub .war file

Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy

AppDynamics Lab

1. Cars Sample App

- In this setup, we will be setting a simple application – Cars Sample Application for the lab purposes.

Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy

AppDynamics Lab

Step 1: Install MySQL on the centos 7 Operating system

```
Lab01#wget https://dev.mysql.com/get/mysql57-community-release-el7-9.noarch.rpm
lab01#sudo rpm -ivh mysql57-community-release-el7-9.noarch.rpm
```

```
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# wget https://dev.mysql.com/get/mysql57-community-release-el7-9.noarch.rpm
--2020-07-13 04:49:48--  https://dev.mysql.com/get/mysql57-community-release-el7-9.noarch.rpm
Resolving dev.mysql.com (dev.mysql.com)... 137.254.60.11
Connecting to dev.mysql.com (dev.mysql.com)|137.254.60.11|:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://repo.mysql.com//mysql57-community-release-el7-9.noarch.rpm [following]
--2020-07-13 04:49:50--  https://repo.mysql.com//mysql57-community-release-el7-9.noarch.rpm
Resolving repo.mysql.com (repo.mysql.com)... 96.16.109.48
Connecting to repo.mysql.com (repo.mysql.com)|96.16.109.48|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 9224 (9.0K) [application/x-redhat-package-manager]
Saving to: 'mysql57-community-release-el7-9.noarch.rpm'

100%[==========================================================================================================================================>] 9,224

2020-07-13 04:49:51 (12.0 MB/s) - 'mysql57-community-release-el7-9.noarch.rpm' saved [9224/9224]

[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# sudo rpm -ivh mysql57-community-release-el7-9.noarch.rpm
warning: mysql57-community-release-el7-9.noarch.rpm: Header V3 DSA/SHA1 Signature, key ID 5072e1f5: NOKEY
Preparing...                          ################################# [100%]
Updating / installing...
   1:mysql57-community-release-el7-9  ################################# [100%]
[root@localhost ~]#
[root@localhost ~]#
```

Epic Academy Epic Academy Epic Academy

AppDynamics Lab

Install MySQL on the centos 7 Operating system

```
Lab01# sudo yum install mysql-server
```

```
[root@localhost ~]# sudo yum install mysql-server
Loaded plugins: fastestmirror, langpacks
mysql-connectors-community
mysql-tools-community
mysql57-community
(1/3): mysql-connectors-community/x86_64/primary_db
```

```
Dependencies Resolved

================================================================================
 Package                                Arch                   Version
================================================================================
Installing:
 mysql-community-libs                   x86_64                 5.7.31-1.el7
     replacing  mariadb-libs.x86_64 1:5.5.65-1.el7
 mysql-community-libs-compat            x86_64                 5.7.31-1.el7
     replacing  mariadb-libs.x86_64 1:5.5.65-1.el7
 mysql-community-server                 x86_64                 5.7.31-1.el7
Installing for dependencies:
 mysql-community-client                 x86_64                 5.7.31-1.el7
 mysql-community-common                 x86_64                 5.7.31-1.el7
Updating for dependencies:
 openssl                                x86_64                 1:1.0.2k-19.el7
 openssl-libs                           x86_64                 1:1.0.2k-19.el7
 postfix                                x86_64                 2:2.10.1-9.el7

Transaction Summary
================================================================================
Install  3 Packages (+2 Dependent packages)
Upgrade             ( 3 Dependent packages)

Total download size: 206 M
```

Epic Academy Epic Academy Epic Academy Epic Academy

AppDynamics Lab

Install MySQL on the centos 7 Operating system

```
Transaction Summary
================================================================================
Install  3 Packages (+2 Dependent packages)
Upgrade             ( 3 Dependent packages)

Total download size: 206 M
Is this ok [y/d/N]: y
Downloading packages:
Delta RPMs disabled because /usr/bin/applydeltarpm not installed.
warning: /var/cache/yum/x86_64/7/mysql57-community/packages/mysql-community-common-5.7.31-1.el7.x86_64.rpm: Header V3 DSA/SHA1 Signature, key I
Public key for mysql-community-common-5.7.31-1.el7.x86_64.rpm is not installed
(1/8): mysql-community-common-5.7.31-1.el7.x86_64.rpm
(2/8): mysql-community-libs-5.7.31-1.el7.x86_64.rpm
(3/8): mysql-community-libs-compat-5.7.31-1.el7.x86_64.rpm
(4/8): openssl-1.0.2k-19.el7.x86_64.rpm
(5/8): mysql-community-client-5.7.31-1.el7.x86_64.rpm
(6/8): openssl-libs-1.0.2k-19.el7.x86_64.rpm
(7/8): postfix-2.10.1-9.el7.x86_64.rpm
(8/8): mysql-community-server-5.7.31-1.el7.x86_64.rpm
--------------------------------------------------------------------------------
Total
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-mysql
Importing GPG key 0x5072E1F5:
 Userid     : "MySQL Release Engineering <mysql-build@oss.oracle.com>"
 Fingerprint: a4a9 4068 76fc bd3c 4567 70c8 8c71 8d3b 5072 e1f5
 Package    : mysql57-community-release-el7-9.noarch (installed)
 From       : /etc/pki/rpm-gpg/RPM-GPG-KEY-mysql
Is this ok [y/N]: y
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
Warning: RPMDB altered outside of yum.
  Updating   : 1:openssl-libs-1.0.2k-19.el7.x86_64
  Installing : mysql-community-common-5.7.31-1.el7.x86_64
  Installing : mysql-community-libs-5.7.31-1.el7.x86_64
  Installing : mysql-community-libs-compat-5.7.31-1.el7.x86_64
  Installing : mysql-community-client-5.7.31-1.el7.x86_64 [##################################################################################
```

Epic Academy Epic Academy

Install MySQL –Step 2

Starting MySQL and check MySQL status

```
sudo systemctl start mysqld
sudo systemctl status mysqld
```

```
[root@localhost ~]# sudo systemctl start mysqld
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# sudo systemctl status mysqld
mysqld.service - MySQL Server
   Loaded: loaded (/usr/lib/systemd/system/mysqld.service; enabled)
   Active: active (running) since Mon 2020-07-13 05:21:16 WAT; 59s ago
     Docs: man:mysqld(8)
           http://dev.mysql.com/doc/refman/en/using-systemd.html
  Process: 3129 ExecStart=/usr/sbin/mysqld --daemonize --pid-file=/var/run/mysqld/mysqld.pid $MYSQLD_OPTS (code=exited, status=0/SUCCESS)
  Process: 3079 ExecStartPre=/usr/bin/mysqld_pre_systemd (code=exited, status=0/SUCCESS)
 Main PID: 3132 (mysqld)
   CGroup: /system.slice/mysqld.service
           └─3132 /usr/sbin/mysqld --daemonize --pid-file=/var/run/mysqld/mysqld.pid

Jul 13 05:21:13 localhost.localdomain systemd[1]: Starting MySQL Server...
Jul 13 05:21:16 localhost.localdomain systemd[1]: Started MySQL Server.
[root@localhost ~]#
```

my Epic Academy Epic Academy Epic Academy Epic Academy

Collect the temporary password that will be used for SQL setup

```
sudo grep 'temporary password' /var/log/mysqld.log
** change the password and accept default all through for lab purposes
```

```
[root@localhost ~]#
[root@localhost ~]# sudo grep 'temporary password' /var/log/mysqld.log
2020-07-13T04:21:13.968112Z 1 [Note] A temporary password is generated for root@localhost: HoLvMq=r7UM9
[root@localhost ~]#
```

```
[root@localhost ~]# sudo mysql_secure_installation

Securing the MySQL server deployment.

Enter password for user root:

The existing password for the user account root has expired. Please set a new password.

New password:

Re-enter new password:
 ... Failed! Error: Your password does not satisfy the current policy requirements

New password:

Re-enter new password:
The 'validate_password' plugin is installed on the server.
The subsequent steps will run with the existing configuration
of the plugin.
Using existing password for root.

Estimated strength of the password: 100
Change the password for root ? ((Press y|Y for Yes, any other key for No) : no

 ... skipping.
By default, a MySQL installation has an anonymous user,
allowing anyone to log into MySQL without having to have
a user account created for them. This is intended only for
testing, and to make the installation go a bit smoother.
You should remove them before moving into a production
environment.

Remove anonymous users? (Press y|Y for Yes, any other key for No) :
```

Configuring MySQL

Run #sudo mysql_secure_installation
Login with the test password, you copied and accept the default.
It will prompt you to Change the password

```
[root@localhost ~]# sudo mysql_secure_installation

Securing the MySQL server deployment.

Enter password for user root:

The existing password for the user account root has expired. Please set a new password.

New password:

Re-enter new password:
 ... Failed! Error: Your password does not satisfy the current policy requirements

New password:

Re-enter new password:
The 'validate_password' plugin is installed on the server.
The subsequent steps will run with the existing configuration
of the plugin.
Using existing password for root.

Estimated strength of the password: 100
Change the password for root ? ((Press y|Y for Yes, any other key for No) : no

 ... skipping.
By default, a MySQL installation has an anonymous user,
allowing anyone to log into MySQL without having to have
a user account created for them. This is intended only for
testing, and to make the installation go a bit smoother.
You should remove them before moving into a production
environment.

Remove anonymous users? (Press y|Y for Yes, any other key for No) :
```

Epic Academy Epic Academy

Login to test the database. Use the command below to login to the database

root#mysql –u –root -p

```
[root@localhost ~]#
[root@localhost ~]# mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 17
Server version: 5.7.31 MySQL Community Server (GPL)

Copyright (c) 2000, 2020, Oracle and/or its affiliates. All rights reserved.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

Epic Academy Epic Academy Epic Academy

Ensure MySQL root password is AppDynamics

You can change MySQL root password following steps below

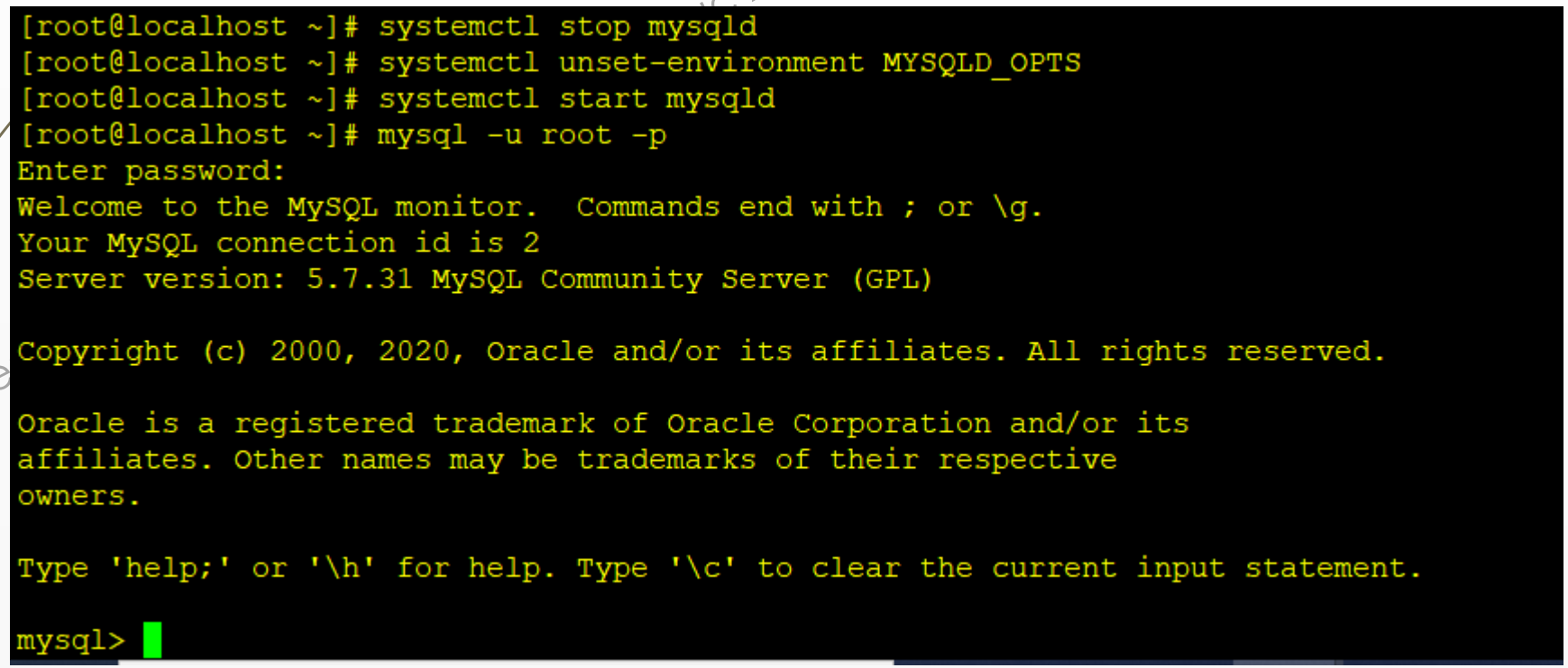
Mysql>UPDATE mysql.user SET authentication_string = PASSWORD('AppDynamics') WHERE User = 'root' AND Host = 'localhost';

```
[root@localhost ~]# systemctl stop mysqld
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# systemctl set-environment MYSQLD_OPTS="--skip-grant-tables"
[root@localhost ~]#
[root@localhost ~]# systemctl start mysqld
[root@localhost ~]#
[root@localhost ~]# mysql -u root
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.31 MySQL Community Server (GPL)

Copyright (c) 2000, 2020, Oracle and/or its affiliates. All rights reserved.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
mysql> UPDATE mysql.user SET authentication_string = PASSWORD('AppDynamics') WHERE User = 'root' AND Host = 'localhost';
Query OK, 1 row affected, 1 warning (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 1

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.00 sec)

mysql> exit
```

Epic Academy Epic Academy

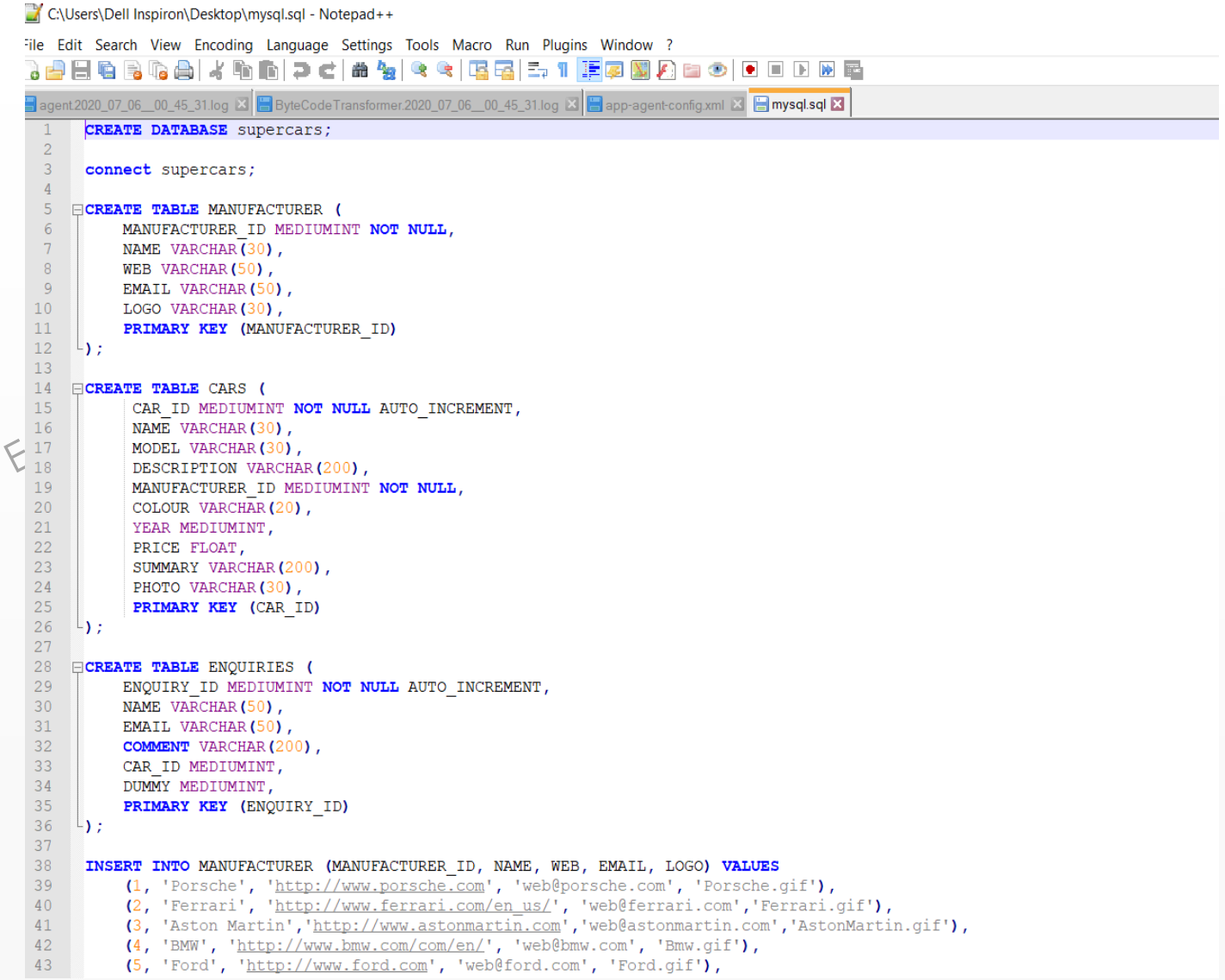
Start the database normally with the following command

```
[root@localhost ~]# systemctl stop mysqld
[root@localhost ~]# systemctl unset-environment MYSQLD_OPTS
[root@localhost ~]# systemctl start mysqld
[root@localhost ~]# mysql -u root –p   # login with the new root password
```



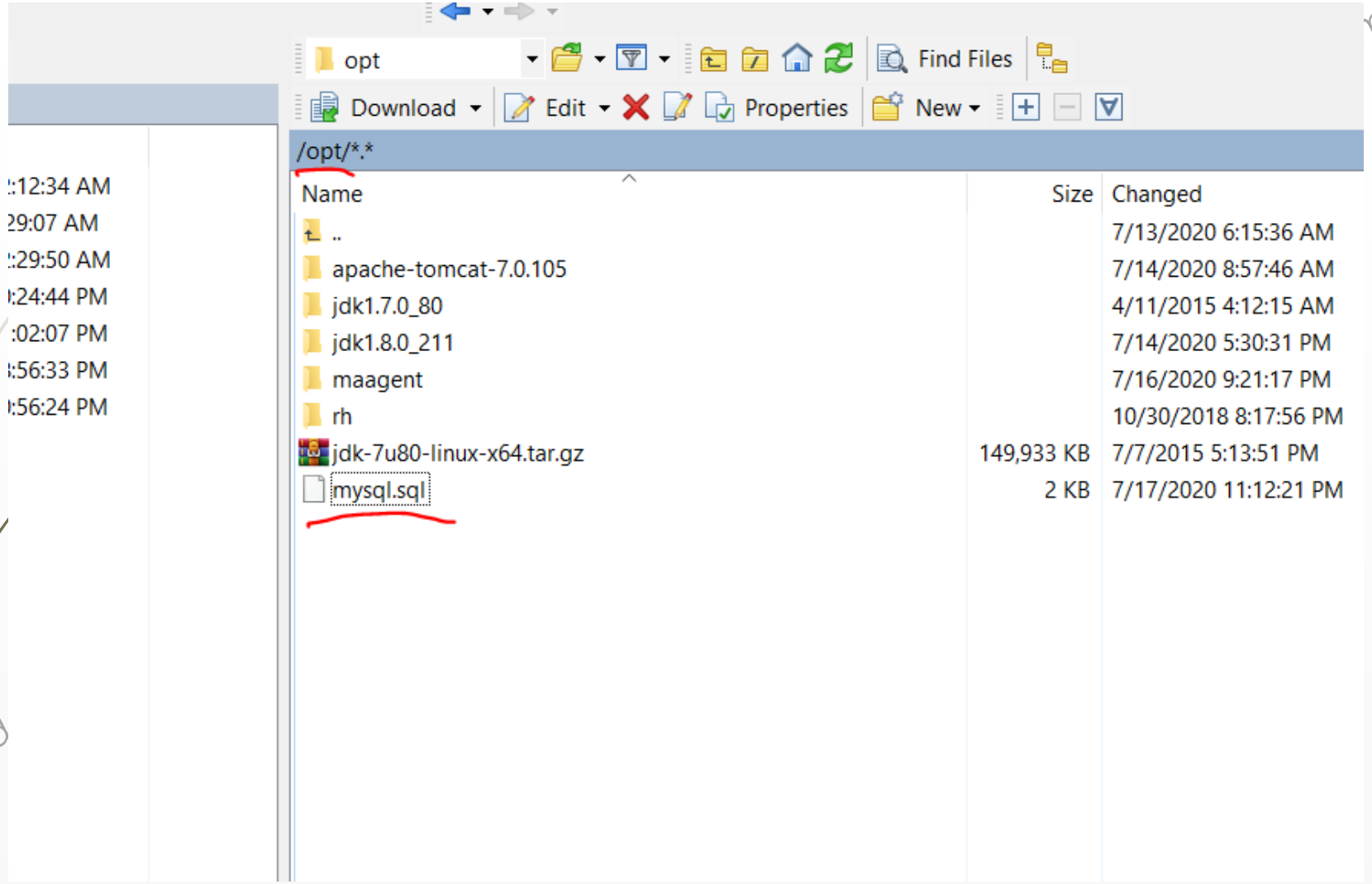
Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy

Step 2: Importing the sql database tables and configuration



Epic Academy Epic Academy Epic Academy E

Copy the mysql.sql database dump file to your server via WinSCP and Login to MySQL and import
I copied mysql.sql file to **/opt**



Epic Academy
Epic Acad

Run the following command
Note I am **under /opt** where I have **mysql.sql dump** file. If your directory is different specify same

[root@localhost opt]# mysql -u root -p < mysql.sql

```
[root@localhost opt]#
[root@localhost opt]# mysql -u root -p < mysql.sql
Enter password:
[root@localhost opt]#
[root@localhost opt]#
```

This will create the database called "supercars' and the tables within the database. Verify this to be sure
Login to the database using the command below and run this "show databases;" "USE supercars;"
[root@localhost opt]# mysql -u root –p
mysql> show databases;

```
[root@localhost opt]#
[root@localhost opt]# mysql -u root -p
Enter password:
```

```
mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| supercars          |
| sys                |
+--------------------+
5 rows in set (0.00 sec)
```

Epic Academy Epic Academy Epic Academy

Switch to the supercars database by using the following mysql command

mysql> use supercars;

```
mysql> use supercars;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
```

Show the mysql tables to be sure the tables were created, and use describe command to verify the content of the table.

mysql> show tables;

mysql> describe CARS;

```
mysql> show tables;
+---------------------+
| Tables_in_supercars |
+---------------------+
| CARS                |
| ENQUIRIES           |
| MANUFACTURER        |
+---------------------+
3 rows in set (0.00 sec)
```

```
mysql> describe CARS;
+-----------------+-------------+------+-----+---------+----------------+
| Field           | Type        | Null | Key | Default | Extra          |
+-----------------+-------------+------+-----+---------+----------------+
| CAR_ID          | mediumint(9)| NO   | PRI | NULL    | auto_increment |
| NAME            | varchar(30) | YES  |     | NULL    |                |
| MODEL           | varchar(30) | YES  |     | NULL    |                |
| DESCRIPTION     | varchar(200)| YES  |     | NULL    |                |
| MANUFACTURER_ID | mediumint(9)| NO   |     | NULL    |                |
| COLOUR          | varchar(20) | YES  |     | NULL    |                |
| YEAR            | mediumint(9)| YES  |     | NULL    |                |
| PRICE           | float       | YES  |     | NULL    |                |
| SUMMARY         | varchar(200)| YES  |     | NULL    |                |
| PHOTO           | varchar(30) | YES  |     | NULL    |                |
+-----------------+-------------+------+-----+---------+----------------+
10 rows in set (0.00 sec)
```

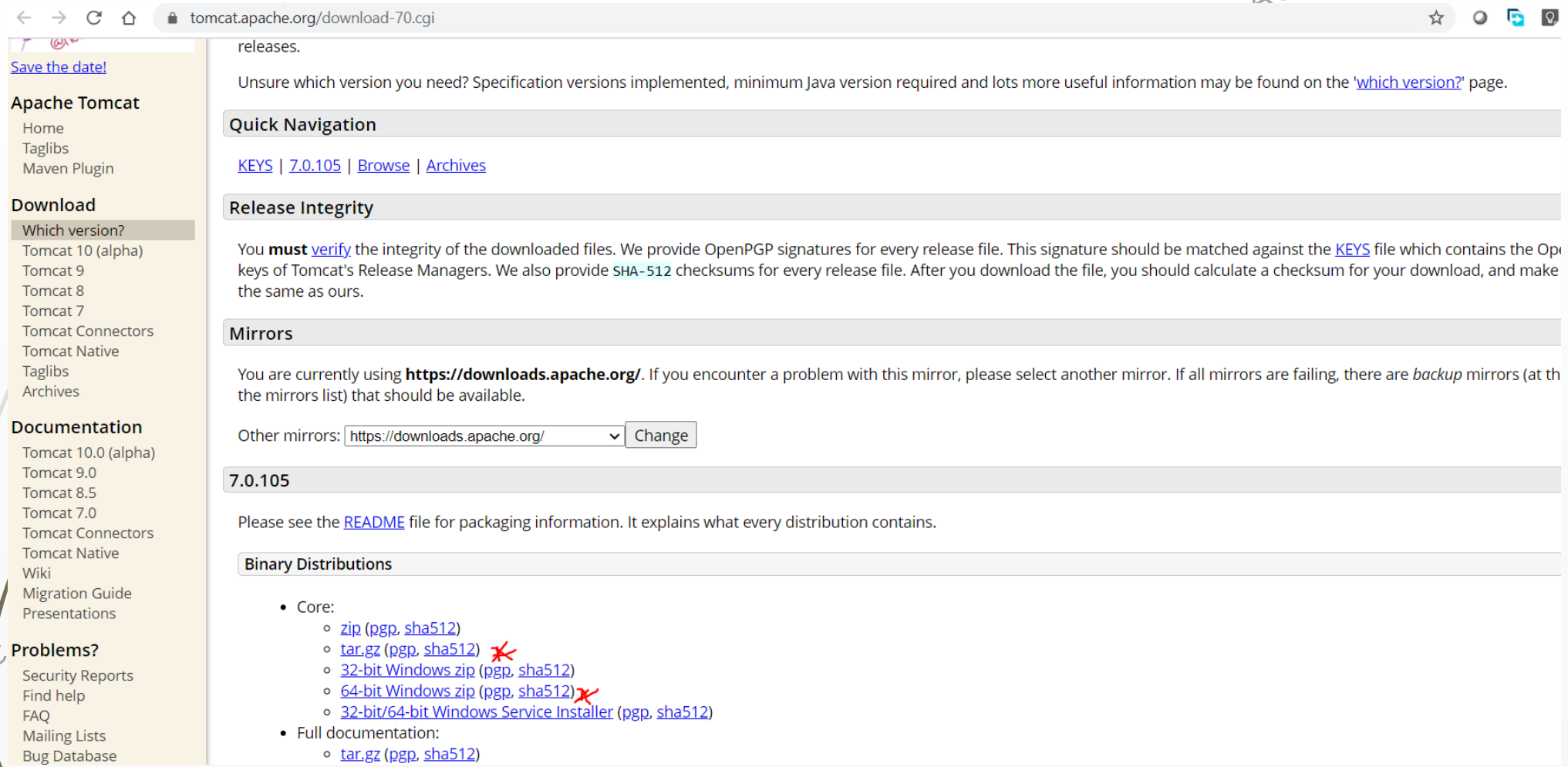
Epic Academy Epic Academy Epic Academy

This concludes database installation and setup for the lab

Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy

Step 3: Download and Install Tomcat Application

Tomcat application will be used to host the Car Sample Application
Download Apache Tomcat apache-tomcat-7.0.104.tar or apache-tomcat-7.0.105.tar.gz
Download depending on your operating system on https://tomcat.apache.org/download-70.cgi

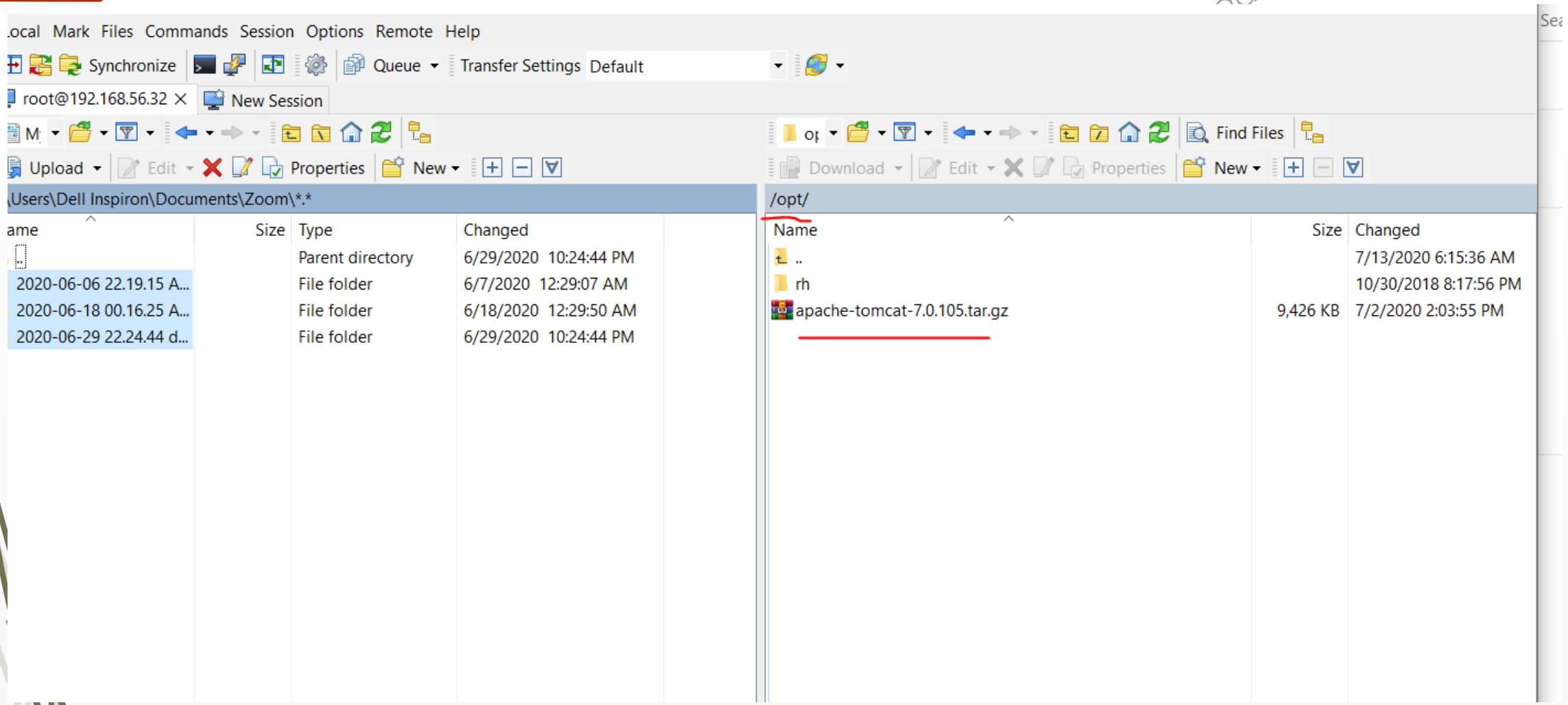


Epic Academy

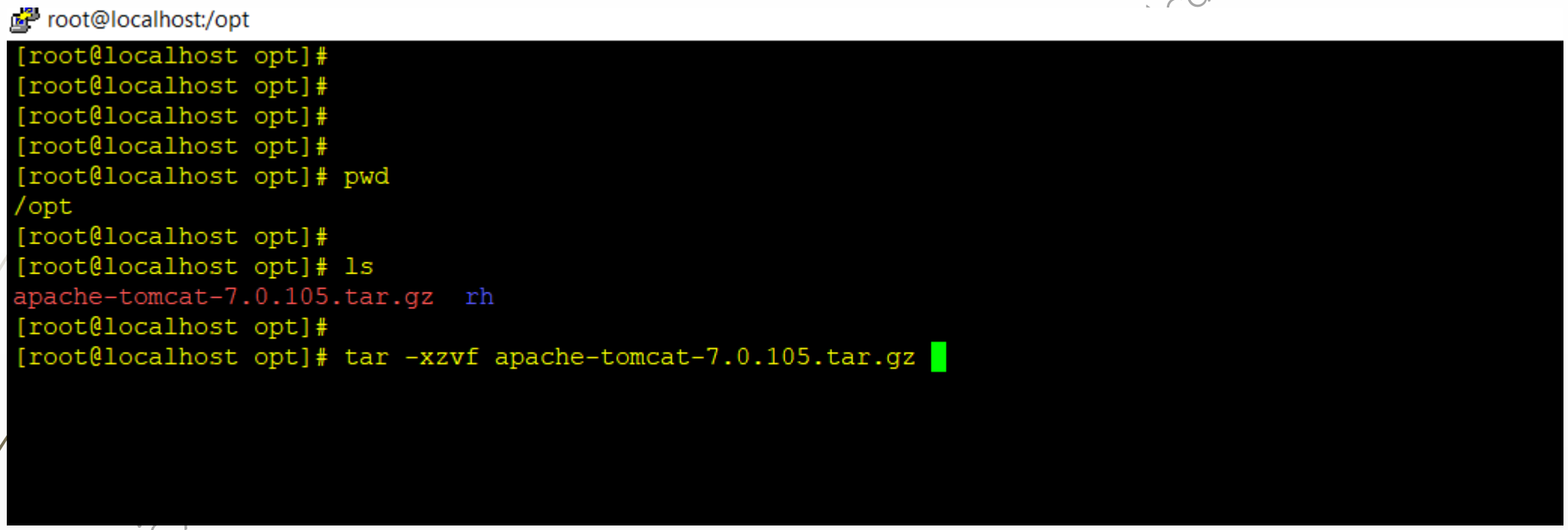
Move the downloaded tomcat file with WinSCP to your server into any directory – in my case **/opt**

You can download and install WinSCP from https://winscp.net/eng/download.php

ademy Epic Academy



Login via putty and extract the file
You can download putty from https://www.putty.org/



Epic Academy Epic Academy

Login via putty and extract the file using

[root@localhost opt]# tar -xzvf apache-tomcat-7.0.105.tar.gz

root@localhost:/opt

```
[root@localhost opt]#
[root@localhost opt]#
[root@localhost opt]#
[root@localhost opt]#
[root@localhost opt]# pwd
/opt
[root@localhost opt]#
[root@localhost opt]# ls
apache-tomcat-7.0.105.tar.gz  rh
[root@localhost opt]#
[root@localhost opt]# tar -xzvf apache-tomcat-7.0.105.tar.gz
```

Use the 'ls' command to list the directory and see what you have extracted. You should see the apache directory
[root@localhost opt]# ls

```
[root@localhost opt]#
[root@localhost opt]# ls
apache-tomcat-7.0.105  apache-tomcat-7.0.105.tar.gz  rh
[root@localhost opt]#
[root@localhost opt]#
```

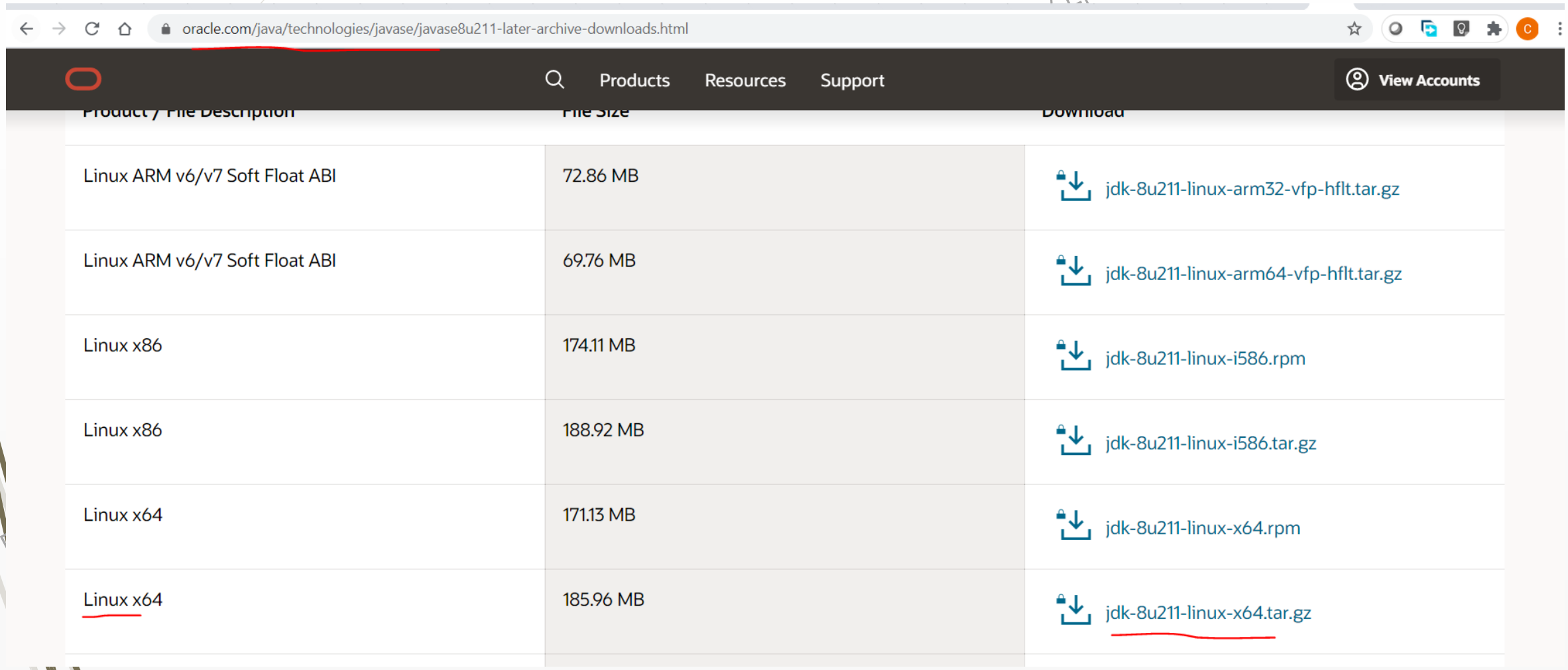
Epic Academy

Step 4: Setup the JAVA HOME

Set up the JAVA HOME for the tomcat environment

- Download the oracle JDK.It will prompt you to sign in to download. Sign in and download.
- Extract into your choice directory - /opt in my case. I downloaded jdk-8u211-linux-x64.tar.gz

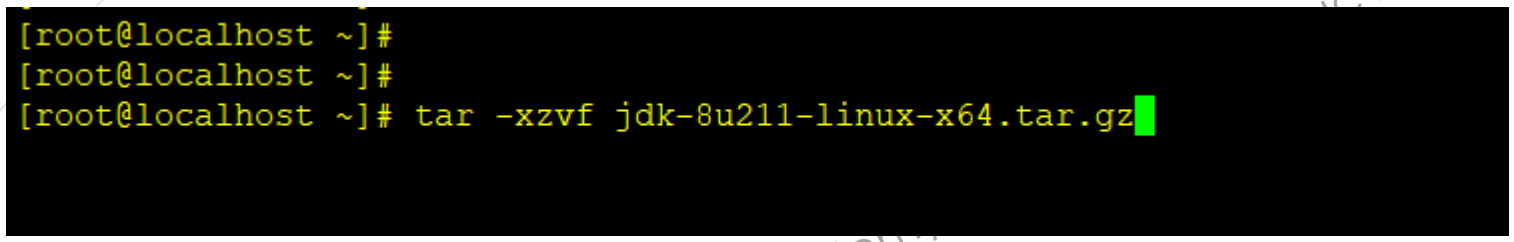
Epic Academy Epic Academy



Product / File Description	File Size	Download
Linux ARM v6/v7 Soft Float ABI	72.86 MB	jdk-8u211-linux-arm32-vfp-hflt.tar.gz
Linux ARM v6/v7 Soft Float ABI	69.76 MB	jdk-8u211-linux-arm64-vfp-hflt.tar.gz
Linux x86	174.11 MB	jdk-8u211-linux-i586.rpm
Linux x86	188.92 MB	jdk-8u211-linux-i586.tar.gz
Linux x64	171.13 MB	jdk-8u211-linux-x64.rpm
Linux x64	185.96 MB	jdk-8u211-linux-x64.tar.gz

Set up the JAVA HOME for the tomcat environment

- Download the oracle JDK. It will prompt you to sign in to download. Sign in and download.
- Copy with WinSCP to your server and extract into your choice directory - /opt in my case
- [root@localhost opt]# tar –xzvf jdk-8u211-linux-x64.tar.gz



Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy

Set up the JAVA HOME for the tomcat environment

The command below shows the JAVA home is not setup. The JAVA Home is required for Tomcat to run.

- [root@localhost opt]# echo $JAVA_HOME

```
[root@localhost opt]# echo $JAVA_HOME

[root@localhost opt]#
```

- Modify the /etc/profile file and add the java environmental variables below

- export JAVA_HOME=/opt/jdk1.8.0_211
- export JRE_HOME=/opt/jdk1.8.0_211/jre
- export PATH=$PATH:/opt/jdk1.8.0_211/bin:/opt/jdk1.8.0_211/jre/bin

```
[root@localhost opt]#
[root@localhost opt]# vi /etc/profile
```

Epic Academy

Set up the JAVA HOME for the tomcat environment

Modify and save the file with :wq

root@localhost:/opt

```
# /etc/profile

# System wide environment and startup programs, for login setup
# Functions and aliases go in /etc/bashrc

# It's NOT a good idea to change this file unless you know what you
# are doing. It's much better to create a custom.sh shell script in
# /etc/profile.d/ to make custom changes to your environment, as this
# will prevent the need for merging in future updates.

export JAVA_HOME=/opt/jdk1.8.0_211
export JRE_HOME=/opt/jdk1.8.0_211/jre
export PATH=$PATH:/opt/jdk1.8.0_211/bin:/opt/jdk1.8.0_211/jre/bin

pathmunge () {
    case ":${PATH}:" in
        *:"$1":*)
```

```
HOSTNAME=`/usr/bin/hostname 2>/dev/null`
:wq
```

demy Epic Academy
Epic Academy Epic

Set up the JAVA HOME for the tomcat environment
Modify and save the file with :wq

Logout of the terminal and login again and run or restart

[root@dockerhost ~]# echo $JAVA_HOME

```
[root@localhost ~]#
[root@localhost ~]# echo $JAVA_HOME
/opt/jdk1.8.0_211
[root@localhost ~]#
```

Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy

Step 5: Start the Tomcat Application

Starting tomcat

Navigate to tomcat bin directory /opt/apache-tomcat-7.0.105/bin and run
[root@localhost bin]# ./catalina.sh start

If you run into permission as seen below in the tomcat log **catalina.out** , give the java an execute permission with "chmod 755 or 777 /opt/jdk1.0.0_211/jre/bin/java"

```
[root@localhost bin]# pwd
/opt/apache-tomcat-7.0.105/bin
```

```
udp6       0      0 :::858                  :::*                                688/rpcbind
[root@localhost bin]# ./catalina.sh start
Using CATALINA_BASE:   /opt/apache-tomcat-7.0.105
Using CATALINA_HOME:   /opt/apache-tomcat-7.0.105
Using CATALINA_TMPDIR: /opt/apache-tomcat-7.0.105/temp
Using JRE_HOME:        /opt/jdk1.8.0_211/jre
Using CLASSPATH:       /opt/apache-tomcat-7.0.105/bin/bootstrap.jar:/opt/apache-tomcat-7.0.105/bin/tom
Tomcat started.
[root@localhost bin]# cd ..
[root@localhost apache-tomcat-7.0.105]# cd logs/
[root@localhost logs]# ls
catalina.out
[root@localhost logs]# cat catalina.out
./catalina.sh: line 501: /opt/jdk1.8.0_211/jre/bin/java: Permission denied
./catalina.sh: line 501: /opt/jdk1.8.0_211/jre/bin/java: Permission denied
./catalina.sh: line 501: /opt/jdk1.8.0_211/jre/bin/java: Permission denied
[root@localhost logs]#
[root@localhost logs]# chmod 777 /opt/jdk1.8.0_211/jre/bin/java
[root@localhost logs]#
```

Epic Academy Epic Academy Epic Academy

Starting tomcat

Navigate to tomcat bin directory /opt/apache-tomcat-7.0.105/bin and run

[root@localhost bin]# ./catalina.sh start

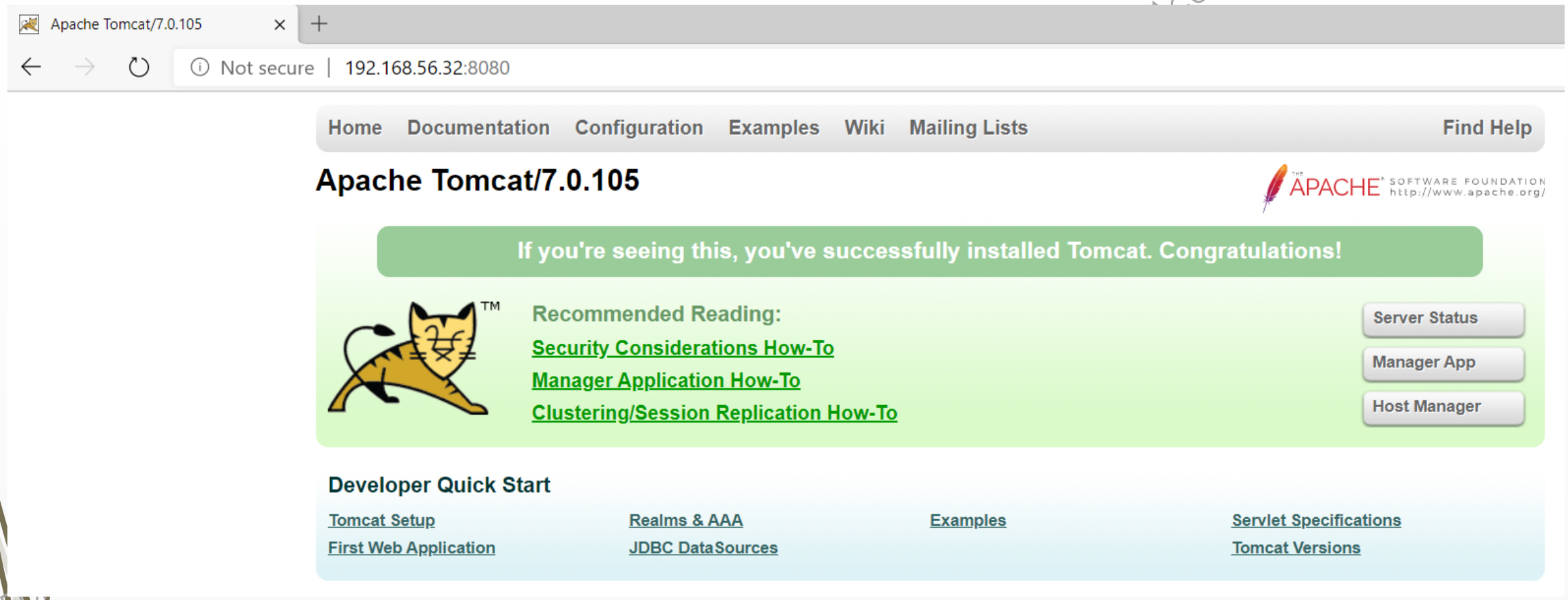
Use netstat to confirm tomcat is listening on default port 8080

Epic Academy

```
[root@localhost bin]#
[root@localhost bin]# ./catalina.sh start
Using CATALINA_BASE:   /opt/apache-tomcat-7.0.105
Using CATALINA_HOME:   /opt/apache-tomcat-7.0.105
Using CATALINA_TMPDIR: /opt/apache-tomcat-7.0.105/temp
Using JRE_HOME:        /opt/jdk1.8.0_211/jre
Using CLASSPATH:       /opt/apache-tomcat-7.0.105/bin/bootstrap.jar:/opt/apache-tomcat-7.0.105/bin/tomcat-juli.jar
Tomcat started.
[root@localhost bin]#
[root@localhost bin]#
[root@localhost bin]# netstat -tulpn
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        0      0 127.0.0.1:25            0.0.0.0:*               LISTEN      1162/master
tcp        0      0 0.0.0.0:111             0.0.0.0:*               LISTEN      688/rpcbind
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN      957/sshd
tcp6       0      0 ::1:25                  :::*                    LISTEN      1162/master
tcp6       0      0 127.0.0.1:8005          :::*                    LISTEN      1495/java
tcp6       0      0 :::3306                 :::*                    LISTEN      1017/mysqld
tcp6       0      0 :::111                  :::*                    LISTEN      688/rpcbind
tcp6       0      0 :::8080                 :::*                    LISTEN      1495/java
tcp6       0      0 :::22                   :::*                    LISTEN      957/sshd
udp        0      0 0.0.0.0:111             0.0.0.0:*                           688/rpcbind
udp        0      0 127.0.0.1:323           0.0.0.0:*                           705/chronyd
udp        0      0 0.0.0.0:858             0.0.0.0:*                           688/rpcbind
udp6       0      0 :::111                  :::*                                688/rpcbind
udp6       0      0 ::1:323                 :::*                                705/chronyd
udp6       0      0 :::858                  :::*                                688/rpcbind
[root@localhost bin]#
```

Starting tomcat
Access the tomcat URL to confirm you are good to go

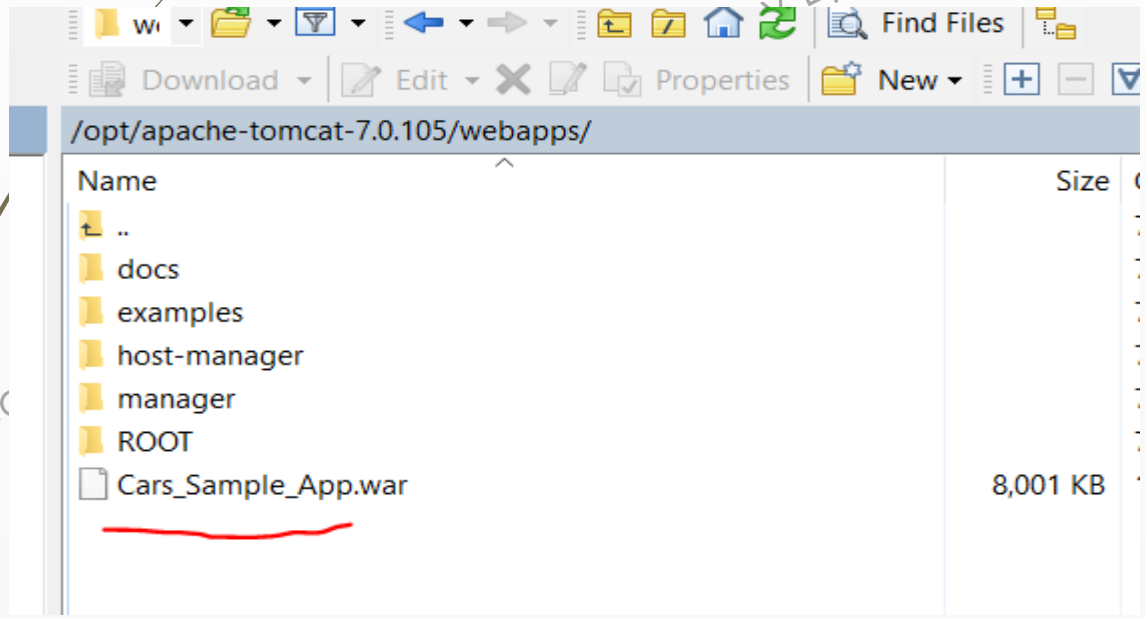
Academy Epic Academy



Step 6: Deploy the supercar .war file

With your tomcat and MySQL running, you are ready to deploy your web applications
Copy the Cars_Sample_App.war file with WinSCP and drop in **/opt/apache-tomcat-7.0.105/webapps**
Tomcat will unpack this and deploy the application

```
[root@localhost webapps]#
[root@localhost webapps]# pwd
/opt/apache-tomcat-7.0.105/webapps
[root@localhost webapps]#
[root@localhost webapps]# ls
docs  examples  host-manager  manager  ROOT
[root@localhost webapps]#
```

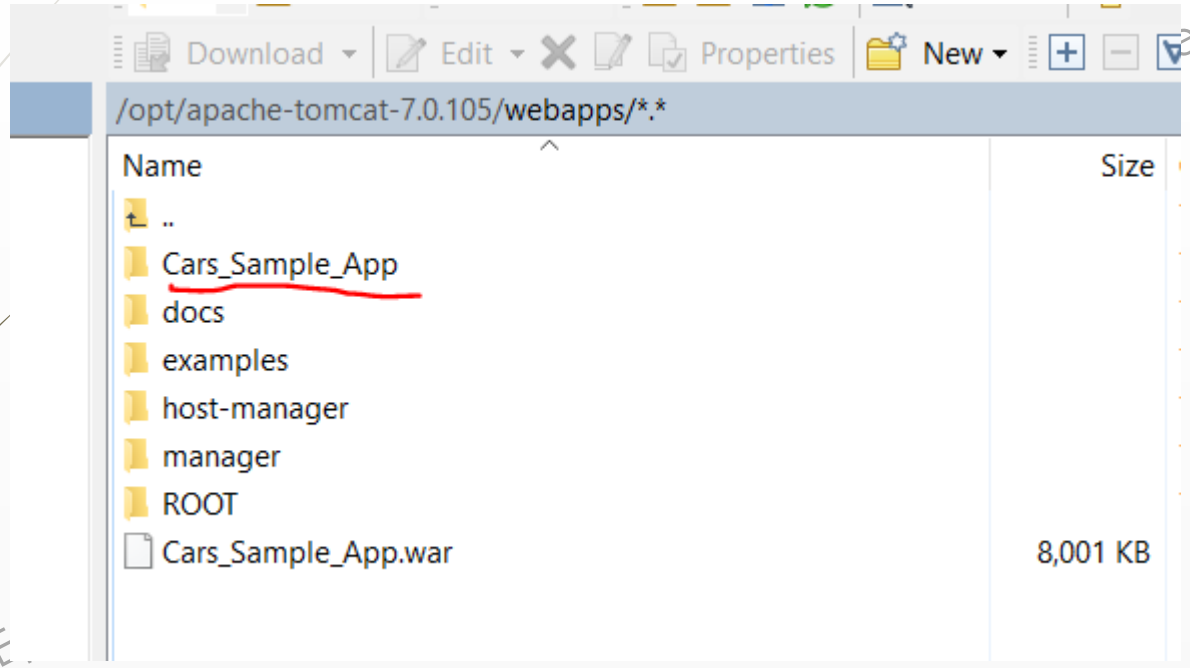


War file is a Web Application resource or web application archive used in packaging and distributing .jar files, htm pages, jsp pages and other resources to constitute an application.

Epic Academy

Deploying the supercars web application

You should see the deployed application with the additional directory

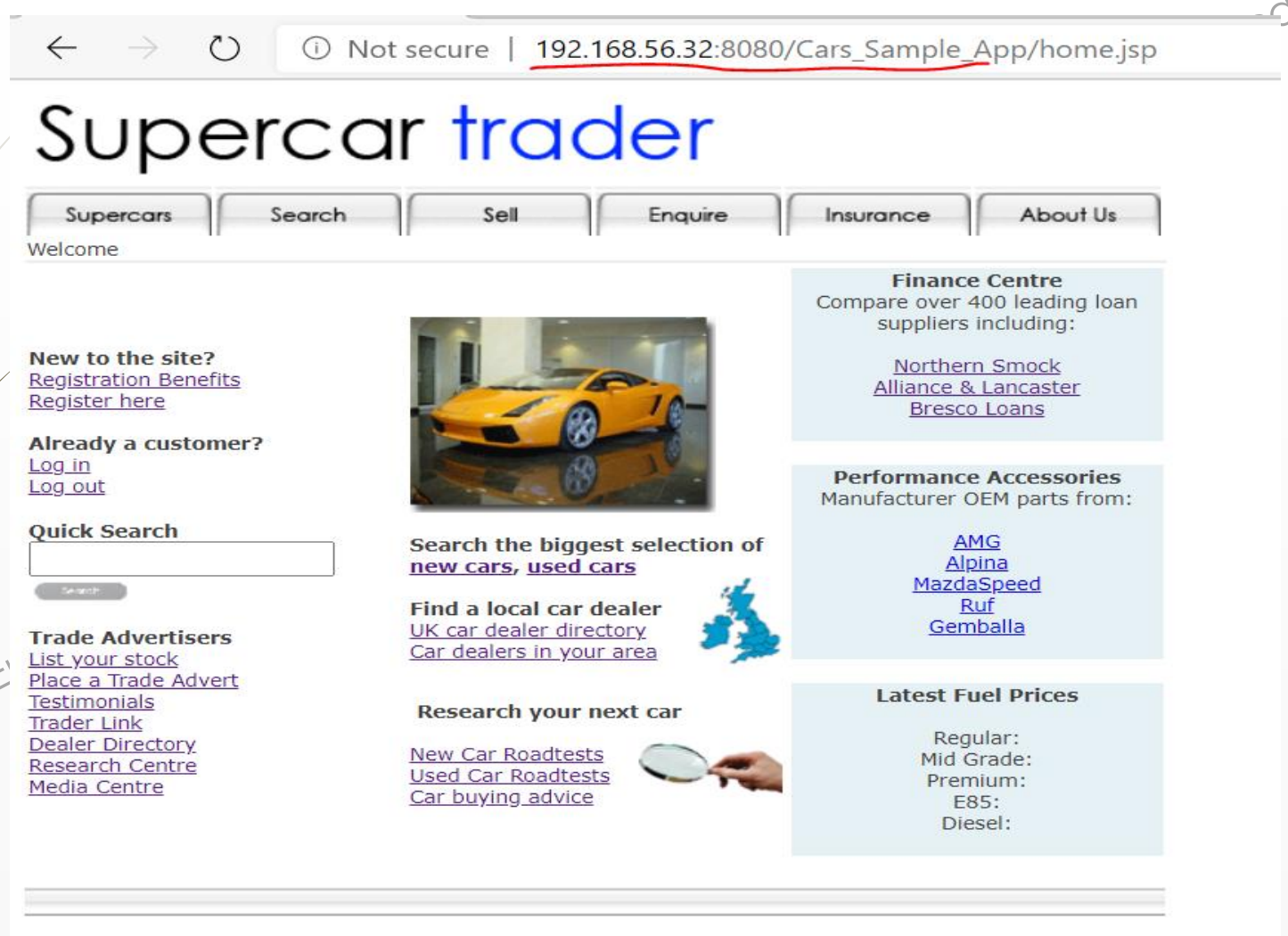



```
[root@localhost webapps]# ls
Cars_Sample_App  Cars_Sample_App.war  docs  examples  host-manager  manager  ROOT
[root@localhost webapps]#
```

Epic Academy Epic Academy Epic Academy

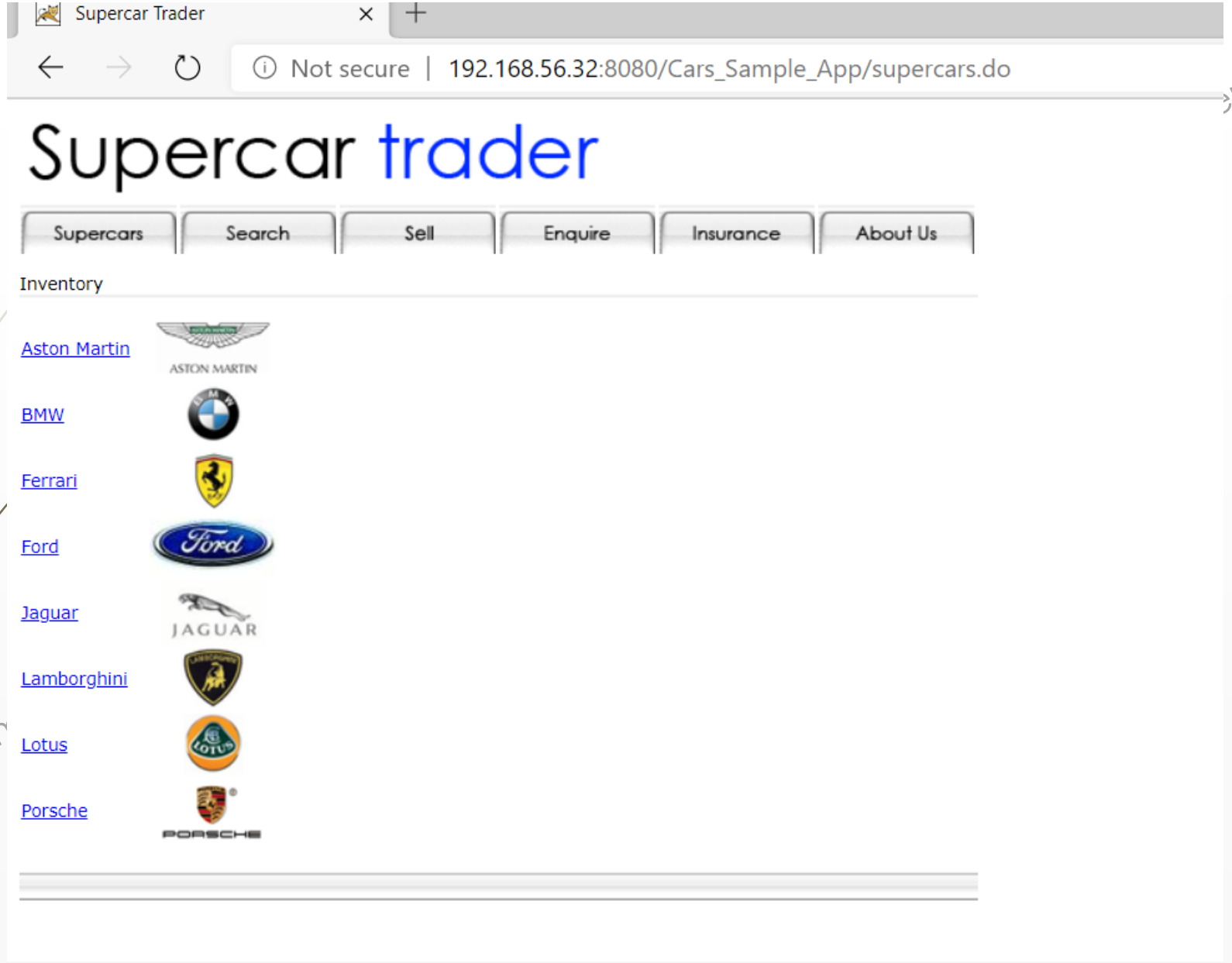
Accessing the supercars web application

Access your newly deployed application on your URL
http://192.168.56.32:8080/Cars_Sample_App/home.jsp



Epic Academy

You should see Car Images under supercars tab



Epic Academy

Exercise 1: Instrumenting Java Based Application

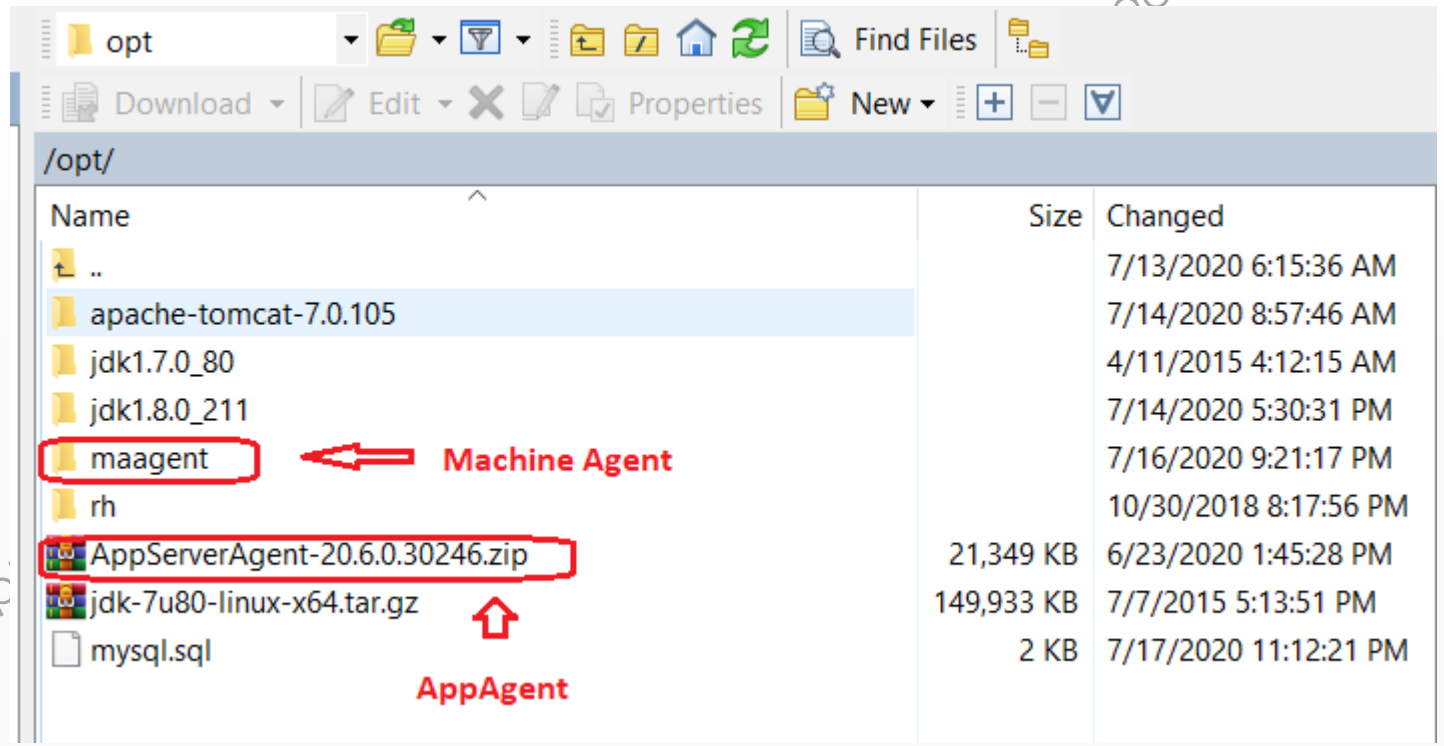
Refer to AppDynamics documentation on Tomcat

https://docs.appdynamics.com/display/PRO45/Apache+Tomcat+Startup+Settings

Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy

Exercise 1: Instrumenting Java Based Application - Instruction

Step 1: Use WinSCP to copy the AppDynamics App Agent and the machine agent binaries to the server



Epic Academy Epic Academy Epic Academy

Exercise 1: Instrumenting Java Based Application - Instruction

Step 2: Make a directory under /opt called AppServerAgent, Move the binaries inside it and extract

[root@localhost opt]# mkdir AppServerAgent
[root@localhost opt]# mv AppServerAgent-20.6.0.30246.zip AppServerAgent
[root@localhost opt]# cd AppServerAgent/
[root@localhost AppServerAgent]# unzip AppServerAgent-20.6.0.30246.zip

```
[root@localhost opt]#
[root@localhost opt]# mkdir AppServerAgent
[root@localhost opt]# mv AppServerAgent-20.6.0.30246.zip AppServerAgent
[root@localhost opt]#
[root@localhost opt]#
[root@localhost opt]# cd AppServerAgent/
[root@localhost AppServerAgent]# unzip AppServerAgent-20.6.0.30246.zip
Archive:  AppServerAgent-20.6.0.30246.zip
  inflating: readme.txt.asc
   creating: ver20.6.0.30246/
  inflating: ver20.6.0.30246/readme.txt.asc
  inflating: ver20.6.0.30246/readme.txt
```

Epic Academy Epic Academy Epic Academy
Epic Academy Epic Academy

Exercise 1: Instrumenting Java Based Application - Instructions

Step 3: Edit the AppDynamics File /opt/AppServerAgent/conf/controller-info.xml

cd /opt/AppServerAgent/conf
[root@localhost conf]# vi controller-info.xml

Modify the following replacing the controller-host with your controller ip address and your access key.

```
 <controller-host>192.168.56.40</controller-host>
<controller-port>8090</controller-port>
<application-name>CarSampleApp</application-name>
 <tier-name>WebTier</tier-name>
<node-name>WebNode1</node-name>
 <account-name>customer1</account-name>
<account-access-key>xxxxxxxxxxxxxxx</account-access-key>
```

Save the file and exit.

Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy

Exercise 1: Instrumenting Java Based Application - Instructions

Refer to AppDynamics documentation on Tomcat

Step 1: use the vi to Create **setenv.sh** file under the Tomcat CATALINA_BASE/bin directory

[root@localhost ~]# cd /opt/apache-tomcat-7.0.105/bin/

[root@localhost bin]# vi setenv.sh

export CATALINA_OPTS="$CATALINA_OPTS -javaagent:/opt/AppServerAgent/javaagent.jar"

Save and exit.

Give the setenv.sh script execution permission

[root@localhost bin]# chmod 777 setenv.sh

Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy

Exercise 1: Instrumenting Java Based Application - Instructions

Start the Tomcat Application

[root@localhost bin]# ./catalina.sh start

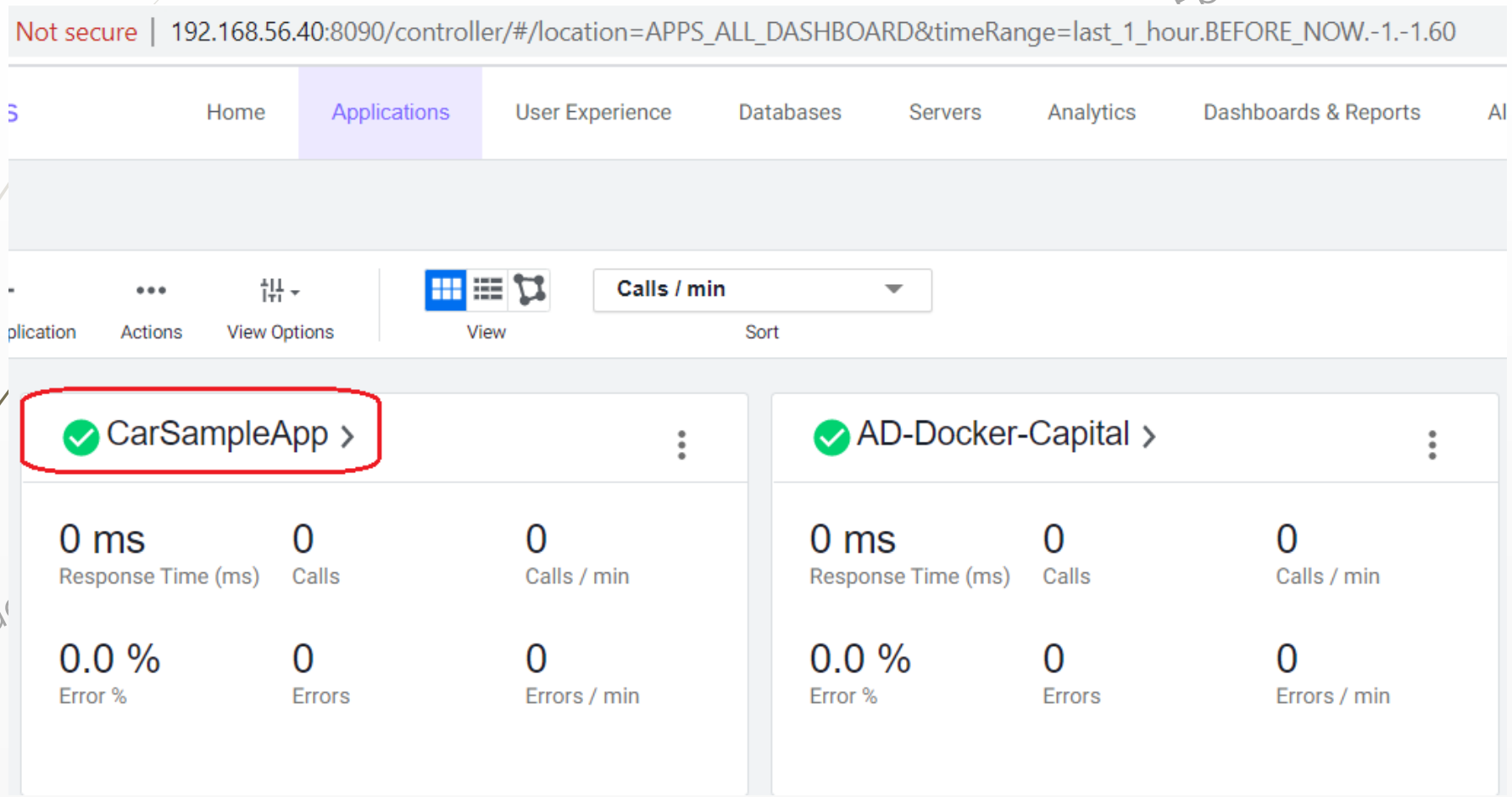
```
[root@localhost bin]# ./catalina.sh start
Using CATALINA_BASE:   /opt/apache-tomcat-7.0.105
Using CATALINA_HOME:   /opt/apache-tomcat-7.0.105
Using CATALINA_TMPDIR: /opt/apache-tomcat-7.0.105/temp
Using JRE_HOME:        /opt/jdk1.8.0_211/jre
Using CLASSPATH:       /opt/apache-tomcat-7.0.105/bin/bootstrap.jar:/opt/apache-tomcat-7.0.105/bin/tomcat-juli.jar
Tomcat started.
[root@localhost bin]#
```

Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy

Instrument the Car Sample Application with AppDynamics

Exercise 1: Instrumenting Java Based Application – Instructions

Application should register with the controller



Epic Academy Epic Academy

Exercise 1: Instrumenting Java Based Application – Instructions

Check the agent log as discussed in the video to confirm fill registration

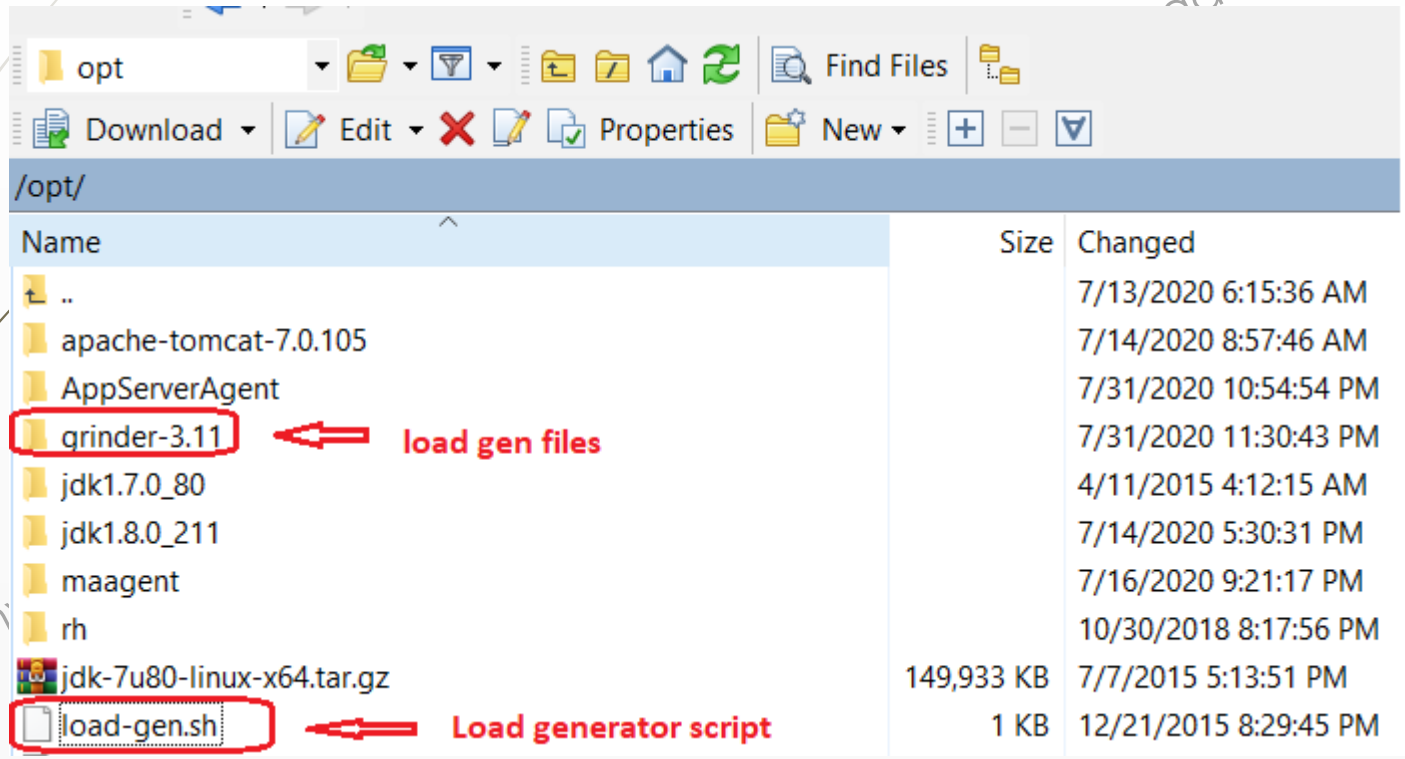
Confirm you see the following in the log

[AD Agent init] 31 Jul 2020 23:22:01,570 INFO JavaAgent - Started AppDynamics Java Agent Successfully.

Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy

Exercise 2: Generate load using Grinder script in the lab files

Step 1: Copy the grinder files and script with WinSCP



Epic Academy Epic Academy Epic Academy

Exercise 2: Generate load using Grinder script in the lab files

Step 2: Give the script permission and then run the load-gen.sh file to generate load

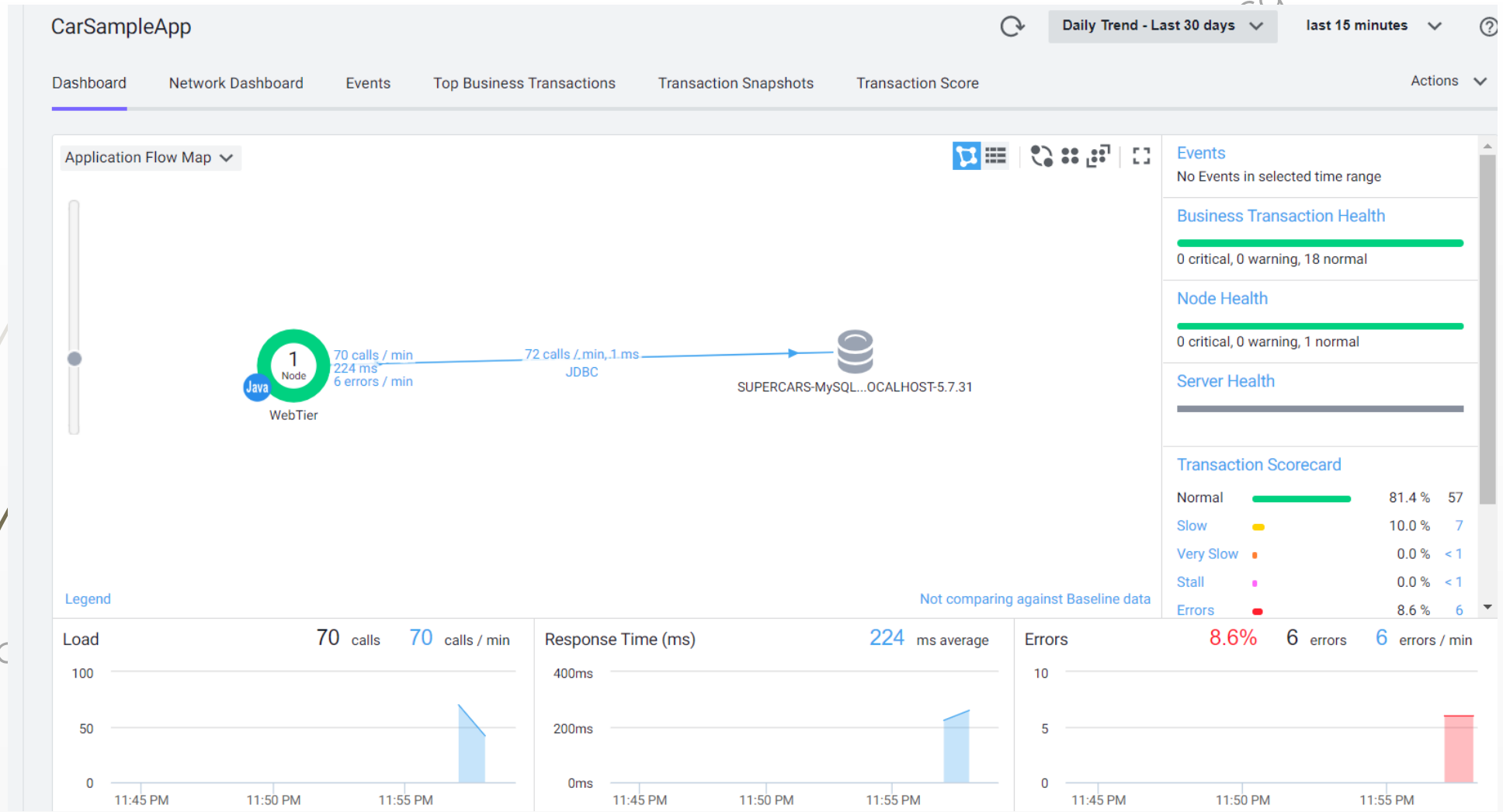
[root@localhost opt]# chmod 777 load-gen.sh
[root@localhost opt]# ./load-gen.sh &

```
[root@localhost opt]# ./load-gen.sh &
[1] 1890
[root@localhost opt]# /opt
/opt/grinder-3.11/lib/grinder.jar
2020-07-31 23:40:55,652 INFO  agent: The Grinder 3.11
2020-07-31 23:40:55,659 INFO  agent: Worker process command line: java '-javaagent:/opt/grinder-3.11/lib/grinder-
er.engine.process.WorkerProcessEntryPoint
2020-07-31 23:40:55,729 INFO  agent: worker localhost.localdomain-0 started
2020-07-31 23:40:57,349 INFO  localhost.localdomain-0: starting threads

[root@localhost opt]#
```

Epic Academy Epic Academy Epic Academy Epic Academy

Instrument the Car Sample Application with AppDynamics

Cars Sample Flow Map should populate



The End

Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy Epic Academy