**jenkins**

**steps**

1. **create 2 EC2 instance with t2.medium. 1 master and 1 slave**

**sudo yum update -y**

**sudo wget -O /etc/yum.repos.d/jenkins.repo** [**https://pkg.jenkins.io/redhat-stable/jenkins.repo**](https://pkg.jenkins.io/redhat-stable/jenkins.repo)

**sudo rpm --import** [**https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key**](https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key)

**sudo yum upgrade**

**sudo yum install java-17-amazon-corretto -y**

**sudo yum install jenkins -y**

**sudo systemctl enable jenkins**

**sudo systemctl start jenkins**

**sudo systemctl status jenkins**

1. **1.sh**

**#!/bin/bash**

**pkgName=${1}**

**userId=$(id -u)**

**if [[ $# -ne 1 ]]; then**

**echo "Please pass input as some package name."**

**exit 1**

**fi**

**if [[ ${userId} -ne 0 ]]; then**

**echo "You are not the root user. Please run this script as root."**

**exit 2**

**fi**

**if command -v ${pkgName} >/dev/null 2>&1; then**

**echo "Your package ${pkgName} is already deployed."**

**else**

**if [[ "${pkgName}" == "jenkins" ]]; then**

**wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo**

**rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key**

**yum upgrade**

**yum install -y java-17-amazon-corretto # Install Java without prompt**

**yum install -y ${pkgName} >/dev/null 2>&1**

**yumExitSt=$?**

**if [[ ${yumExitSt} -eq 0 ]]; then**

**sudo systemctl enable jenkins**

**sudo systemctl start jenkins**

**echo "${pkgName} Package is installed successfully and ${pkgName} service started ."**

**else**

**echo "Installation failed."**

**fi**

**else**

**read -p "Required to install ${pkgName}. Do you want to proceed? (y/n): " confirm**

**case $confirm in**

**y|Y)**

**yum install -y ${pkgName} >/dev/null 2>&1**

**yumExitSt=$?**

**if [[ ${yumExitSt} -eq 0 ]]; then**

**echo "${pkgName} Package is installed successfully."**

**else**

**echo "Installation failed."**

**fi**

**;;**

**n|N)**

**echo "Not installing."**

**;;**

**\*)**

**echo "Invalid input. Please enter 'y' or 'n'."**

**;;**

**esac**

**fi**

**fi**

1. **chmod +x 1.sh**
2. **./1.sh jenkins**
3. **in slave,**

**sudo yum install -y java-17-amazon-corretto**

1. **ipmaster:8080**

**node configure**

**Host:<slaveprivateip>**

**directory:/home/ec2-user**

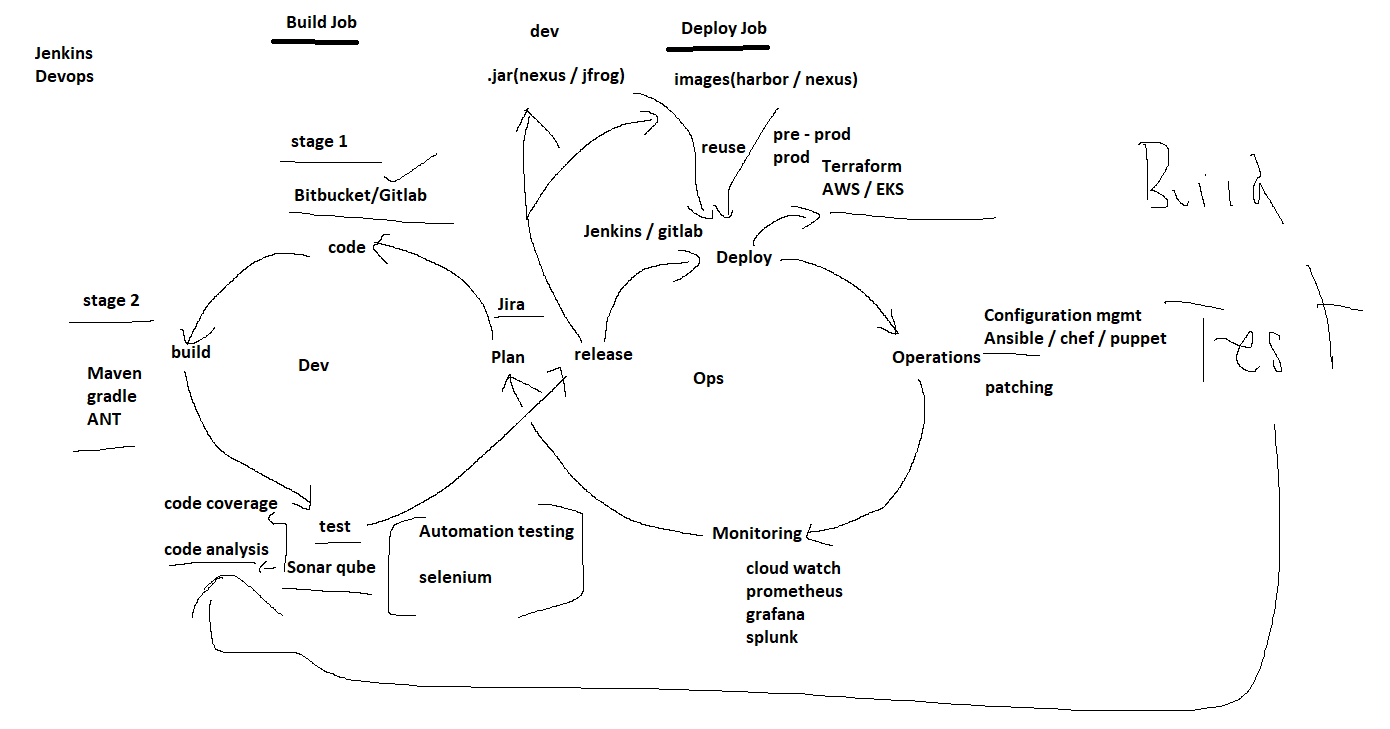
**SSH with username**

**nov04.pem, open in notepad, copy and paste it.**

**non verification strategy.**

**cat /var/lib/jenkins/secrets/initialAdminPassword**

Devops Basic Arch:

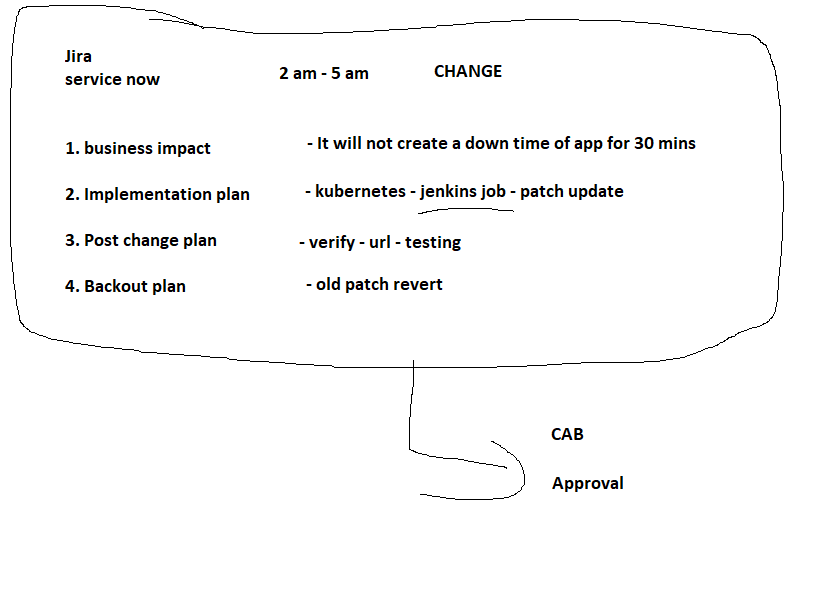


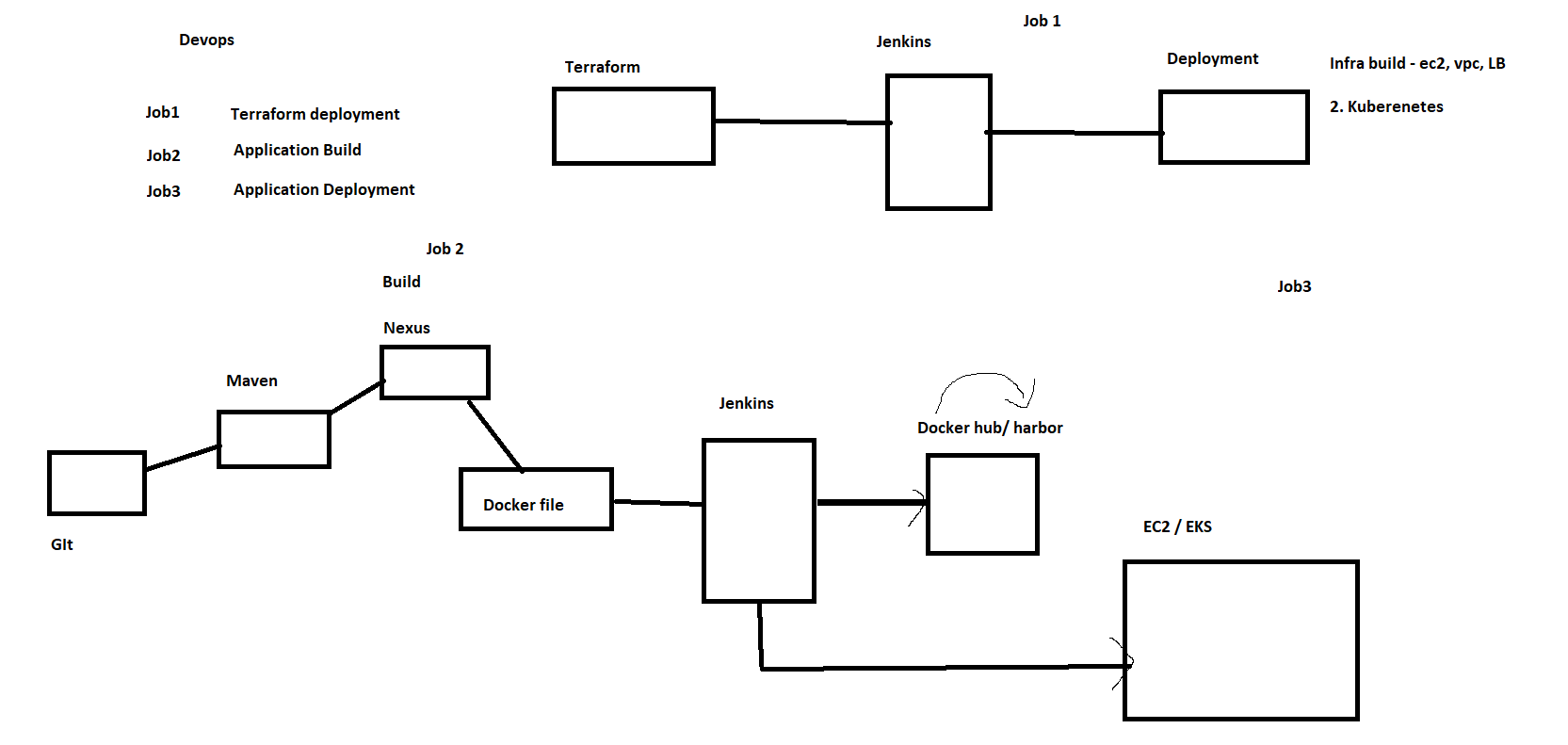
Jira:

Epic

Story

Task



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**Jenkins: CI and CD**

* 2011 - hudson - rename jenkins
* It’s a web application developed using Java
* It is an Open source tool

**Jenkins Architecture:**

**Plugin Management :**

gives options to use them to connect a specific tools for our application (Git/maven)

**Node Configuration:**

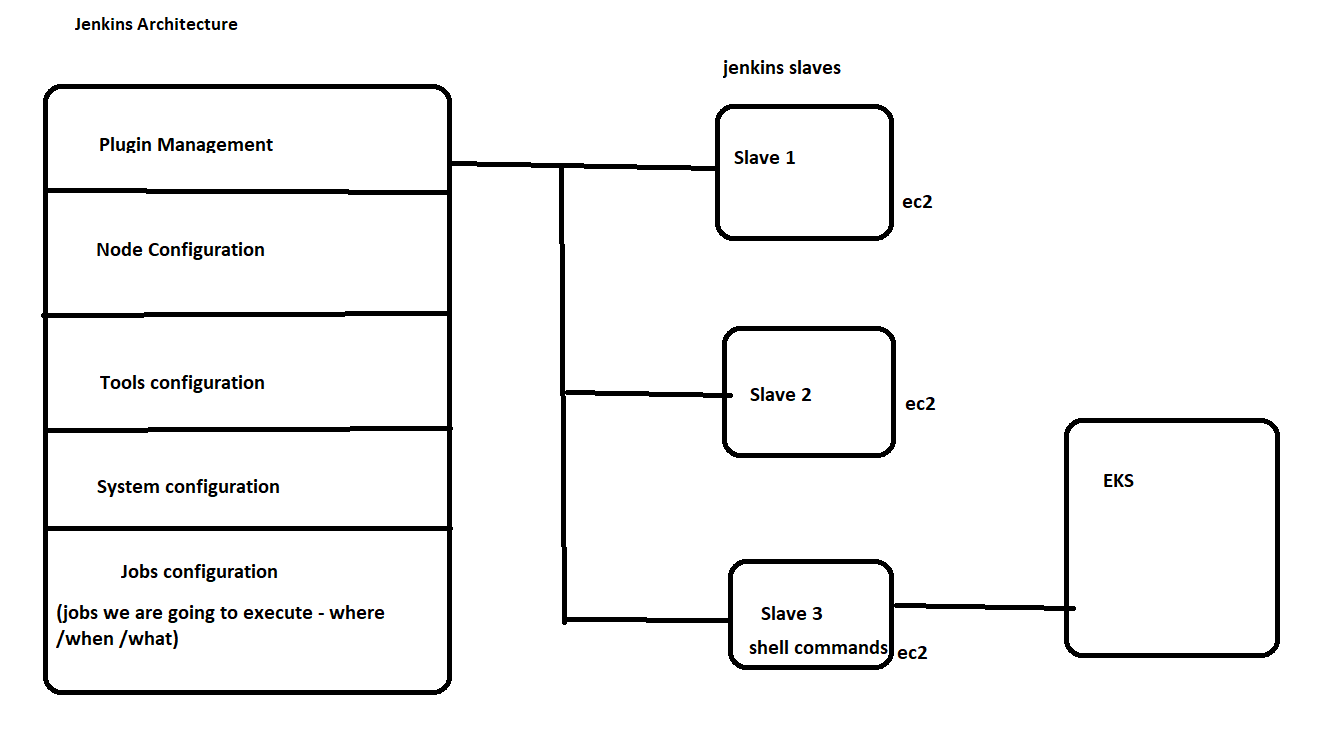
To tell jenkins which servers to connect (slaves)

**Tools Configuration: (application related URLs)**

to give the tools location in jenkins to execute the jobs (URLS). (Git, maven, sonarqube, docker, kubernetes, nexus etc)

**System configuration: (Master - Configure system)**

To run jenkins we need some set of configuration so that can be defined in System configurations (environmental variables).



**Job Configuration:**

what job we are going to execute that can be defined in job configurations.

patches, software release, agents schedulers

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**Jenkins features:**

1. when we tell jenkins to run a task on a particular server , if that server is not available it may execute to other machines in the group but once the server is back online it will push the codes
2. if we didn’t specify any slave nodes for the job build jenkins by default it will execute in master node
3. replace CRON by using jenkins
4. It runs multiple jobs and captures all the **console output** as a job history
5. Pipeline

* commit
* build
* test
* deploy

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**java 11 install on amazon linux:-**

sudo yum update -y

sudo rpm --import https://yum.corretto.aws/corretto.key

sudo curl -L -o /etc/yum.repos.d/corretto.repo https://yum.corretto.aws/corretto.repo

sudo yum install -y java-11-amazon-corretto

java -version

**Practicals: steps to follow**

Create 2 Ec2 instance(amazon linux2) 1 - master , 1 - slave

**enable 8080 in security group!**

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**Master Slave preparation:**

**nodes-- amazon linux 2:**

**systemctl edit jenkins --full**

**here, you can change the port.**

**systemctl restart jenkins**

**Step1:**

Amazon linux2

Make sure that port 8080 is enabled in the Security group:

sudo -i

yum update -y

yum install java -y

wget -O /etc/yum.repos.d/jenkins.repo <https://pkg.jenkins.io/redhat-stable/jenkins.repo>

rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key

yum install jenkins -y

systemctl start jenkins

systemctl enable jenkins

sudo wget -O /usr/share/keyrings/jenkins-keyring.asc https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key

sudo yum update –y

sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo

sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key

sudo yum upgrade

sudo dnf install java-17-amazon-corretto -y

sudo yum install java-17-amazon-corretto -y

sudo yum install jenkins -y

sudo systemctl enable jenkins

sudo systemctl start jenkins

sudo systemctl status jenkins

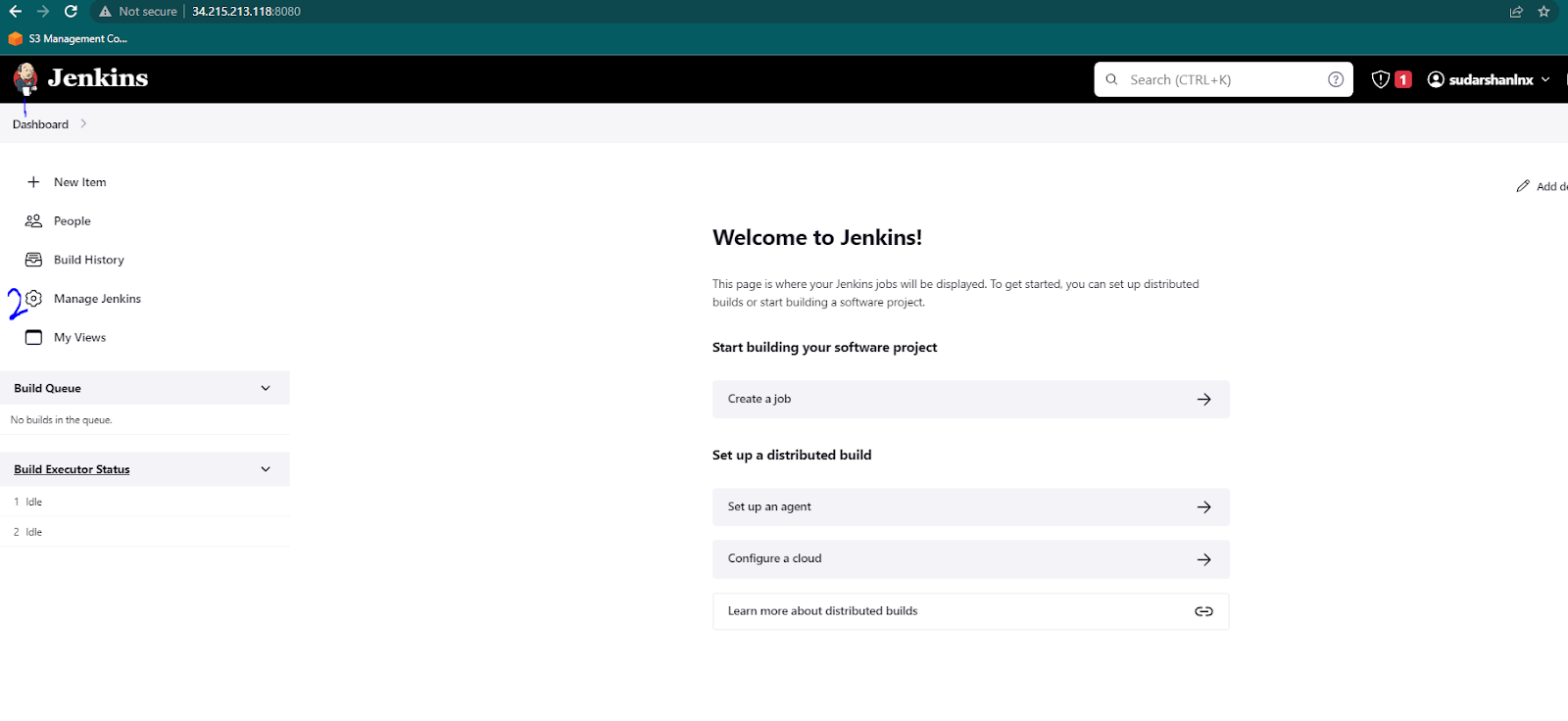
cat /var/lib/jenkins/secrets/initialAdminPassword

amazon-linux-extras install java-openjdk11 -y - - - --(for slave)

now login to jenkins URL:

<http://34.215.213.118:8080/>

cat /var/lib/jenkins/secrets/initialAdminPassword



**Step2:**

**Master preparation to connect to slave: and slave**

useradd ramadm

passwd ramadm

vi /etc/sudoers

root ALL=(ALL) ALL

ramadm ALL=(ALL) NOPASSWD: ALL

vi /etc/ssh/sshd\_config

* PasswordAuthentication yes

systemctl restart sshd

**su -** ramadm

exit

sudo -i

exit

exit

**Slave using centos 7**

sudo yum update -y

sudo yum install java-11-openjdk-devel -y

**Step3:**

**Slave node-- amazon linux 2:**

sudo -i

yum update -y

amazon-linux-extras install java-openjdk11 -y

**check the version by using**

java -version

if it is not 11 then change it using the below command!

update-alternatives --config java

##choose version 11

useradd ramadm

passwd ramadm

vi /etc/sudoers

kumaradm ALL=(ALL) NOPASSWD: ALL

vi /etc/ssh/sshd\_config

* PasswordAuthentication yes

systemctl restart sshd

ip a

**Step4:**

**Passwordless authentication from Master to Slave:**

**Master :**

su - ramadm

ssh-keygen

ls -a

cd .ssh/

ls -a

ssh-copy-id -i id\_rsa.pub ramadm@172.31.42.101 #slave ip-----ip a (.from ssh path)

optional:

or manully copy

in master,

cat ~/.ssh/id\_rsa.pub

copy the key.

in slave,

sudo su - ramadm

mkdir -p ~/.ssh

nano ~/.ssh/authorized\_keys

Paste the key. Then:

chmod 700 ~/.ssh

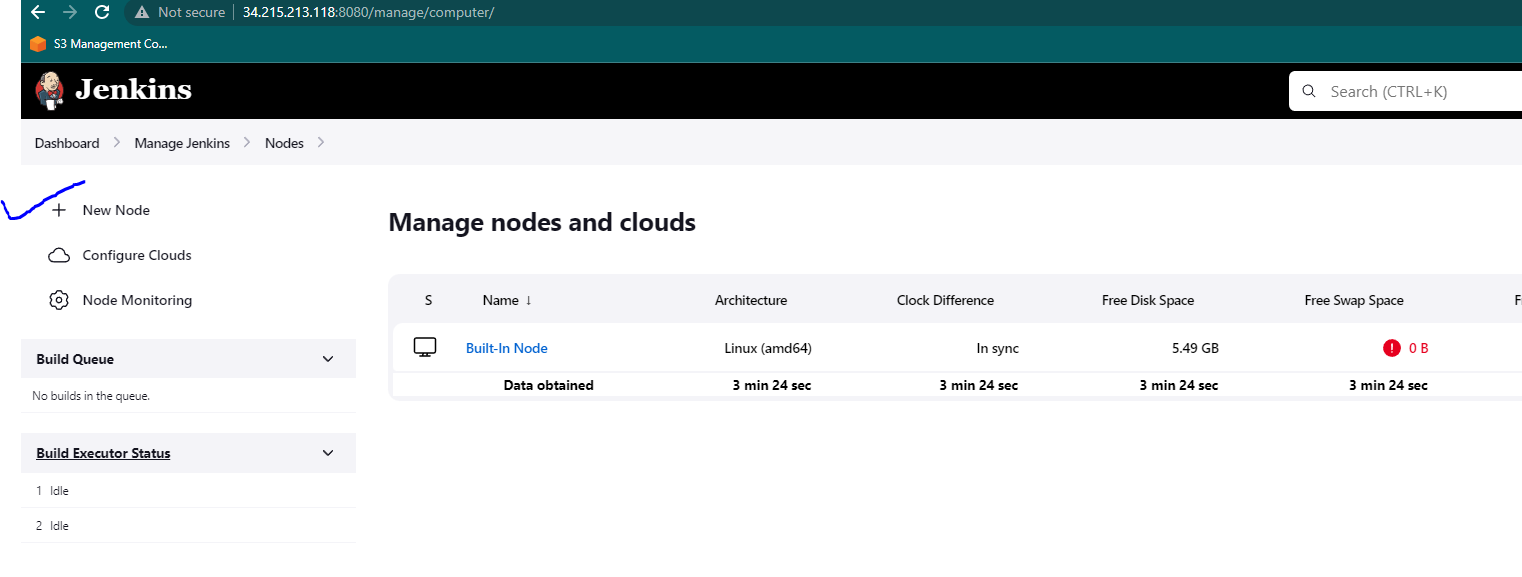
chmod 600 ~/.ssh/authorized\_keys

chown -R ramadm:ramadm ~/.ssh

ssh ramadm@172.31.7.140

**connect the slave in Master: Jenkins URL.**

* **go to jenkins dashboard -> manage jenkins -> Manage nodes and clouds**

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**Node name: slave1**

**Lable:slave**

**in slave:-**

**su - ramadm**

**mkdir /tmp/job**

**create a /tmp/job**

**Root directory: /tmp/job**

**Launch method : SSH**

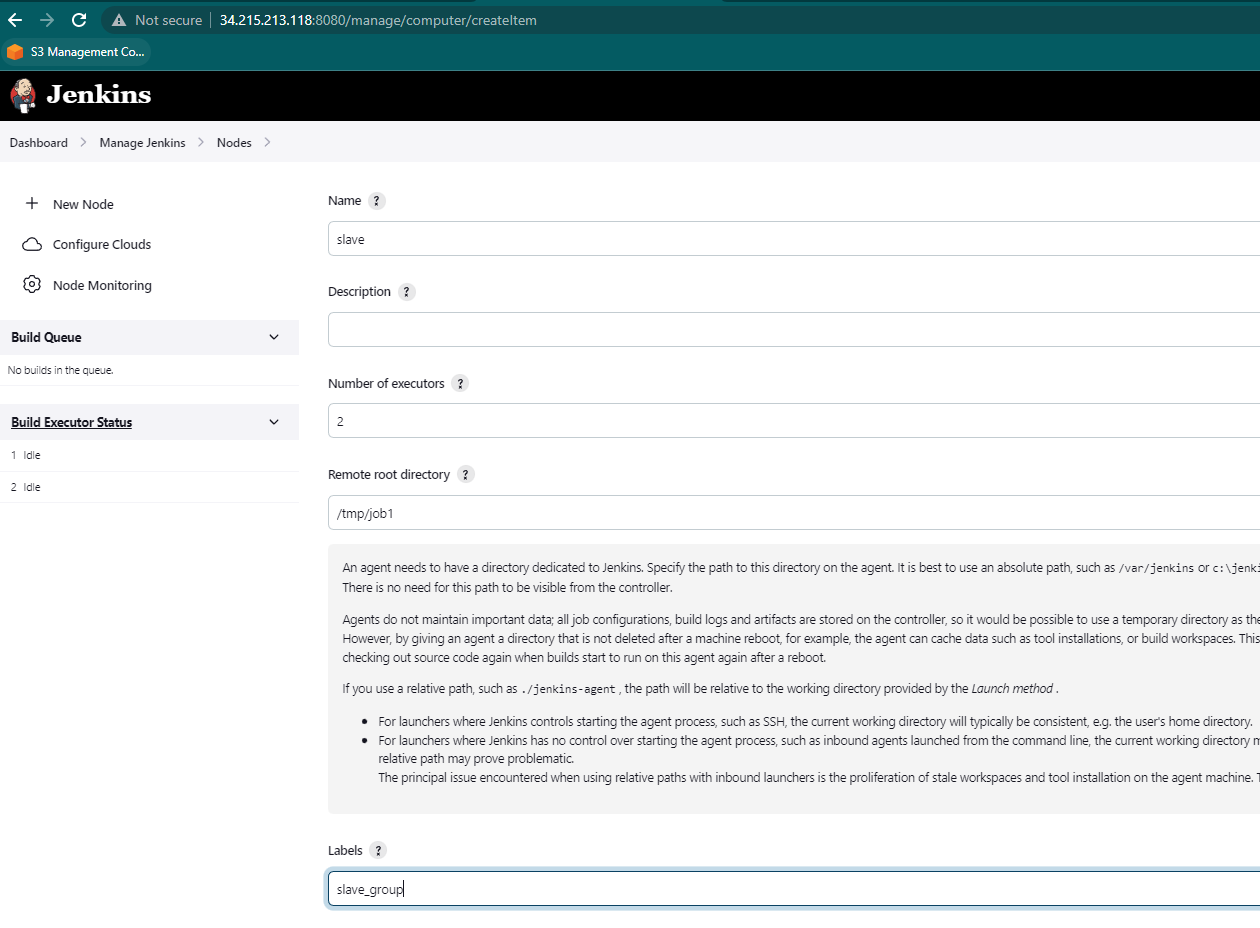
**Host : from slave ip a (privateip) and : paste ip address**

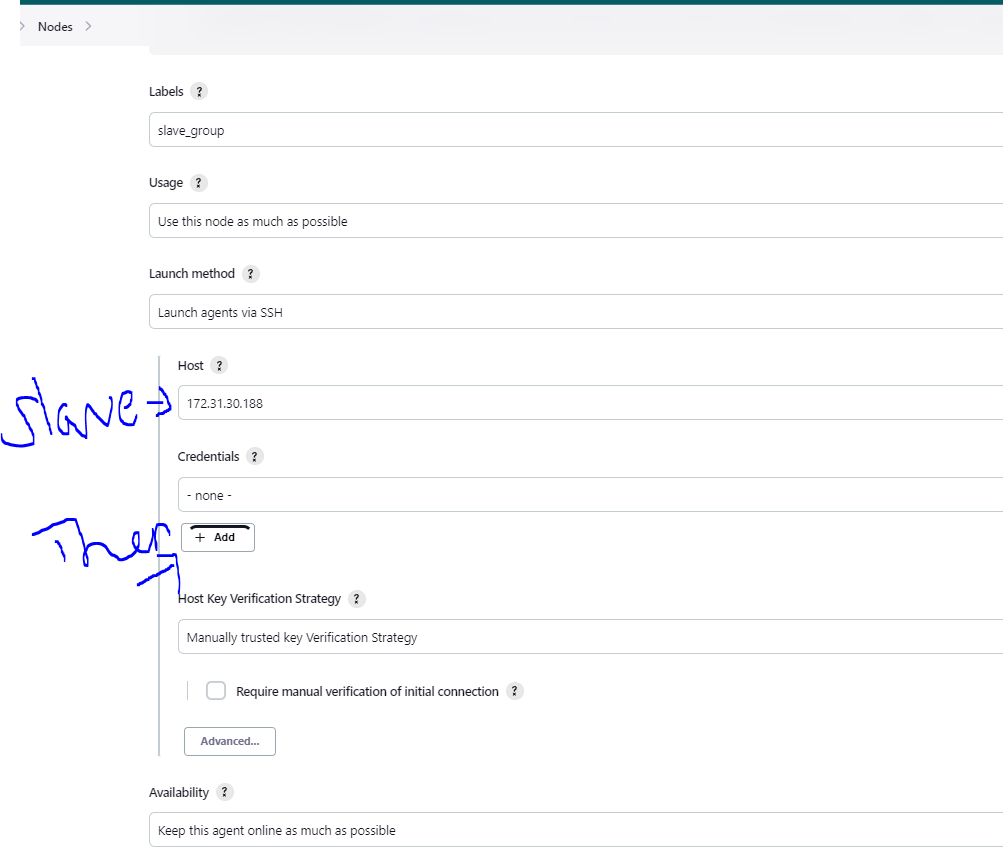
**Kind: SSH usename with private key**

**ID: our username**

**User name : our user name**

**From master user: cat id\_rsa**





add the jenkins master private key! “id\_rsa”

exit

SSH username private key

ID: ramadm (username)

Username: ramadm (username)

cat id\_rsa # from master node user

key: add

-----BEGIN RSA PRIVATE KEY-----

MIIEpQIBAAKCAQEApb7vAuV/l1YivIcaVTDQN+isKLFAdSReYtTBPXWv/fHWcqRV

l0xiJgt7yPQXkX/g5UGawu8L35+n4hRsxhvhmI1WKw+ueDw42+jysRW+vnAsZPzw

hbgCP+H0M3Rt5QupCdbbAhGRco1Yq0qB+QjfPzSpugVByqj+GrY5a/dqNti+033t

yqNAi06DWONyLiDEGHhsnCv8zGiz5Seem8YiXTMqtt5Xlp6kfa7C6vXbkaJer9i0

VazI1Gpt81g0K/B2SmlDbbtlMBAFommAsPE7eP4NE1A+1tCHRlF2HnVh6bT7tDzV

AX8XGKAFcdabz9Vxee+Jca2fKUHWqky9mii9gwIDAQABAoIBAQCEnOP3WVBg8ZYR

abdz+f5e/VbhqBB+qX6rbLbASe1qLZj7WOjyiTbuYbnE6ygATmTOiVMeLM0/OyrE

BLuTNrOlr1AGXCGoKecEbLnhXhijnnSmyIpZMwT5v/v3P2y+GjpBmRrZ6NyK3vTW

+GJNsv+MPsKeB57AW74T+UCwVeExx6dixsS+WAYBtdgGGJ+NxjLIyi1t2K8ORggy

2FLHDWSsz5oIyh1RhGEaICeXiKXhdN62UwRMloKVp5ZC5P3guM62BDEcamkfm6dJ

fABzmA8yrxSI0E+Uy/dPG9zQPMdka7lSpA7depwouhUKftSTTSbOYQfd+pPLL5xG

FHC8omsBAoGBANyDXCTSVzoJJL/eC/IvgGkt9oIvbSAJB3WZkQgTIbgF6c2w8+Dd

AcQlQX2g8G9T7gheGdAbplsLUEqQwIbwmZJ+AOzYGdpIXxuE/zs87DzmrlOeujwY

0az/OSybJ1GQSdmViZdJQuIGOfQNHh8VncV2i9W6axKenziaf0RF7WHhAoGBAMBr

SSMvvB4hKlxKi2OboKU1KRbGKBPvvlLuxDLm7OMiSOF7xSJnCag/RJWSlpJeu7zZ

JfhS0Au7V+hRkTV+aCzmTsySuT4l3cHrZ+sds2PzUXdfCrYlTcle2HzaYAMuYcBF

Lyl7BoPpdLSrQisMbJ+Eal6sfN9GhcHAb18dz1PjAoGBAL01NVYe6VtRxyeedi+b

VJprJs3ztbW8KZtdZhVAnTkSUdf9UnUKDV7o/LW35zYPFPo3C/0GDIqoPX+NjrT6

MzuARHj0v9INMRYi2wFQN//Vi5USaAfy386Ju9wrUORqYwOAjOuzn+DiqM1giAzx

9ksdecSszPzQAByIbFT/jzzhAoGBAIkXpzs3llsNHCY3QkqMpg8u6gB83C8gH8Ts

ssLlfp9xXOWyDkktilbiBNZgY4ETl8S8He5n6iyBpOczvjaTwltDF59vZiXeSroQ

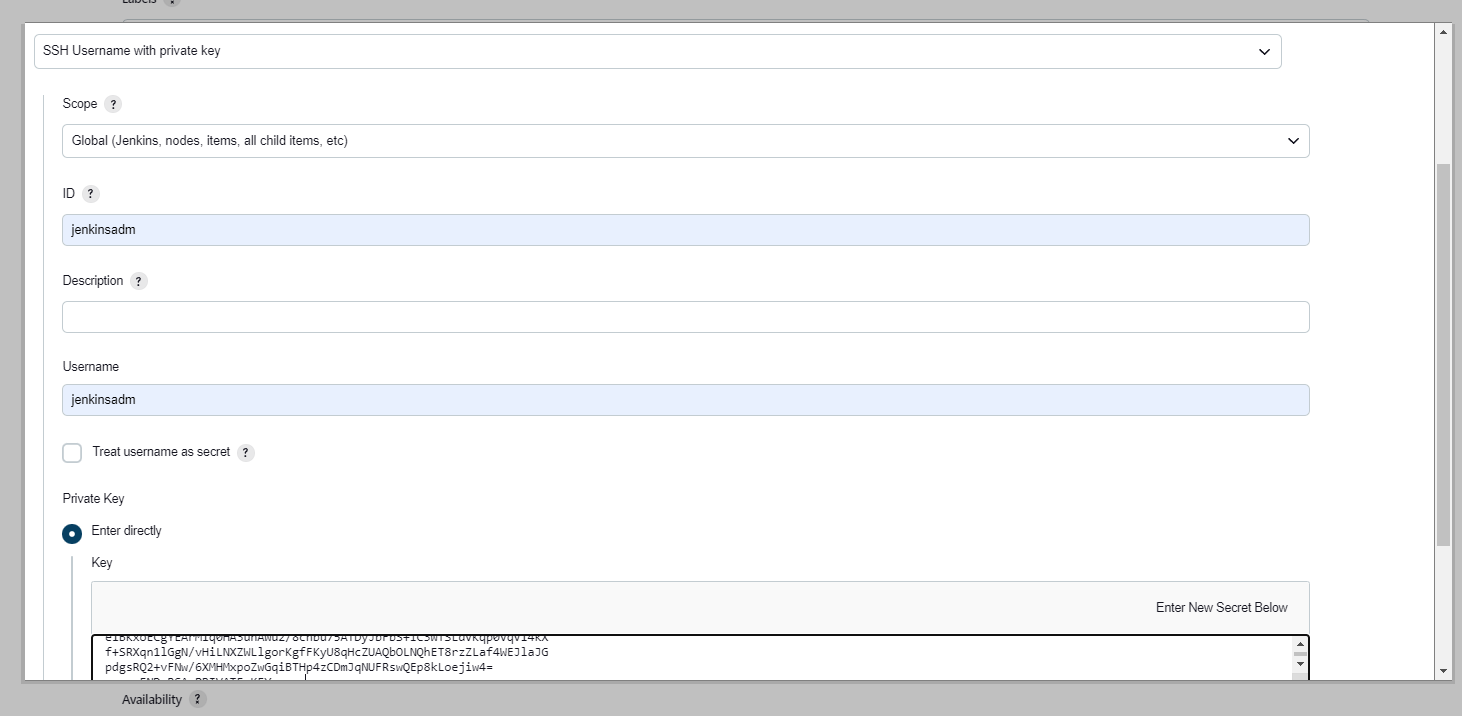
I7EDLz2mLUPUZkhSGbLALZP+7ms1z5VydWCjc4fmfC0A25raNkYMzNB5KlrV3xSl

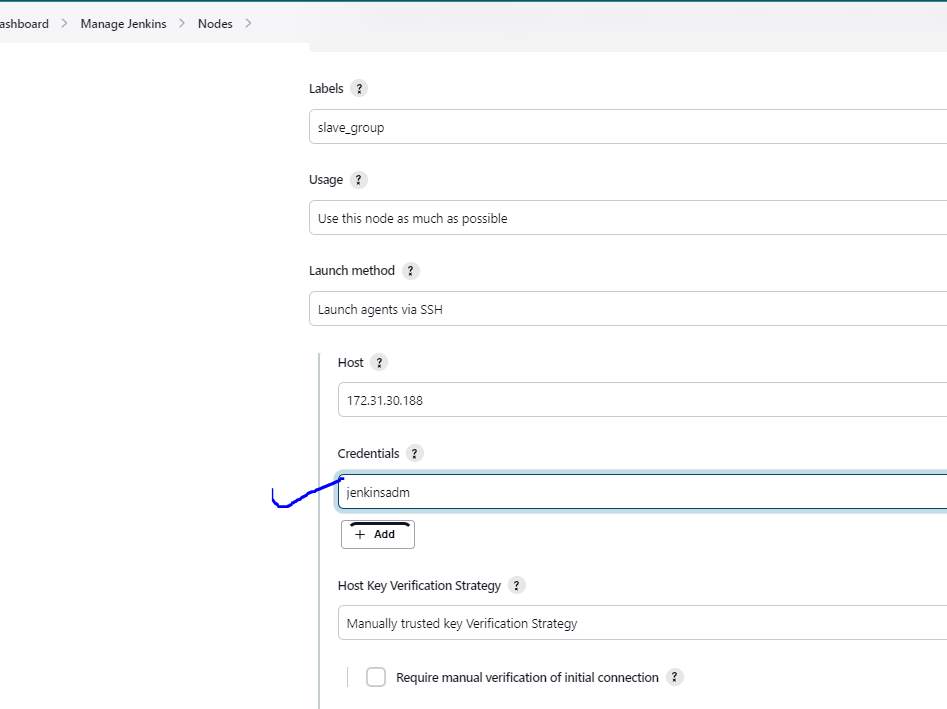
K3RkQ8QrAoGAWdUHYbILjbaJIqZzSsUoG+GpISEni93WLBGOk59KNZ2IRFV5ztSn

EaPbrkTGocEr5xz1XJdjH4rrz97YZxb/2eefkgGYoK9CjIN3DonVqkb+rZr4Qstc

Zu0qBsVxhGUpT5ETTCUTeufr1cD5YGiJ7I4voAAKXLBKuU7h69Js1xE=

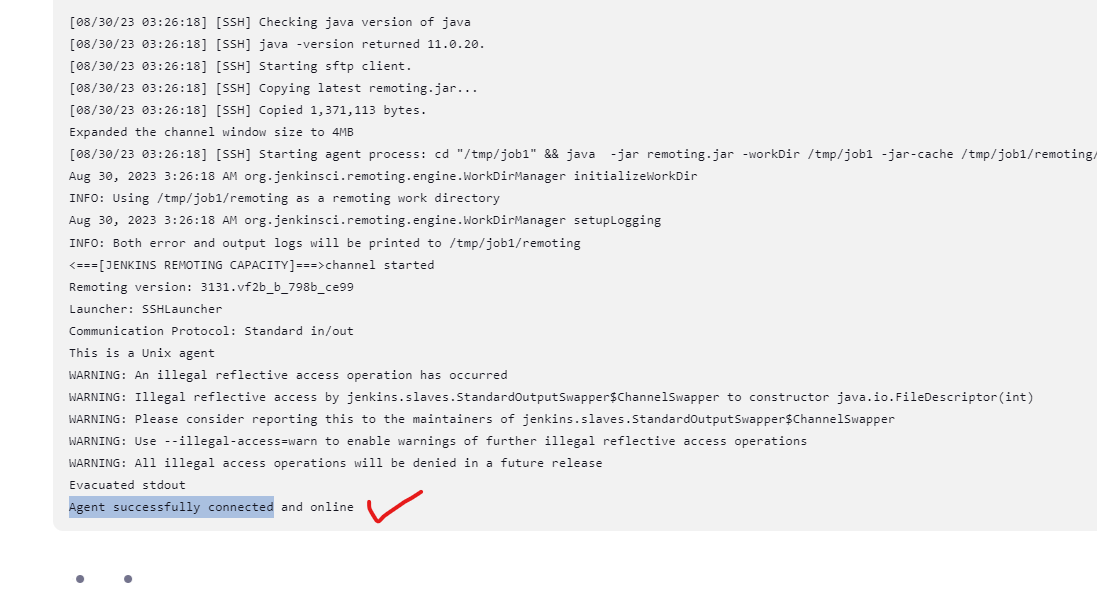
-----END RSA PRIVATE KEY-----





Finally the agent should show connected output:

Click on logs



xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Run job:

* create a freestyle job for slave1
* Restrict the job for the slave group—slave(group)
* using shell to execute the commands
* use “build now” to build it

add build

put some command

#!/bin/bash

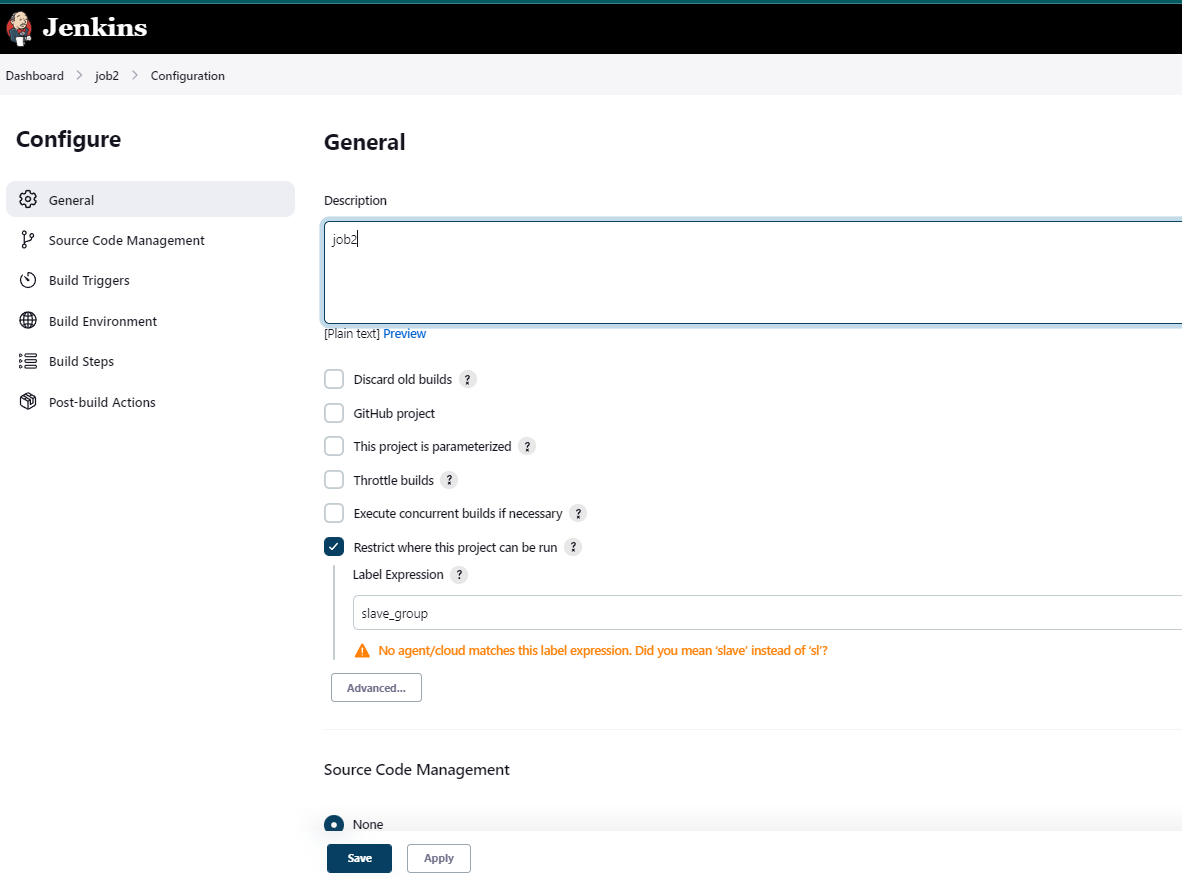
sudo mkdir /rajini

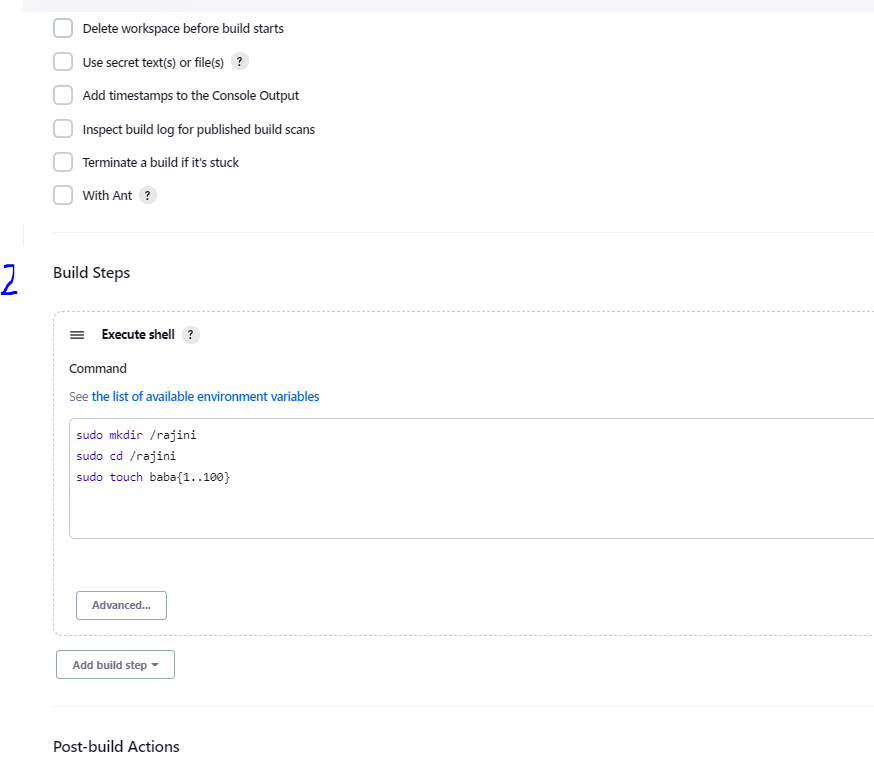
sudo touch /rajini/file{1..100}

sudo date

sudo df -h

save and click on build now.





chown jenkinsadm:jenkinsadm /raju