

Provisioning Jenkins Server in AWS

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Launch EC2 Instance

AMI

- An example of AWS AMI to use is `amzn-ami-hvm-2016.09.1.20161221-x86_64-gp2 (ami-1e299d7e)`

Security Group

- Inbound Rule
 - SSH (Port 22)
 - HTTP (Port 8080)
- Outbound Rule
 - All Traffic on all ports

Post Launch Steps

- ssh into ec2 instance:

```
ssh -i key_pair.pem ec2-user@ec2_ip_address
```

- Apply update (optional but recommended)

```
sudo yum update -y
```

- Follow the instruction described in [Docker Basics](#) to install Docker

```
# install Docker
sudo yum install -y docker

# start Docker daemon
sudo service docker start

# Add the ec2-user to the docker group so you can execute Docker
commands without using sudo.
sudo usermod -a -G docker ec2-user

Log out and log back in again to pick up the new docker group
permissions.

# Verify that the ec2-user can run Docker commands without sudo.
docker info
```

Running Jenkins Server

- Jenkins server can run as a Java web application, as Docker container or installed via package manager.

Running Jenkins War file

- Download war file from jenkins.io
- Run command

```
java -jar jenkins.war
```

- Jenkins workspace will be under `/home/ec2-user/.jenkins`

Running Jenkins Docker Container

- See official [jenkins](https://jenkins.io/docker) docker hub page for details of how to use images.
- Docker command

```
docker run -d --name jenkins -p 8080:8080 -p 50000:50000 -v  
/var/run/docker.sock:/var/run/docker.sock -v  
/home/ec2-user/.jenkins:/var/jenkins_home -v  
/usr/bin/docker:/usr/bin/docker jenkins:2.32.1
```

- Local `/home/ec2-user/.jenkins` directory is mapped to `/var/jenkins_home` inside docker container
- In order for jenkins user (running inside docker container) to be able to use the persistence storage, `/home/ec2-user/.jenkins` needs to have the permission set to allow read/write by users.
- We also share the Docker socket so that when Jenkins creates a new Docker container, it will run as a sibling container instead of Docker in Docker.
- In order for Jenkins Docker container to run Docker command, Docker needs to be installed on Jenkins Docker container. However, the out-of-box Jenkins image does not have `sudo` and does not allow jenkins user to become root user to install Docker. An alternative way is to map the docker sock and binary from the host machine with the Jenkins Docker container.

Installing Jenkins via Package Manager

- Follow the [instruction](#) to install Jenkins as service

```
sudo wget -O /etc/yum.repos.d/jenkins.repo  
http://pkg.jenkins-ci.org/redhat-stable/jenkins.repo  
sudo rpm --import https://jenkins-ci.org/redhat/jenkins-ci.org.key  
sudo yum install jenkins  
sudo service jenkins start/stop/restart  
sudo chkconfig jenkins on
```

- Jenkins workspace will be under `/var/lib/jenkins`

Plugins To Be Installed

- [Docker Pipeline](#)

Software

- Java 8 comes with the Jenkins docker image