

Project:

To setup virtual application development environment with Docker Containers on AWS Cloud.

Tools Used:

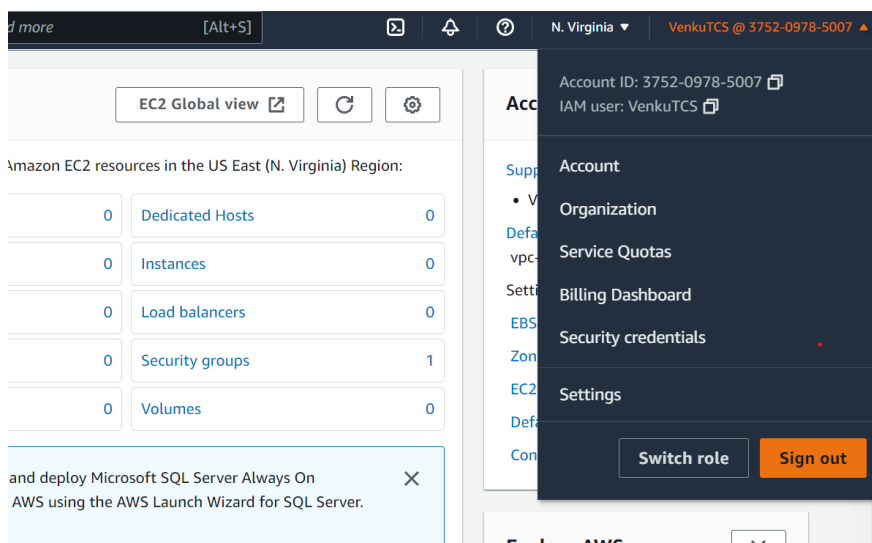
AWS Free Tier
Ubuntu 18.04 Instance
Docker CE
Git, Vim, Build Essential, Apache Tomcat, Java

Note:

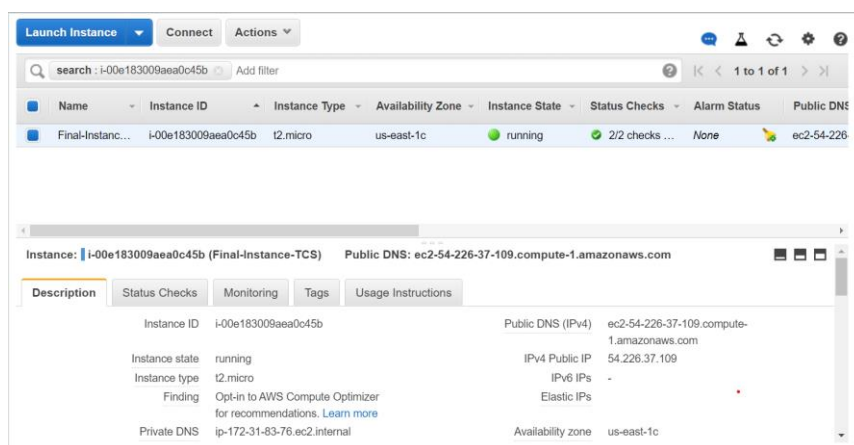
The pre-requisites and testing for the project has been made manually by running the commands and installing them individually on a separate Ubuntu machine post that it has been implemented through Docker in a new Ubuntu instance.

Flow of Execution:

1. First setup an AWS Free Tier account to deploy the Ubuntu Instance

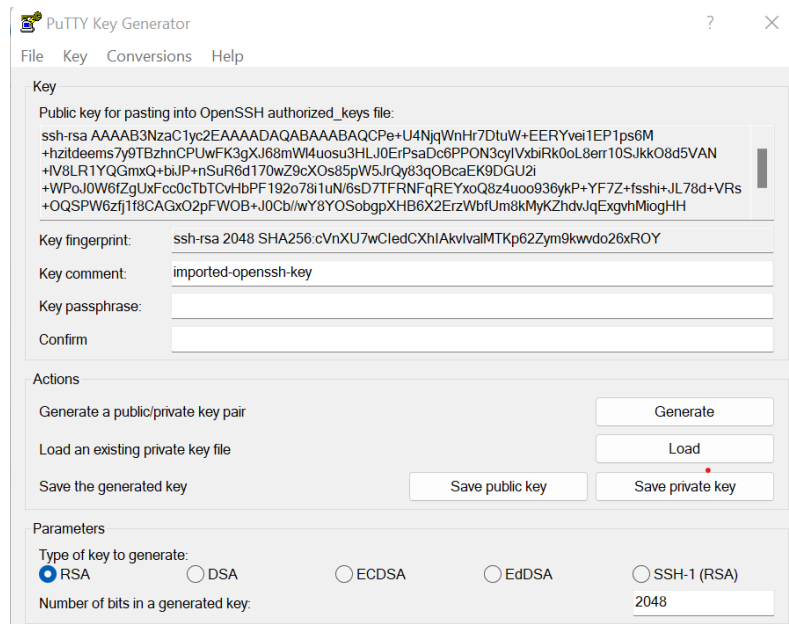


2. Deploy an Ubuntu 18.04 instance on AWS cloud using EC2 Service.

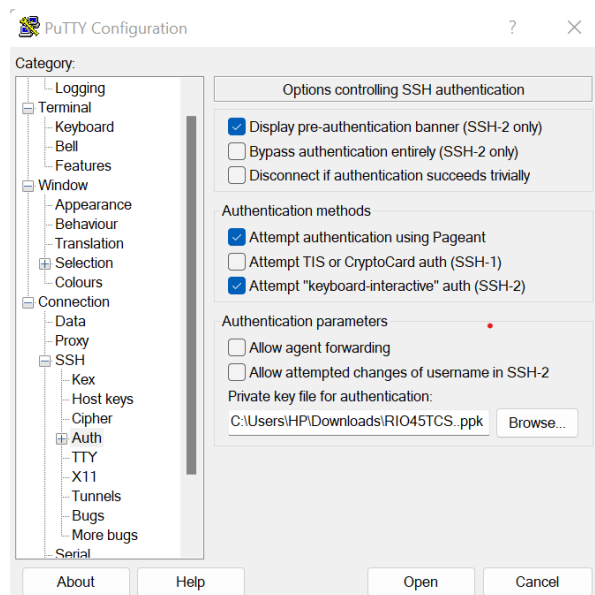


3. Login to the Ubuntu Instance

Setting up the ppk using the Puttygen



Login using the putty through ubuntu@54.226.37.109 and by placing the ppk file in Auth section



4. Install Docker on the ubuntu through the Official Docker Documentation with the available commands or through convenience script.

```
curl -fsSL https://get.docker.com -o get-docker.sh
```

```
$ sudo sh get-docker.sh
```

```
root@ip-172-31-83-76:~/Docker# docker --version
Docker version 20.10.17, build 100c701
```

-----Successfully installed Docker

5. Creating the Docker file to install Git, Vim, Build- essential , JDK and Apache Tomcat.

Docker File:

```
FROM ubuntu:18.04
RUN apt-get update
RUN apt-get install git -y
RUN apt-get install vim -y
RUN apt-get install build-essential -y
RUN apt-get install default-jdk -y
RUN apt-get install default-jre -y
RUN apt-get -y update && apt-get -y upgrade
RUN apt-get -y install wget
RUN mkdir /usr/local/tomcat
RUN wget http://dlcdn.apache.org/tomcat/tomcat-8/v8.5.81/bin/apache-tomcat-8.5.81.tar.gz -O
/tmp/tomcat.tar.gz
RUN cd /tmp && tar xvfz tomcat.tar.gz
RUN cp -Rv /tmp/apache-tomcat-8.5.81/* /usr/local/tomcat/
EXPOSE 8080
CMD /usr/local/tomcat/bin/catalina.sh run
```

6. Creating an Image of the above Docker file through the Docker Build named **tcsfinal** through **docker build -t tcsfinal**.

Verifying through docker images command.

```
root@ip-172-31-83-76:~/Docker# docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
tcsfinal      latest    802c5c0cffc1   About a minute ago  1.06GB
ubuntu        18.04     8d5df41c547b   13 hours ago   63.1MB
```

7. Creating a container through the image **tcsfinal** through docker run command and exposing the host port 8080 to container port 8080

```
root@ip-172-31-83-76:~/Docker# docker run -d -p 8080:8080 tcsfinal
949c79c04de2e4db8ea5b0224bf06f57d4d253188de3043bed02ff63e3aeb3c5
```

Verifying through docker ps command.

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
949c79c04de2	tcsfinal	"/bin/sh -c '/usr/lo..."	2 minutes ago	Up 2 minutes	0.0.0.0:8080->8080/tcp, :::8080->8080/tcp	modest_elion


Now checking whether the Apache Tomcat is accessible or not through the link
<http://54.226.37.109:8080/>

← → ↻ ⚠ Not secure | 54.226.37.109:8080


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Home Documentation Configuration Examples Wiki Mailing Lists Find Help

Apache Tomcat/8.5.81



If you're seeing this, you've successfully installed Tomcat. Congratulations!



Recommended Reading:

[Security Considerations How-To](#)
[Manager Application How-To](#)
[Clustering/Session Replication How-To](#)

Server Status

Manager App

Host Manager

Developer Quick Start

[Tomcat Setup](#)
[First Web Application](#)

[Realms & AAA](#)
[JDBC DataSources](#)

[Examples](#)

[Servlet Specifications](#)
[Tomcat Versions](#)

Managing Tomcat

For security, access to the [manager webpage](#) is restricted. Users are defined in:
`$CATALINA_HOME/conf/tomcat-users.xml`
In Tomcat 8.5 access to the manager application is split between different users.
[Read more...](#)

Documentation

[Tomcat 8.5 Documentation](#)
[Tomcat 8.5 Configuration](#)
[Tomcat Wiki](#)
Find additional important configuration information in:
`$CATALINA_HOME/RUNNING.txt`

Getting Help

[FAQ and Mailing Lists](#)
The following mailing lists are available:

[tomcat-announce](#)
Important announcements, releases, security vulnerability notifications. (Low volume).

[tomcat-users](#)
User support and discussion