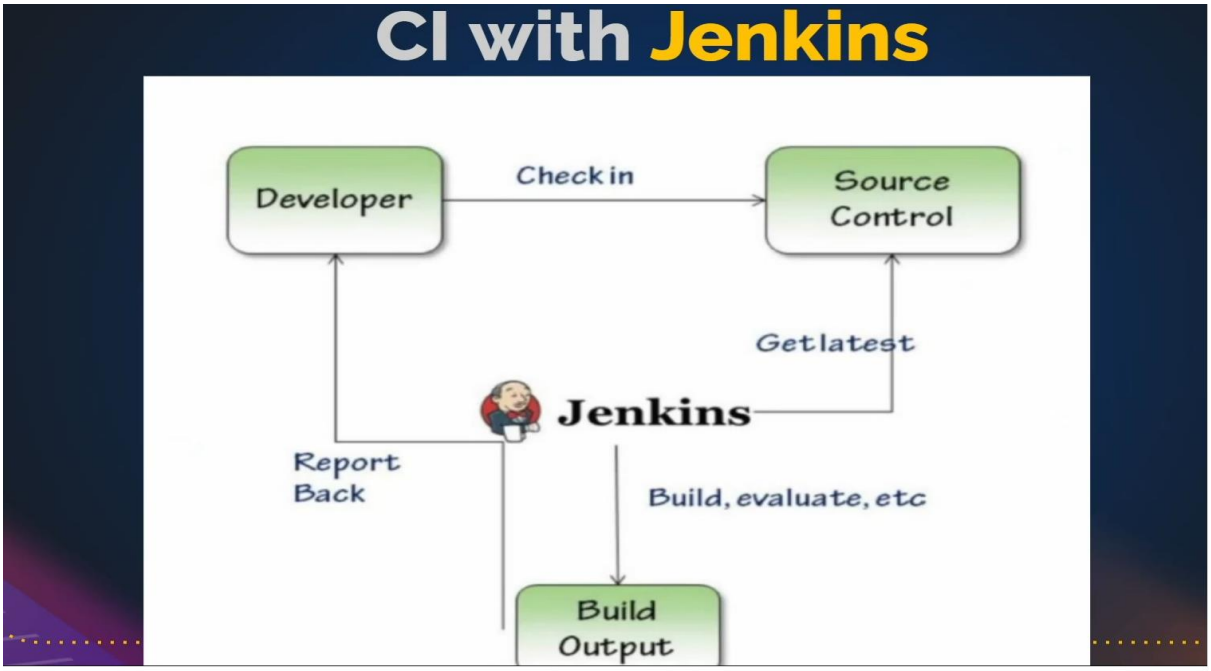
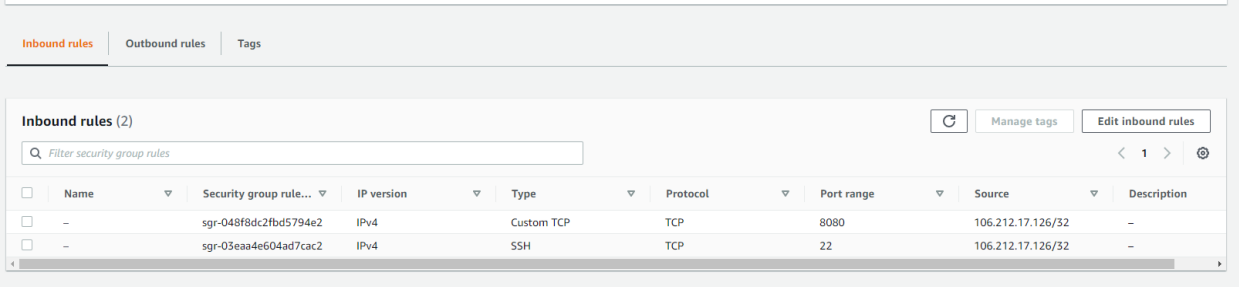
Continuous Integration with Jenkins

This project scope explains the process of setting up jenkins server, pulling source code from git hub, configure maven in jenkins to generate build. The build can be generated with the parameter as well.

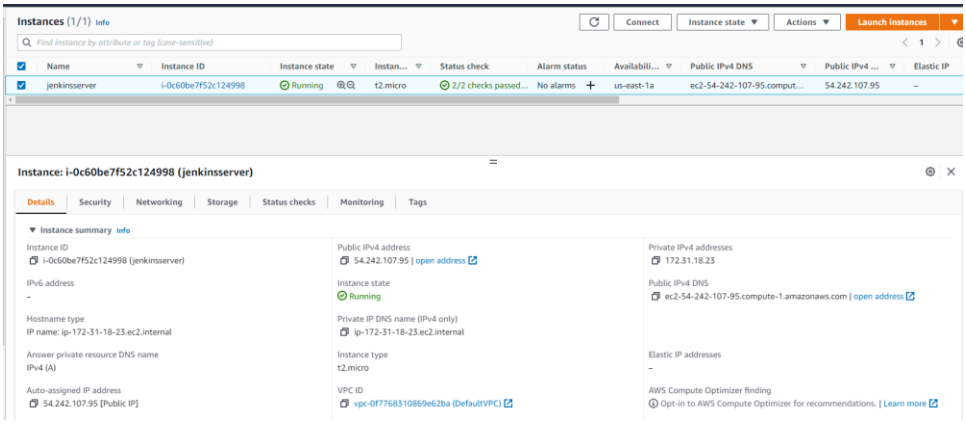


1. Create a security group which allows ssh from local, and allows on port 8080



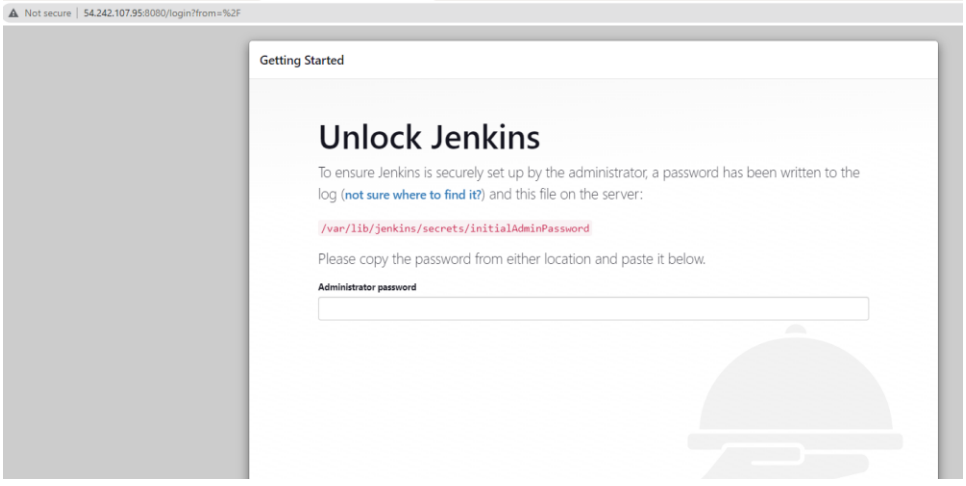
And create access key for login EC2 instance.

2. Create a EC2 instance with the below user data,



#!/bin/bash
sudo apt update
sudo apt install openjdk-11-jdk -y
**curl -fsSL https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo tee **
/usr/share/keyrings/jenkins-keyring.asc > /dev/null
**echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] **
**https://pkg.jenkins.io/debian-stable binary/ | sudo tee **
/etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins –y

3. We can see jenkins running on th e port 8080,



4. Connect to Jenkins server from local bash using the key.

```
satzw@LAPTOP-C4RG1671 MINGW64 /e/devops/Jenkins
$ ssh -i jenkins-key.pem ubuntu@54.242.107.95
The authenticity of host '54.242.107.95 (54.242.107.95)' can't be established.
ED25519 key fingerprint is SHA256:oCHbTBMGJzJ11JSfWZquCoSSjuIP1T4H/puIrxhx7Go.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '54.242.107.95' (ED25519) to the list of known hosts.
Welcome to Ubuntu 20.04.5 LTS (GNU/Linux 5.15.0-1019-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Fri Sep 30 10:19:18 UTC 2022

  System load:  0.0               Processes:             99
  Usage of /:   33.3% of 7.57GB   Users logged in:       0
  Memory usage: 50%               IPv4 address for eth0: 172.31.18.23
  Swap usage:   0%
```

5. Check jenkins is running,

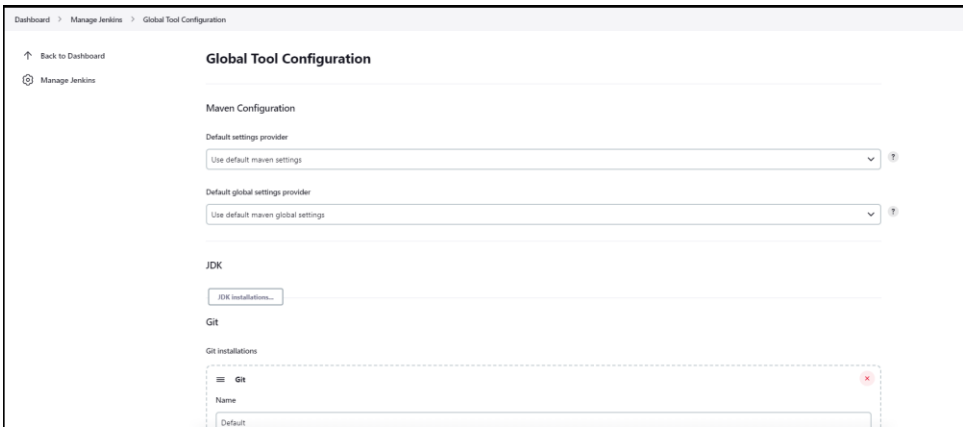
```
ubuntu@ip-172-31-18-23: ~
ubuntu@ip-172-31-18-23:~$ systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
     Loaded: loaded (/lib/systemd/system/jenkins.service; enabled; vendor prese>
     Active: active (running) since Fri 2022-09-30 08:50:32 UTC; 1h 42min ago
   Main PID: 5216 (java)
      Tasks: 38 (limit: 1143)
     Memory: 315.3M
     CGroup: /system.slice/jenkins.service
             └─5216 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java>

Sep 30 08:50:32 ip-172-31-18-23 systemd[1]: Started Jenkins Continuous Integrat>
Sep 30 08:50:32 ip-172-31-18-23 jenkins[5216]: 2022-09-30 08:50:32.312+0000 [id>
Sep 30 08:50:32 ip-172-31-18-23 jenkins[5216]: 2022-09-30 08:50:32.313+0000 [id>
Sep 30 08:50:32 ip-172-31-18-23 jenkins[5216]: 2022-09-30 08:50:32.324+0000 [id>
Sep 30 08:59:21 ip-172-31-18-23 jenkins[5216]: 2022-09-30 08:59:21.955+0000 [id>
Sep 30 08:59:21 ip-172-31-18-23 jenkins[5216]: 2022-09-30 08:59:21.957+0000 [id>
Sep 30 09:59:21 ip-172-31-18-23 jenkins[5216]: 2022-09-30 09:59:21.955+0000 [id>
Sep 30 09:59:21 ip-172-31-18-23 jenkins[5216]: 2022-09-30 09:59:21.958+0000 [id>
Sep 30 10:12:49 ip-172-31-18-23 jenkins[5216]: 2022-09-30 10:12:49.601+0000 [id>
Sep 30 10:12:49 ip-172-31-18-23 jenkins[5216]: 2022-09-30 10:12:49.605+0000 [id>
lines 1-19/19 (END)
```

6. Get the jenkins password from cat/var/lib/jenkins/secrets/initialAdminPassword

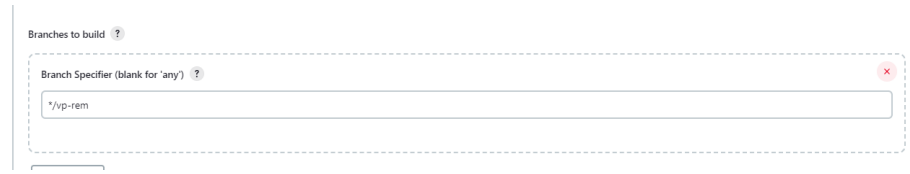
```
ubuntu@ip-172-31-18-23:~$ sudo -i
root@ip-172-31-18-23:~# cat /var/lib/jenkins/secrets/initialAdminPassword
b94c18a59fc44907a8e7df8309813b38
root@ip-172-31-18-23:~#
```

With pwd login to the jenkins portal.

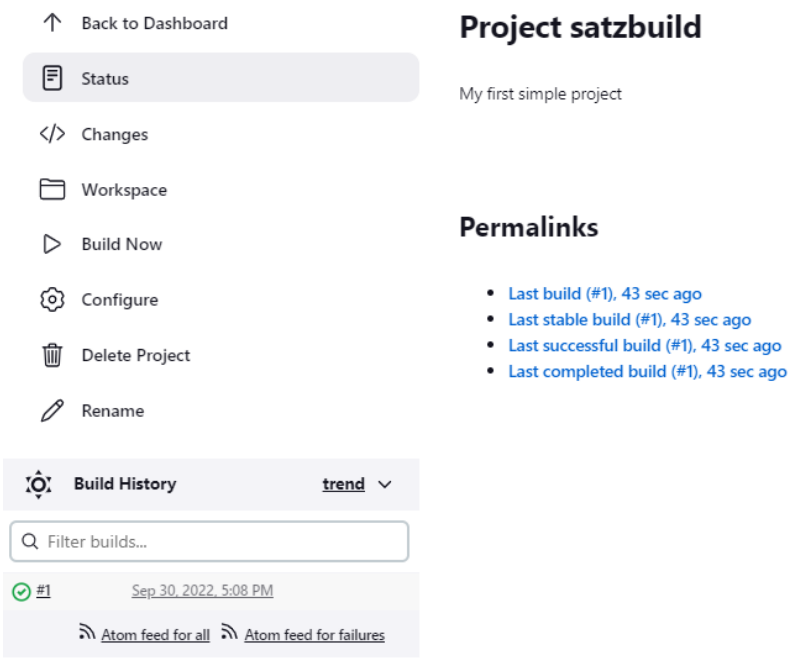
7. Update global tool configuration,
    a. Create a oracle account
    b. Select jdk8u221 and choose oracle account
    c. Select Maven 3.8.6



8. Create a new job, in a freestyle project
    a. Choose git https://github.com/satzwebio/vprofile-repo.git



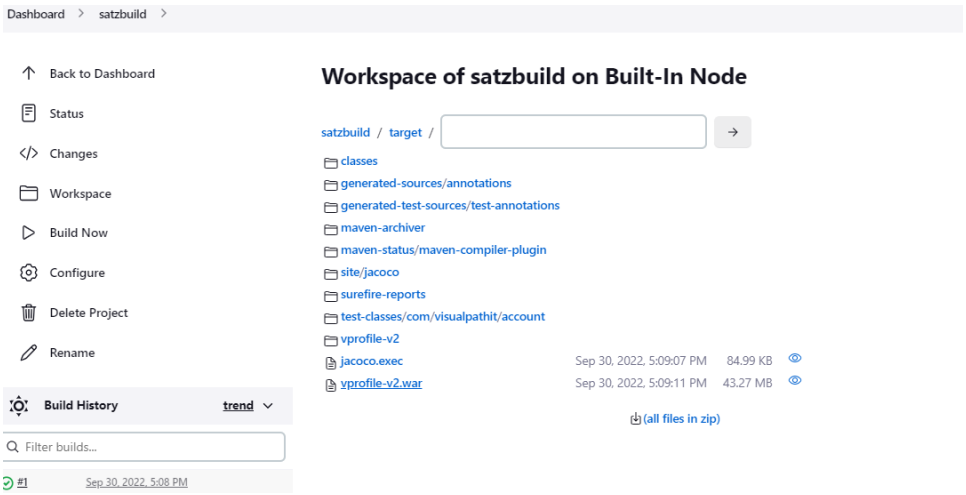
Click on Buildnow to build the job and



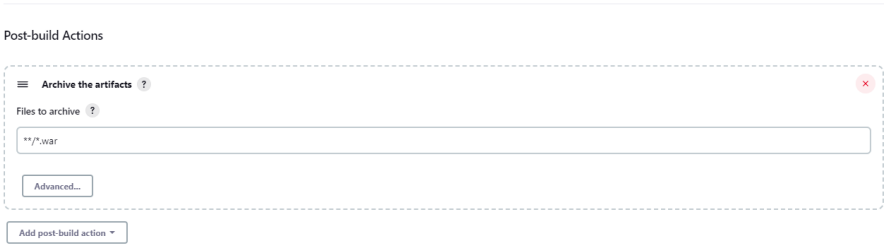
Console will show build is successfully completed

```
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utils/3.0.5/plexus-utils-3.0.5.jar (230 kB at 5.0 MB/s)
[INFO] Installing /var/lib/jenkins/workspace/satzbuild/target/vprofile-v2.war to /var/lib/jenkins/.m2/repository/com/visualpathit/vprofile/v2/vprofile-v2.war
[INFO] Installing /var/lib/jenkins/workspace/satzbuild/pom.xml to /var/lib/jenkins/.m2/repository/com/visualpathit/vprofile/v2/vprofile-v2.pom
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  28.101 s
[INFO] Finished at: 2022-09-30T17:09:12Z
[INFO] ------------------------------------------------------------------------
Finished: SUCCESS
```

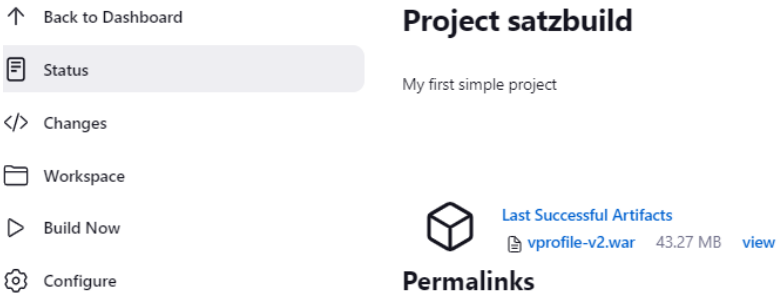
9. Workspace will show the files the job generated.



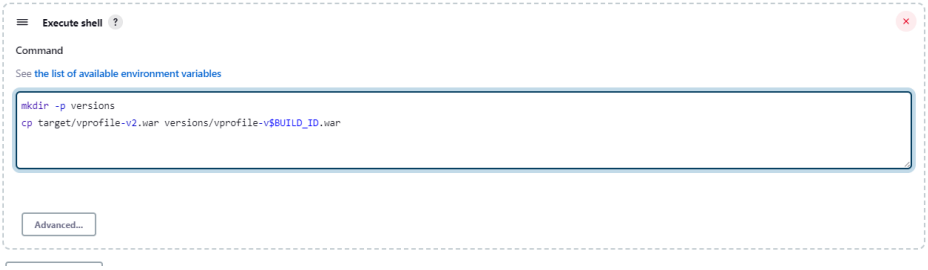
10. To archive the file that ends with .war inside any directory archive it. It in post build section.



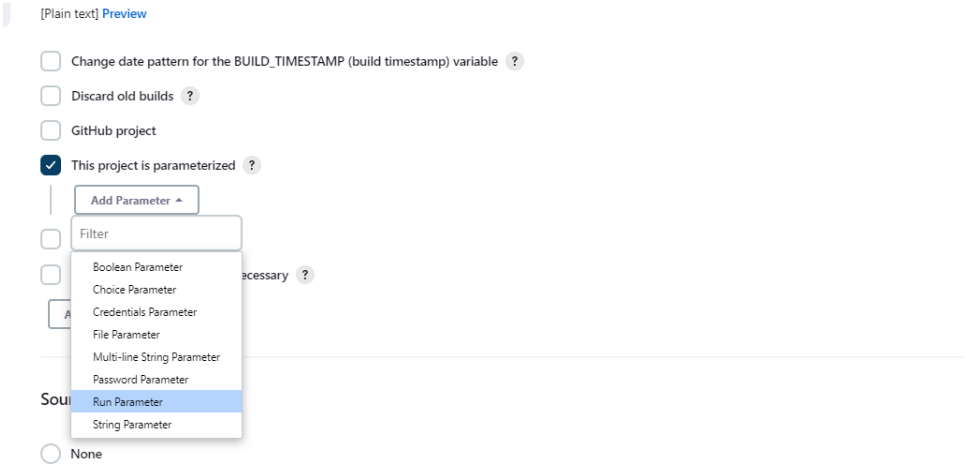
After build last successful artifacts will be archived,



To move the artifacts into a new directory, with a new filename every time. Add this in build step



11. The below option enable user to enter build the value with parameter. Create a variable like "VERSION", then in build step use $VERSION



Or you can select change date pattern and enter pattern below and use $BUILD_TIMESTAMP in execute shell.