- SSH public/private keys

SSH or Secure Shell is a remote administration protocol used to ensure a secure connection between a user and a server, so it allows to work inside the server.

SSH works using cryptography and the most secure method for SSH is the pair of keys, in which the first one is public and stored in the server and the second one is stored in the remote user machine and is private.

FEDORA Process

- Run VM using vagrant
- Login using following credentials:

Login: vagrant

Password: vagrant

- Execute following commands for updating:

sudo su

dnf check-update

dnf upgrade

```
Installed:
  kernel-5.16.18-200.fc35.x86_64              kernel-core-5.16.18-200.fc35.x86_64      kernel-devel-5.16.18-200.fc35.x86_64
  kernel-modules-5.16.18-200.fc35.x86_64      openssl-pkcs11-0.4.11-4.fc35.x86_64

Complete!
```

- Add new user, add as to sudoer group and verify sudo access

adduser cris

passwd cris -> set password

sudo usermod -aG wheel cris

su cris -> insert password

sudo dnf install nano

```
Installed:
  nano-5.8-4.fc35.x86_64

Complete!
[cris@fedora35 ~]$
```

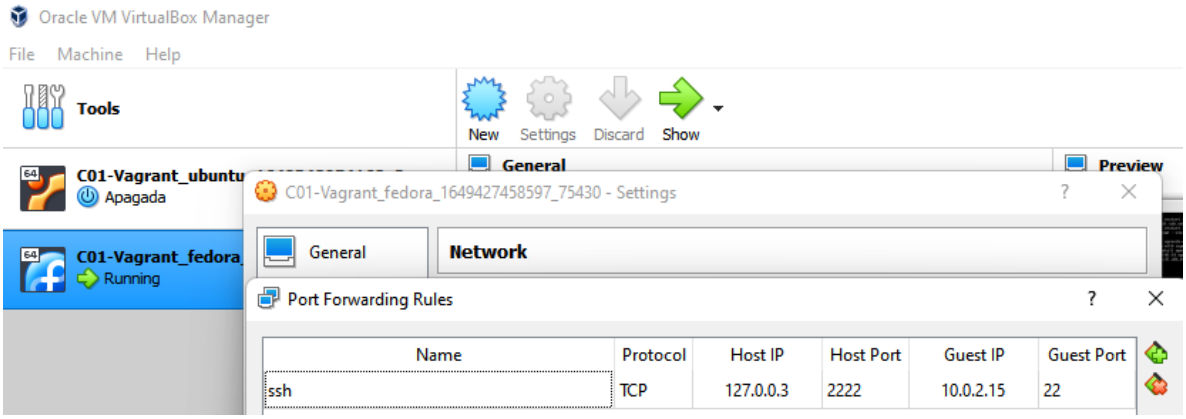
- Authorize password login and restart ssh

sudo vi /etc/ssh/sshd_config

```
# To disable tunneled clear text passwords, change to no here!
PasswordAuthentication yes
PermitEmptyPasswords no
```

Sudo systemctl restart sshd

- Configure VM Network ports as follows:



- Copy the SSH key for the host – Use the same key generated for ubuntu LogIn

```
Cristian@DESKTOP-PM304DL MINGW64 ~
$ ssh-copy-id -p 2222 cris@127.0.0.3
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/c/Users/user/.ssh/id_rsa.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
cris@127.0.0.3's password:

Number of key(s) added: 1

Now try logging into the machine, with:   "ssh -p '2222' 'cris@127.0.0.3'"
and check to make sure that only the key(s) you wanted were added.
```

- LogIn from windows **WITHOUT** password

```
Cristian@DESKTOP-PM304DL MINGW64 ~
$ ssh -p 2222 cris@127.0.0.3
Last failed login: Sat Apr  9 22:46:00 UTC 2022 from 10.0.2.2 on ssh:notty
There were 3 failed login attempts since the last successful login.
Last login: Sat Apr  9 22:43:55 2022
[cris@fedora35 ~]$
```

Docker Installation

- Install all the required for docker installation

✓ sudo dnf -y install dnf-plugins-core

```
Installed:
  kernel-5.16.18-200.fc35.x86_64                 kernel-core-5.16.18-200.fc35.x86_64
  kernel-devel-5.16.18-200.fc35.x86_64           kernel-modules-5.16.18-200.fc35.x86_64
  openssl-pkcs11-0.4.11-4.fc35.x86_64

Complete!
[cris@fedora35 ~]$
```


✓ sudo dnf config-manager \ --add-repo \ https://download.docker.com/linux/fedora/docker-ce.repo

```
[cris@fedora35 ~]$ sudo dnf config-manager \
>     --add-repo \
>     https://download.docker.com/linux/fedora/docker-ce.repo
Adding repo from: https://download.docker.com/linux/fedora/docker-ce.repo
[cris@fedora35 ~]$
```

- Install docker, consider that it creates a docker group by default

✓ sudo dnf install docker-ce docker-ce-cli containerd.io

```
Installed:
  container-selinux-2:2.181.0-1.fc35.noarch          containerd.io-1.5.11-3.1.fc35.x86_64
  docker-ce-3:20.10.14-3.fc35.x86_64                 docker-ce-cli-1:20.10.14-3.fc35.x86_64
  docker-ce-rootless-extras-20.10.14-3.fc35.x86_64   docker-scan-plugin-0.17.0-3.fc35.x86_64
  fuse-common-3.10.5-1.fc35.x86_64                   fuse-overlayfs-1.7.1-2.fc35.x86_64
  fuse3-3.10.5-1.fc35.x86_64                         fuse3-libs-3.10.5-1.fc35.x86_64
  libcgroup-2.0-3.fc35.x86_64                        libslirp-4.6.1-2.fc35.x86_64
  slirp4netns-1.1.12-2.fc35.x86_64

Complete!
[cris@fedora35 ~]$
```

- Add user to docker group and start docker

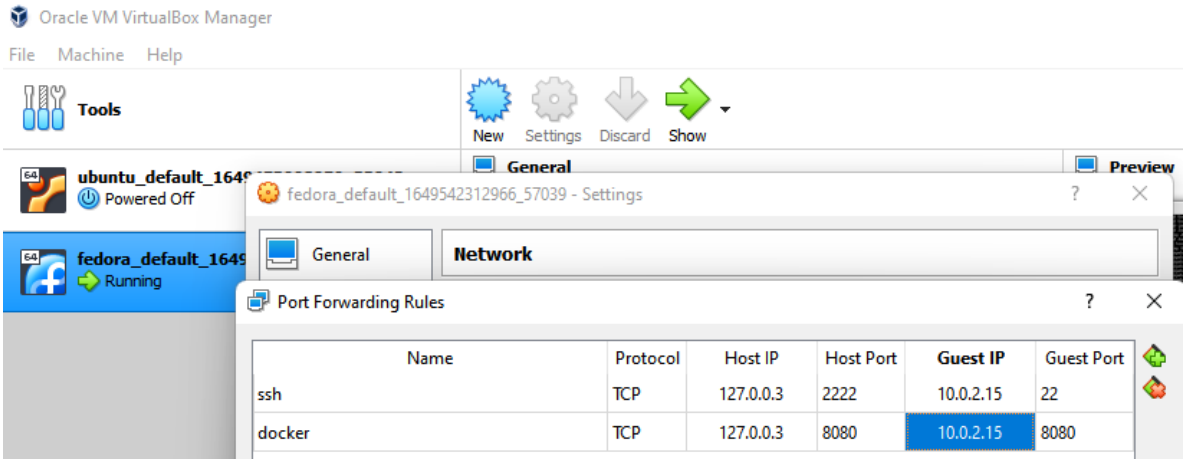
✓ sudo usermod -a -G docker $USER
✓ sudo systemctl start docker

- Pull Jenkins image

✓ sudo docker pull jenkins/jenkins

```
[cris@fedora35 ~]$ sudo docker pull jenkins/jenkins
Using default tag: latest
latest: Pulling from jenkins/jenkins
dbba69284b27: Pull complete
6d9832bff3ec: Pull complete
7c4a6d582917: Pull complete
ae0899c462a8: Pull complete
8a5edbfff1d1: Pull complete
c780f68adf6d: Pull complete
bdd8fb65d9ef: Pull complete
b64349c106a9: Pull complete
e0e3e2500574: Pull complete
83242c04be1c: Pull complete
ecfa4c67cc7b: Pull complete
14e81afa2cd2: Pull complete
a15019ddfe0a: Pull complete
ec7f41b7f300: Pull complete
0a15abba86c8: Pull complete
31f7e553bb6b: Pull complete
3a863afeb78b: Pull complete
Digest: sha256:854af743c459e0102a19fb314396b7fb92c338810b74ddff4dc613076cc317a8
Status: Downloaded newer image for jenkins/jenkins:latest
docker.io/jenkins/jenkins:latest
```

- Map virtual machine ports as follows

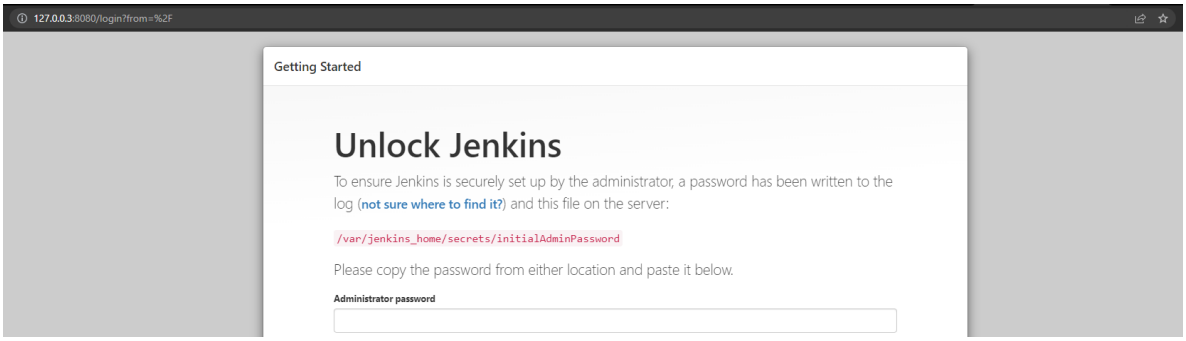


- Launch jenkins using docker

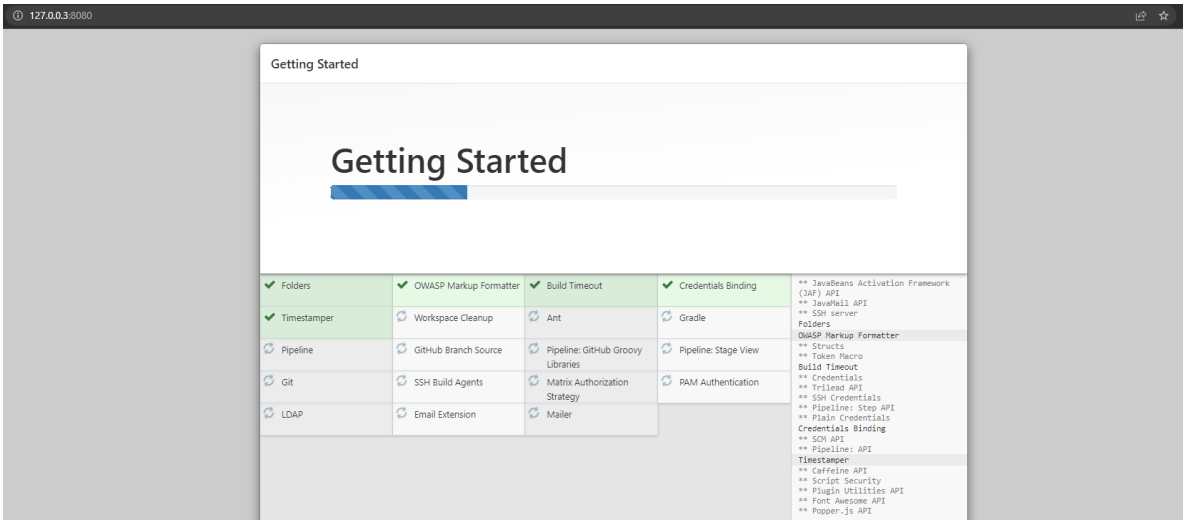
✓ sudo docker run -p 8080:8080 --name=jenkins-master jenkins/jenkins

```
*************************************************************
*************************************************************
*************************************************************

Jenkins initial setup is required. An admin user has been created and a password generated.
Please use the following password to proceed to installation:

ccab65791a244ce993e012d3a64fd47e

This may also be found at: /var/jenkins_home/secrets/initialAdminPassword

*************************************************************
*************************************************************
*************************************************************
```

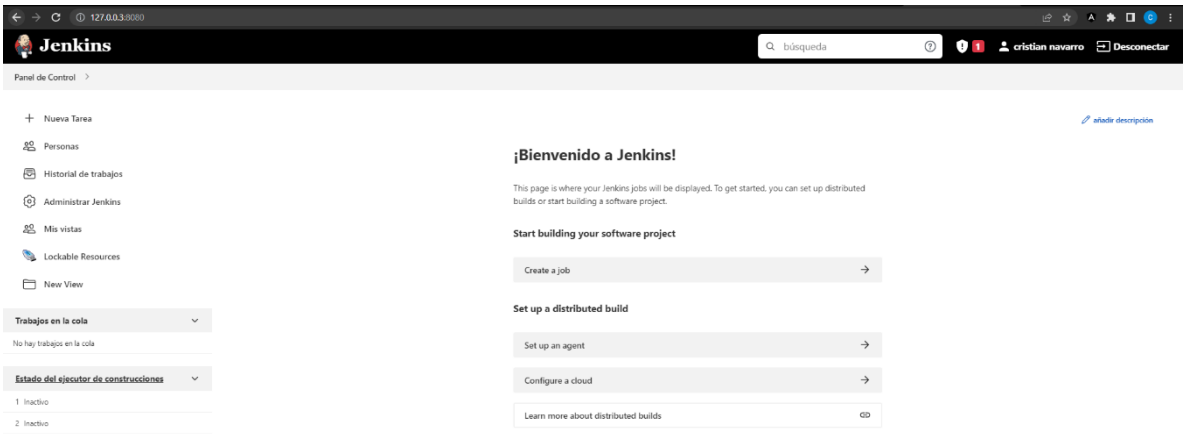
- Access through browser using IP and port mapped, 127.0.0.3:8080



- Use the password provided and install the suggested plugins



- Create the new user and access to main page



Commands for docker:

Container ID docker ps -aq

Stop Container docker stop container-id

Start Container docker start container-id

Check Container logs docker logs container-id

Delete a Docker Image docker rmi container-id

Instead of container id, container name can be used