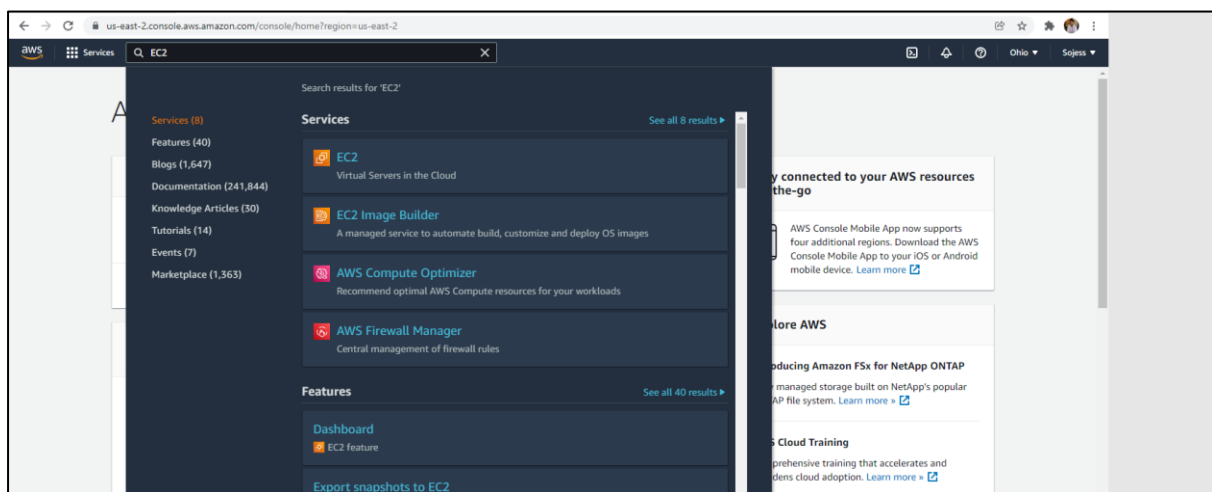


SBA10

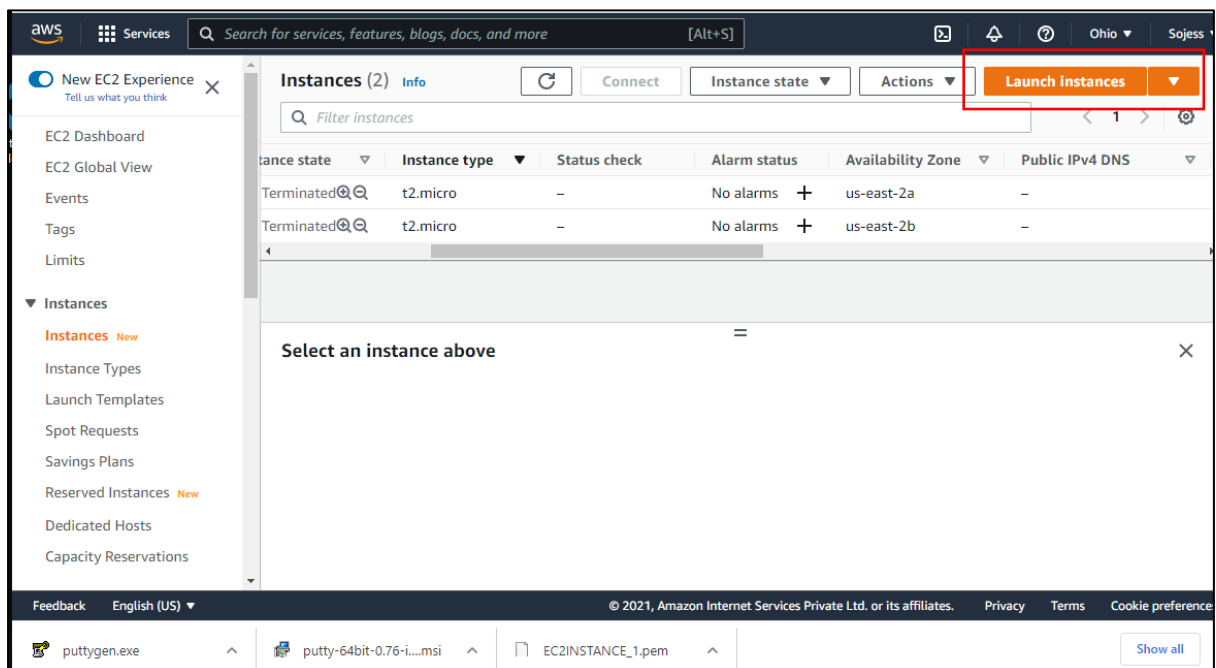
run Selenium Tests with Jenkins on AWS EC2

SETUP EC2 UBUNTU SERVER ON AWS


1. OPEN AWS MANAGEMENT CONSOLE AND SEARCH FOR EC2 INSTANCE



2. SELECT EC2 AND CLICK ON LAUNCH INSTANCES



3. SELECT UBUNTU 20.04 LTS FROM THE LIST

**Ubuntu Server 20.04 LTS (HVM), SSD Volume Type** - ami-0629230e074c580f2 (64-bit x86) / ami-03b47d2d727e13114 (64-bit Arm)

Free tier eligible Ubuntu Server 20.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

☒ 64-bit (x86)
☐ 64-bit (Arm)

4. SELECT T2 MICRO "FREE TIER ELIGIBLE" FROM THE LIST AND CLICK ON NEXT

Filter by: All instance families Current generation Show/Hide Columns

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, -, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes

Cancel Previous Review and Launch Next: Configure Instance Details

5. CLICK NEXT UNTIL STEP 6

aws Services [Alt+S] Ohio Sojess

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group
☐ Select an existing security group

Security group name:

Description:

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	My IP 117.194.168.93/32	e.g. SSH for Admin Desktop
Custom TCP f	TCP	8080	Custom 0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop
HTTP	TCP	80	Custom 0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop
HTTPS	TCP	443	Custom 0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop

Cancel Previous Review and Launch

6. ADD THESE RULES TO THE SECTION AND CLICK ON REVIEW AND LAUNCH

aws Services Search for services, features, blogs, docs, and more [Alt+S] Ohio Sojess

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details [Edit AMI](#)

Ubuntu Server 20.04 LTS (HVM), SSD Volume Type - ami-0629230e074c580f2

Free tier eligible Ubuntu Server 20.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).
Root Device Type: ebs Virtualization type: hvm

Instance Type [Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	-	1	1	EBS only	-	Low to Moderate

[Cancel](#) [Previous](#) [Launch](#)

7. CLICK ON LAUNCH

C

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance. Amazon EC2 supports ED25519 and RSA key pair types.

Note: The selected key pair will be added to the set of keys authorized for this instance. [Learn more about removing existing key pairs from a public AMI.](#)

Create a new key pair

Key pair type

☒ RSA ☐ ED25519

Key pair name

EC2Jenkins

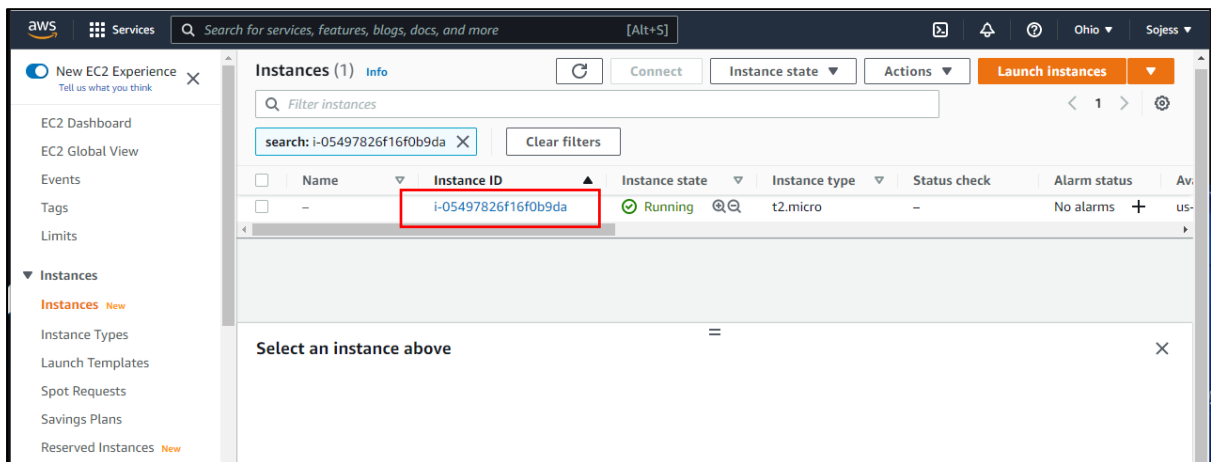
[Download Key Pair](#)

You have to download the **private key file** (*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

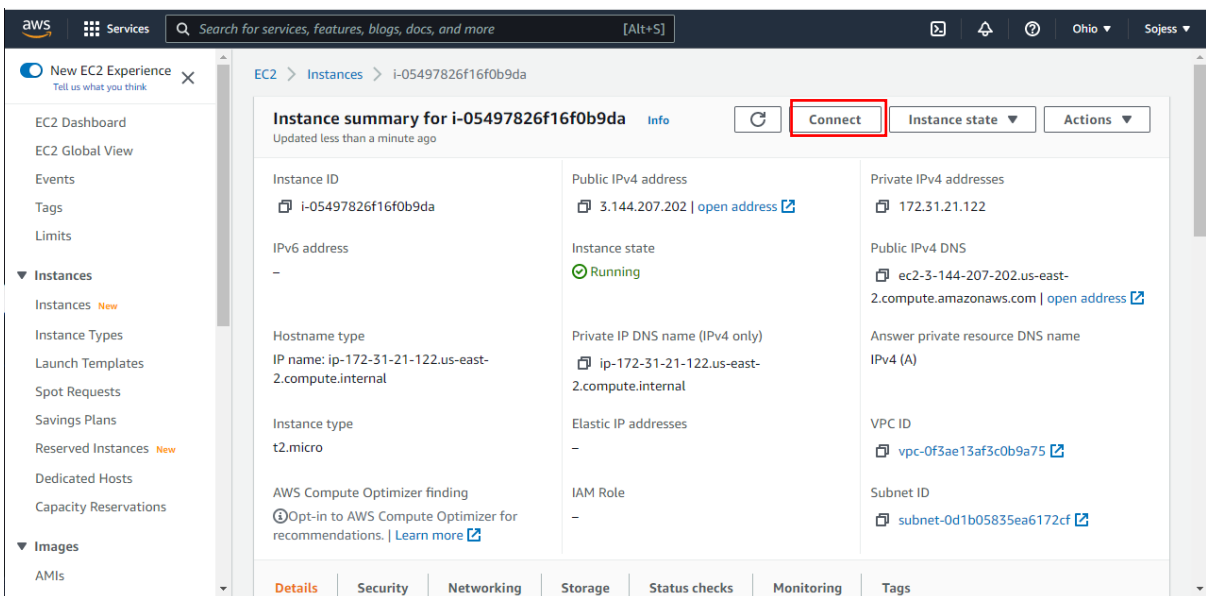
[Cancel](#) [Launch Instances](#)

8. SELECT "CREATE A NEW KEY PAIR" FROM THE DROP DOWN AND GIVE A NAME TO THE KEY PAIR, THEN CLICK ON "DOWNLOAD KEY PAIR" THEN CLICK ON LAUNCH INSTANCES.

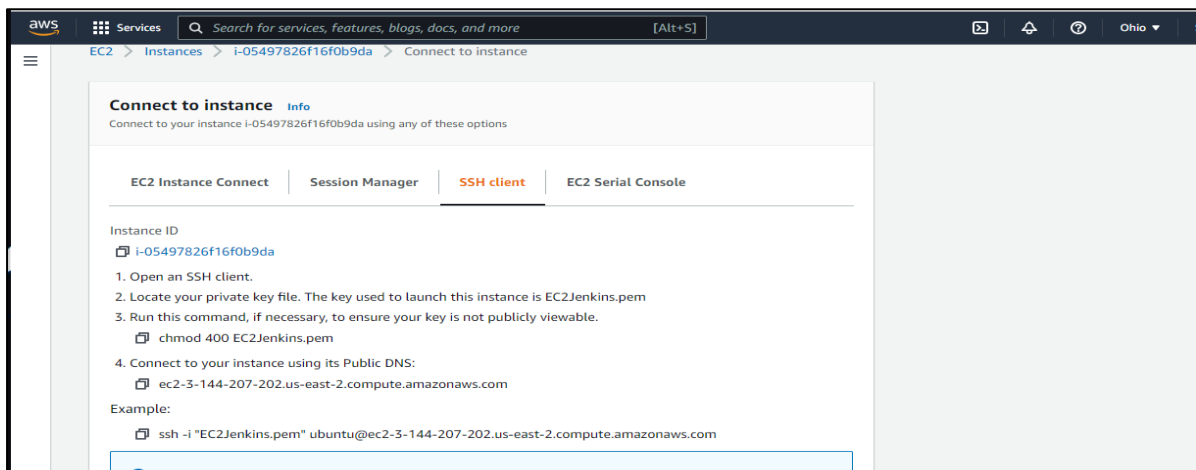
9. YOUR INSTANCE WILL BE UP AND RUNNING.



10. OPEN THE INSTANCE BY CLICKING ON THE INSTANCE ID.

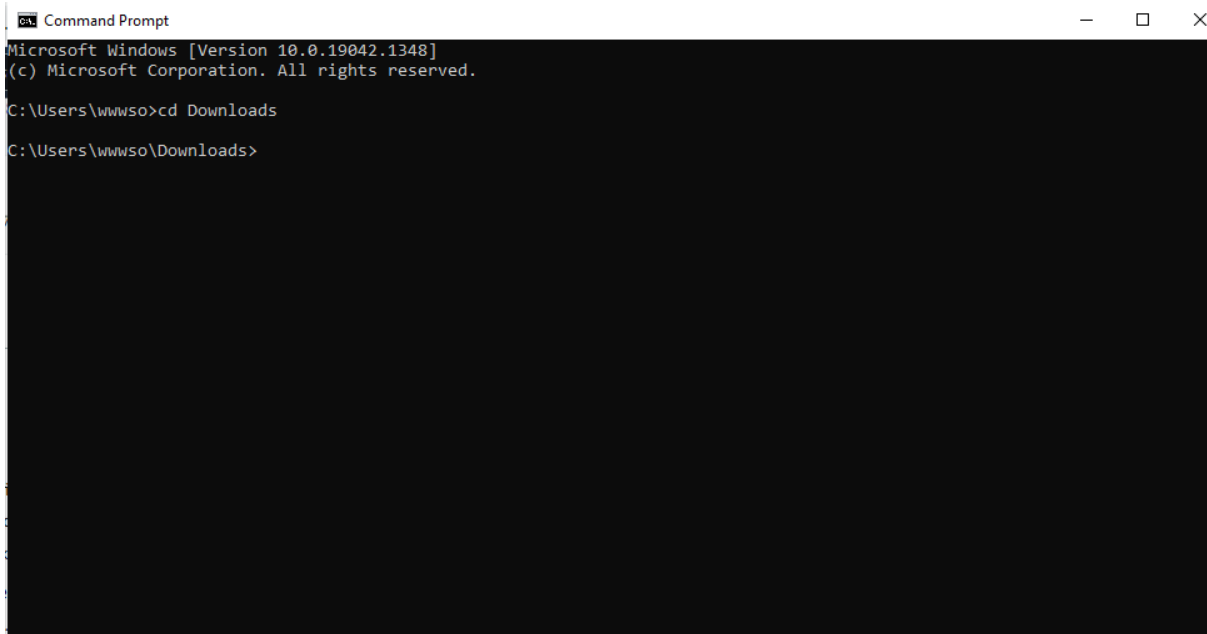


11. CLICK ON CONNECT



12. AND SELECT SSH CLIENT TAB

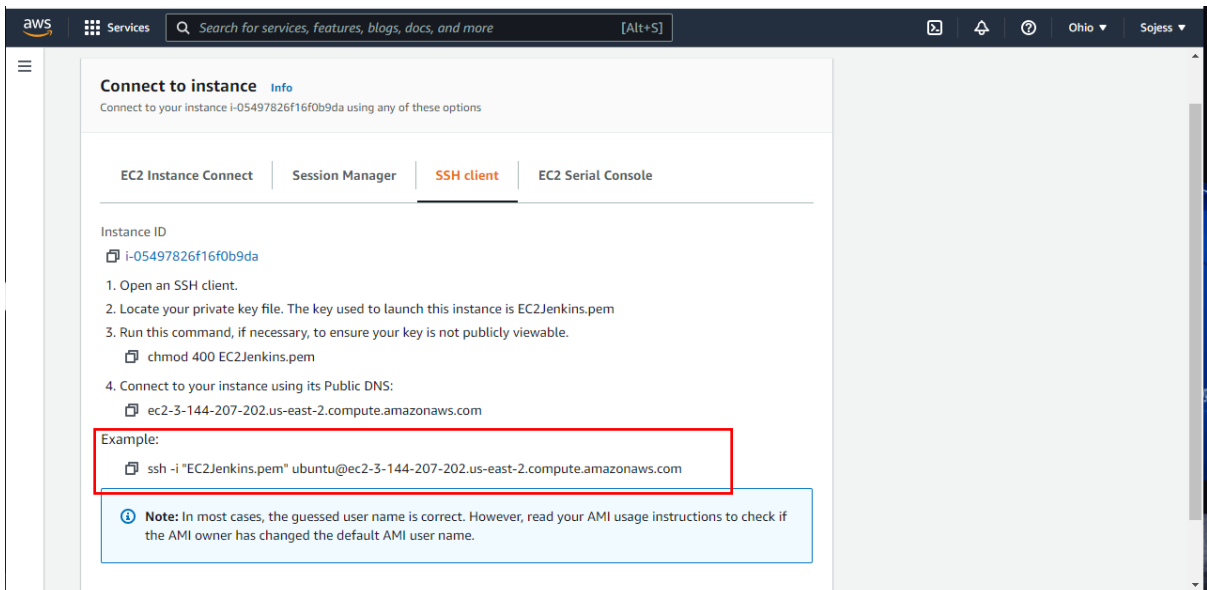
13. NOW OPEN YOUR COMMAND PROMPT AND GO TO THE FOLDER WHERE YOU DOWNLOADED THE KEY PAIR.



```
Command Prompt
Microsoft Windows [Version 10.0.19042.1348]
(c) Microsoft Corporation. All rights reserved.

C:\Users\wwwso>cd Downloads
C:\Users\wwwso\Downloads>
```

14. COPY THE COMMAND SIMILAR TO THE ONE GIVEN IN THE BELOW PIC FROM THE SSH CLIENT TAB



Connect to instance [Info](#)

Connect to your instance i-05497826f16f0b9da using any of these options

EC2 Instance Connect | Session Manager | **SSH client** | EC2 Serial Console

Instance ID
i-05497826f16f0b9da

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is EC2Jenkins.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.
chmod 400 EC2Jenkins.pem
4. Connect to your instance using its Public DNS:
ec2-3-144-207-202.us-east-2.compute.amazonaws.com

Example:

```
ssh -i "EC2Jenkins.pem" ubuntu@ec2-3-144-207-202.us-east-2.compute.amazonaws.com
```

Note: In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

15. AND PASTE IT IN THE COMMAND PROMPT, CLICK ENTER AND ENTER "YES" AND CLICK ENTER.

```
Command Prompt - ssh -i "EC2Jenkins.pem" ubuntu@ec2-3-144-207-202.us-east-2.compute.amazonaws.com
Microsoft Windows [Version 10.0.19042.1348]
(c) Microsoft Corporation. All rights reserved.

C:\Users\wwwso>cd Downloads

C:\Users\wwwso\Downloads>ssh -i "EC2Jenkins.pem" ubuntu@ec2-3-144-207-202.us-east-2.compute.amazonaws.com
The authenticity of host 'ec2-3-144-207-202.us-east-2.compute.amazonaws.com (3.144.207.202)' can't be established.
ECDSA key fingerprint is SHA256:VIVlfgige70B8vDmH/NCuNngT2JV8OQU7sKz3+uu04c.
Are you sure you want to continue connecting (yes/no/[fingerprint])?
```

16. NOW YOU'RE SUCCESSFULLY CONNECTED TO YOUR INSTANCE

```
ubuntu@ip-172-31-21-122: ~
* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage

System information as of Thu Nov 25 05:29:03 UTC 2021

System load:  0.0          Processes:      98
Usage of /:   17.7% of 7.69GB Users logged in:  0
Memory usage: 19%         IPv4 address for eth0: 172.31.21.122
Swap usage:   0%

1 update can be applied immediately.
To see these additional updates run: apt list --upgradable

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-21-122:~$
```

NOW IN ORDER TO DEVELOP THE TESTING ENVIRONMENT WE NEED TO INSTALL ALL THE REQUIRED PACKAGE ON THE UBUNTU SERVER LIKE CHROME DRIVER, CHROME BINARY, JENKINS ETC. SO FOR THAT WE NEED TO GET THE PACKAGES UPDATED FOR THAT

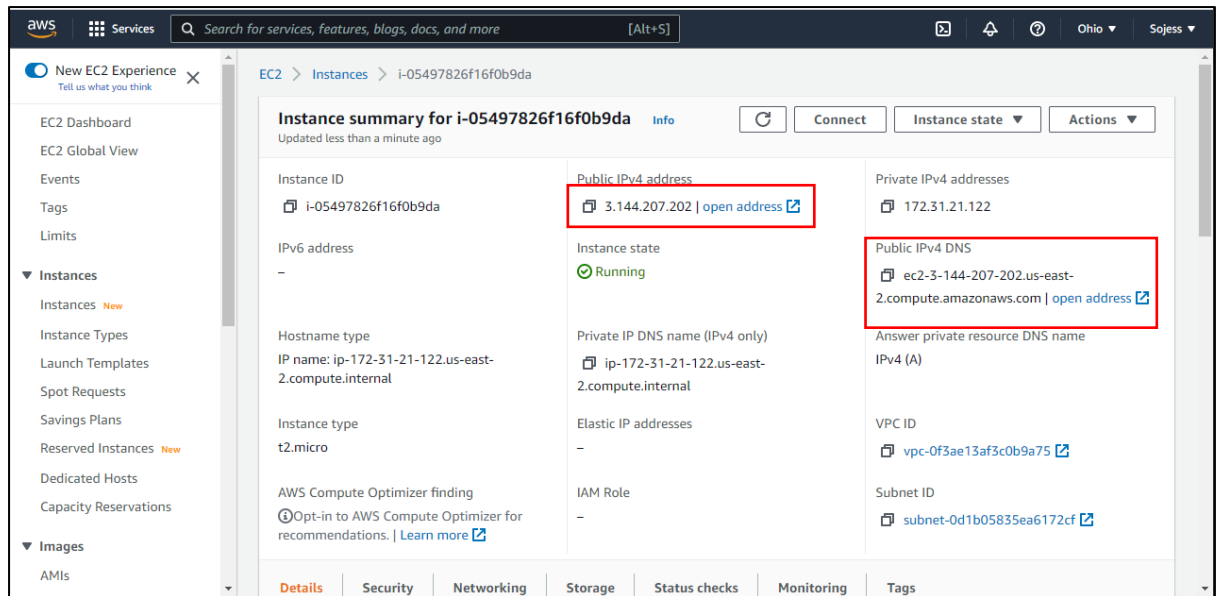
17. RUN THE COMMAND SUDO APT-GET UPDATE IN THE TERMINAL

18. TO UPGRADE ALL THE PACKAGES THAT DOWNLOADED RUN THE COMMAND SUDO APT-GET UPGRADE IN THE TERMINAL. AND IF PROMPTED ENTER "Y" AND

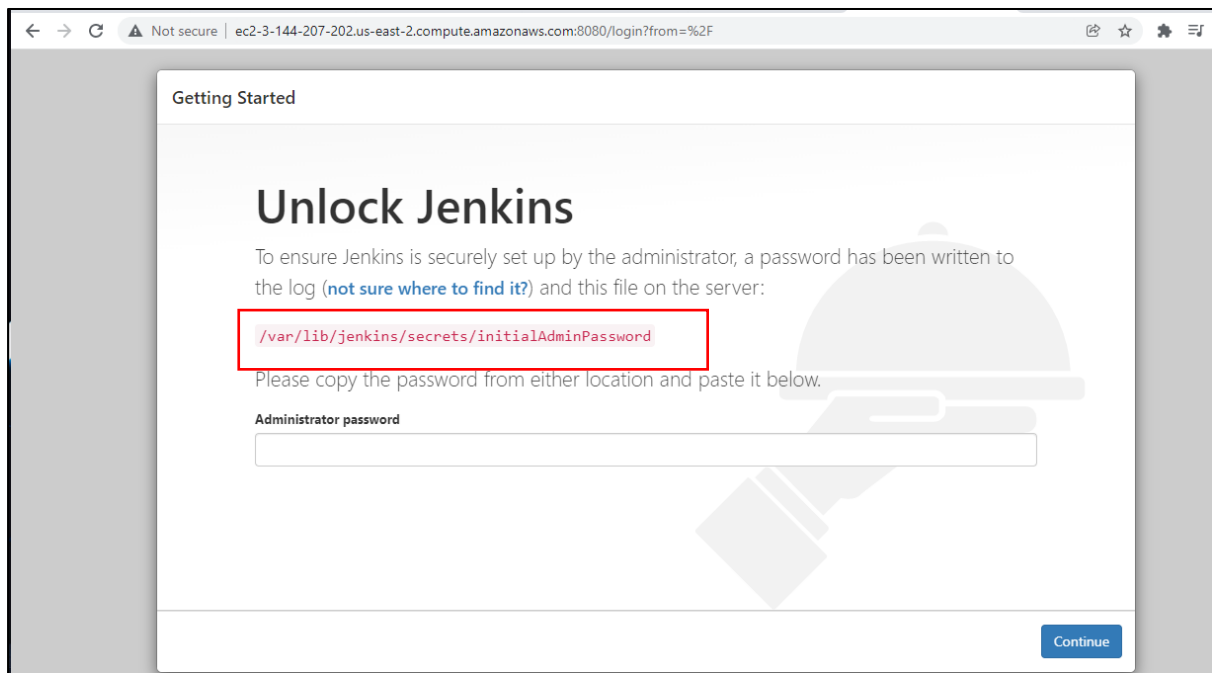
STEPS TO INSTALL CHROME, GIT, MAVEN, JENKINS ON UBUNTU SERVER

1. INSTALL LATEST CHROME BINARY ON UBUNTU SERVER

- 1.1. RUN COMMAND SUDO APT-GET INSTALL -Y LIBAPPINDICATOR1 FONTS-LIBERATION TERMINAL.
- 1.2. RUN COMMAND WGET HTTPS://DL.GOOGLE.COM/LINUX/DIRECT/GOOGLE-CHROME-STABLE_CURRENT_AMD64.DEB TO DOWNLOAD THE CHROME BINARY TO THE SERVER.
- 1.3. NOW TO RUN THE PACKAGE RUN COMMAND SUDO DPKG -I GOOGLE-CHROME*.DEB
- 1.4. NOW YOU WILL SEE SOME ERROR BUT DON'T WORRY RUN THIS COMMAND ON THE TERMINAL SUDO APT-GET INSTALL -F AND THE ERROR WILL BE GONE.
- 1.5. RUN GOOGLE-CHROME -VERSION IN THE TERMINAL TO CHECK WHETHER THE CHROME BINARY IS INSTALLED PROPERLY OR NOT.
2. INSTALL CHROME DRIVER ON UBUNTU SERVER
 - 2.1. RUN COMMAND SUDO APT INSTALL UNZIP
 - 2.2. RUN COMMAND WGET HTTPS://CHROMEDRIVER.STORAGE.GOOGLEAPIS.COM/96.0.4664.45/CHROMEDRIVER_LINUX64.ZIP . MAKE SURE THAT THE DRIVER VERSION IS
 - 2.3. RUN COMMAND UNZIP CHROMEDRIVER_LINUX64.ZIP
 - 2.4. AFTER UNZIPPING RUN COMMAND SUDO MV CHROMEDRIVER /USR/BIN/CHROMEDRIVER.
 - 2.5. VERIFY CHROME DRIVER VERSION BY RUNNING THE COMMAND CHROMEDRIVER - VERSION.
3. INSTALL JAVA ON UBUNTU SERVER
 - 3.1. RUN COMMAND SUDO APT-GET INSTALL DEFAULT-JDK. ENTER Y IF PROMPTED.
4. INSTALL MAVEN ON UBUNTU SERVER
 - 4.1. RUN COMMAND SUDO APT INSTALL MAVEN
5. INSTALL GIT ON UBUNTU SERVER
 - 5.1. RUN COMMAND SUDO APT INSTALL GIT
6. INSTALL JENKINS ON UBUNTU SERVER
 - 6.1. RUN COMMAND WGET -Q -O - HTTPS://PKG.JENKINS.IO/DEBIAN-STABLE/JENKINS.IO.KEY | SUDO APT-KEY ADD -
 - 6.2. THEN RUN SUDO SH -C 'ECHO DEB HTTPS://PKG.JENKINS.IO/DEBIAN-STABLE BINARY/ > \ /ETC/APT/SOURCES.LIST.D/JENKINS.LIST'
 - 6.3. RUN SUDO APT-GET UPDATE
 - 6.4. RUN SUDO APT-GET INSTALL JENKINS
 - 6.5. VERIFY IF JENKINS IS WORKING BY NAVIGATING TO THE URL "YOURIPV4 ADDRESS OR IPV4 DNS :8080"



6.6 IF SUCCESS U WILL GET A PAGE LIKE GIVEN IN THE BELOW PIC



CONFIGURING JENKINS

1. COPY THE FOLDER LOCATION GIVEN IN THE LOGIN PAGE AND OPEN THE TERMINAL AND RUN THE FOLLOWING CODE `SUDO CAT /VAR/LIB/JENKINS/SECRETS/INITIALADMINPASSWORD`
2. COPY THE PASSWORD OBTAINED AND PASTE IT IN THE ADMINISTRATOR PASSWORD INPUT FIELD. CLICK ON CONTINUE

Getting Started

Customize Jenkins

Plugins extend Jenkins with additional features to support many different needs.

Install suggested plugins

Install plugins the Jenkins community finds most useful.

Select plugins to install

Select and install plugins most suitable for your needs.

Jenkins 2.303.3

3.SELECT INSTALL SUGGESTED PLUGINS

Getting Started

Create First Admin User

Username:

Password:

Confirm password:

Full name:

E-mail address:

Jenkins 2.303.3

Skip and continue as admin

Save and Continue

4.AFTER THE INSTALLATION ENTER THE NECESSARY DETAILS IN THE FOLLOWING PAGE AND CLICK ON SAVE AND CONTINUE

Instance Configuration

Jenkins URL:

`http://ec2-3-144-207-202.us-east-2.compute.amazonaws`

The Jenkins URL is used to provide the root URL for absolute links to various Jenkins resources. That means this value is required for proper operation of many Jenkins features including email notifications, PR status updates, and the `BUILD_URL` environment variable provided to build steps.

The proposed default value shown is **not saved yet** and is generated from the current request, if possible. The best practice is to set this value to the URL that users are expected to use. This will avoid confusion when sharing or viewing links.

Jenkins 2.303.3

Not now

Save and Finish

5.CLICK ON SAVE AND FINISH

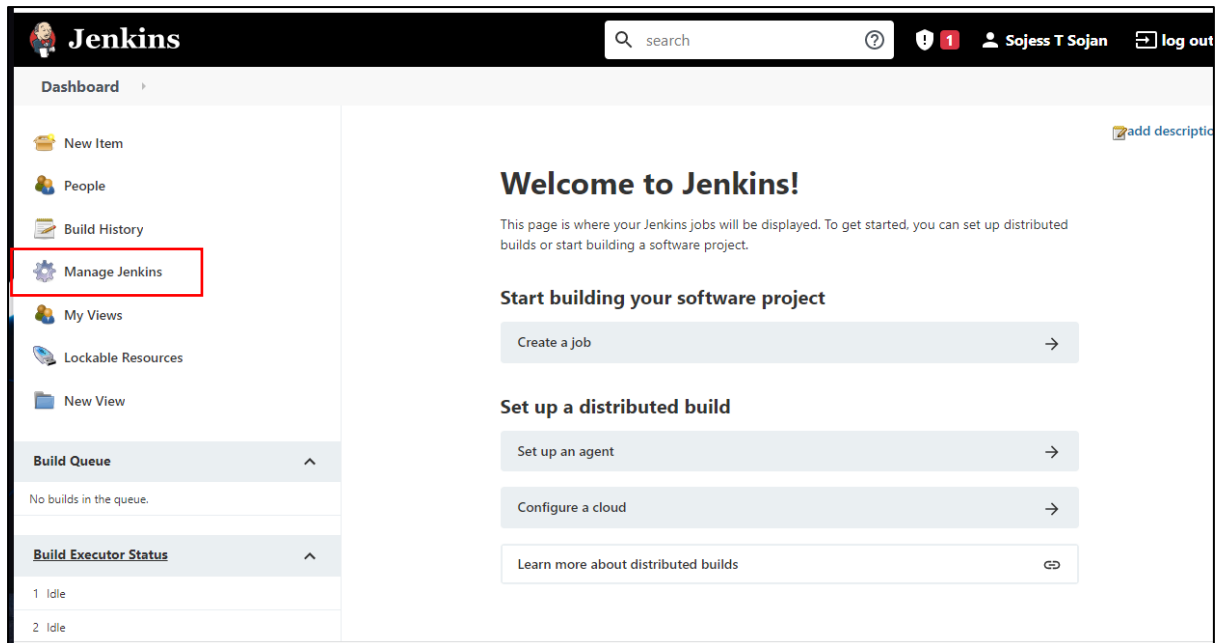
Jenkins is ready!

Your Jenkins setup is complete.

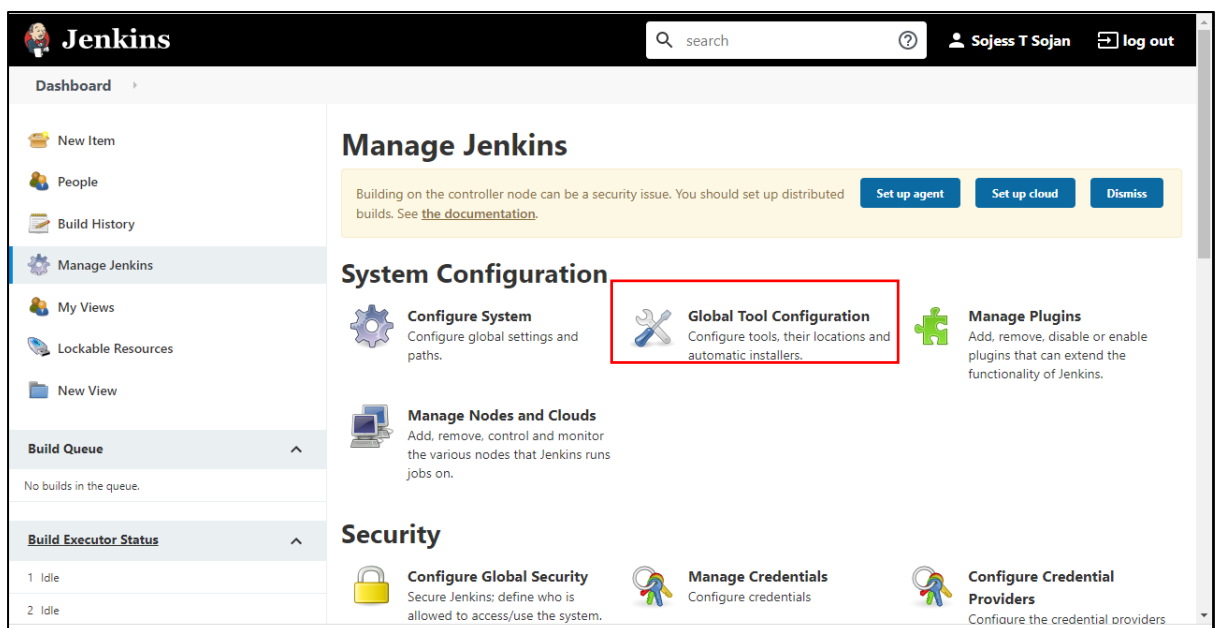
Start using Jenkins

Jenkins 2.303.3

6.CLICK ON START USING JENKINS



7.SELECT MANAGE JENKINS



8.SELECT GLOBAL TOOL CONFIGURATION

JDK

JDK installations

Add JDK

JDK

Name

Default

JAVA_HOME

/usr/lib/jvm/java-11-openjdk-amd64

☐ Install automatically

Add JDK

Save

Apply

9. SCROLL DOWN TO JDK SECTION AND CLICK ON ADD JDK, UNCHECK INSTALL AUTOMATICALLY ENTER NAME AS "DEFAULT" AND IN THE JAVA_HOME FIELD ENTER "/USR/LIB/JVM/JAVA-11-OPENJDK-AMD64"

Git

Git installations

Git

Name

Default

Path to Git executable ?

/usr/lib/git-core/git

☐ Install automatically ?

10. SIMILARLY FOR GIT SCROLL DOWN TO GIT SECTION AND ENTER THE DETAILS PATH AS "/USR/LIB/GIT-CORE/GIT"

Maven

Maven installations

[Add Maven](#)

Maven

Name

Default

MAVEN_HOME

/usr/share/maven

☐ Install automatically [?](#)

[Delete Maven](#)

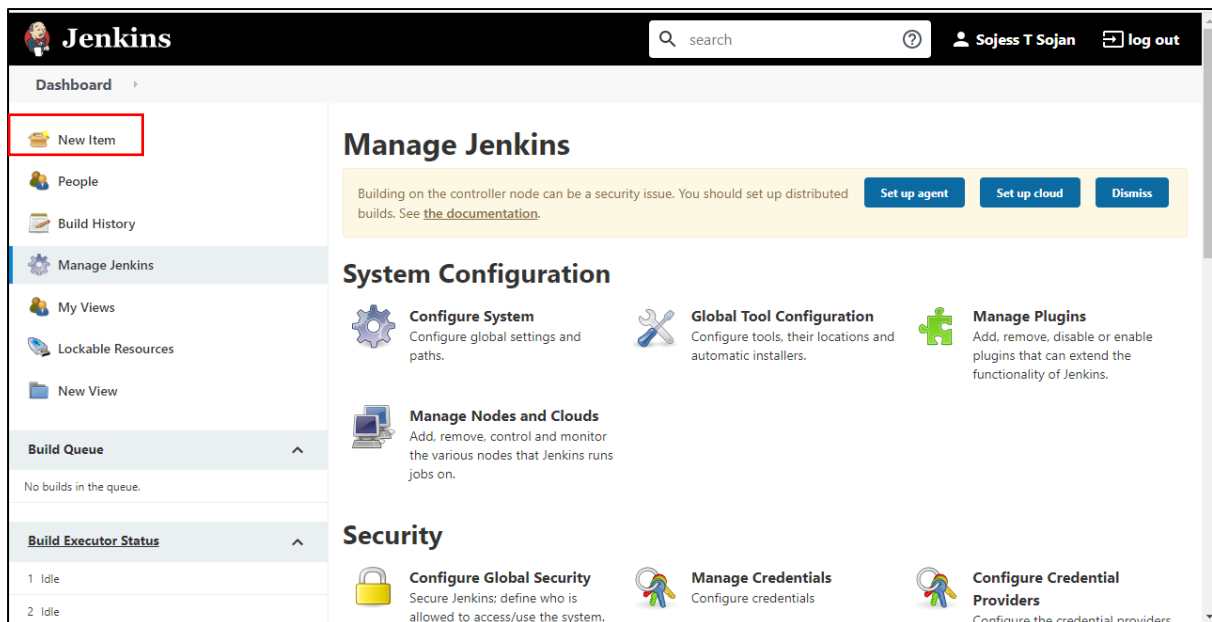
[Add Maven](#)

List of Maven installations on this system

[Save](#) [Apply](#)

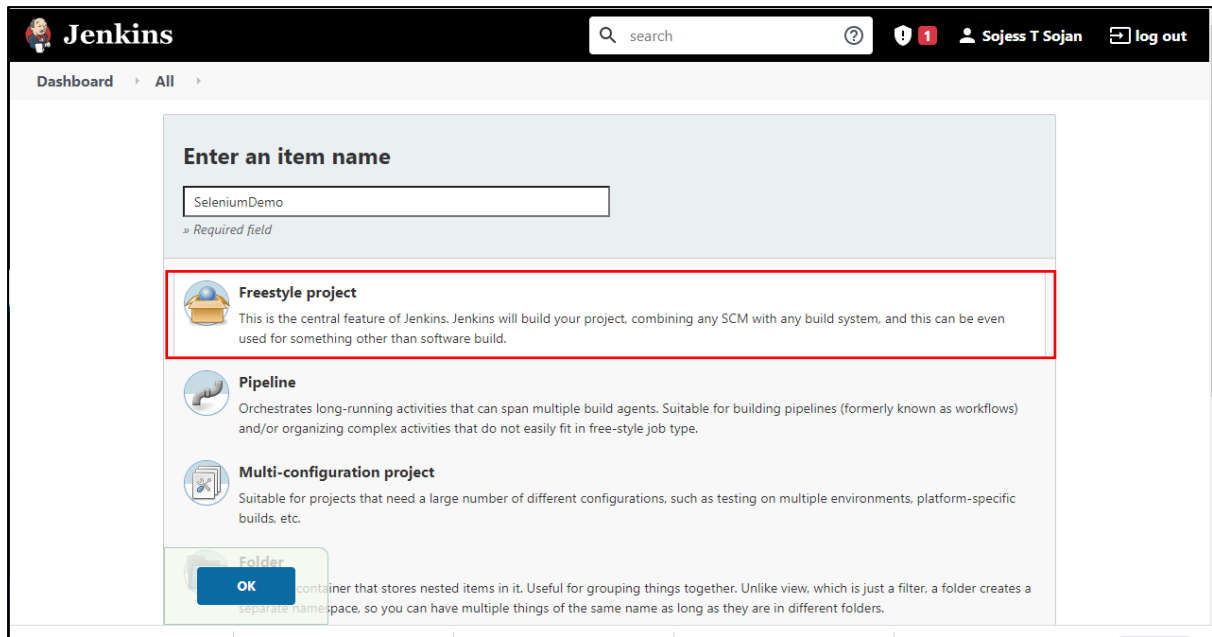
11. LIKELY SCROLL DOWN TO MAVEN SECTION CLICK ON ADD MAVEN>> DESELECT INSTALL AUTOMATICALLY>> ADD FIELD NAME AS "DEFAULT" AND MAVEN_HOME AS "/USR/SHARE/MAVEN" .CLICK ON APPLY AND THEN SAVE

SETTING UP THE BUILD

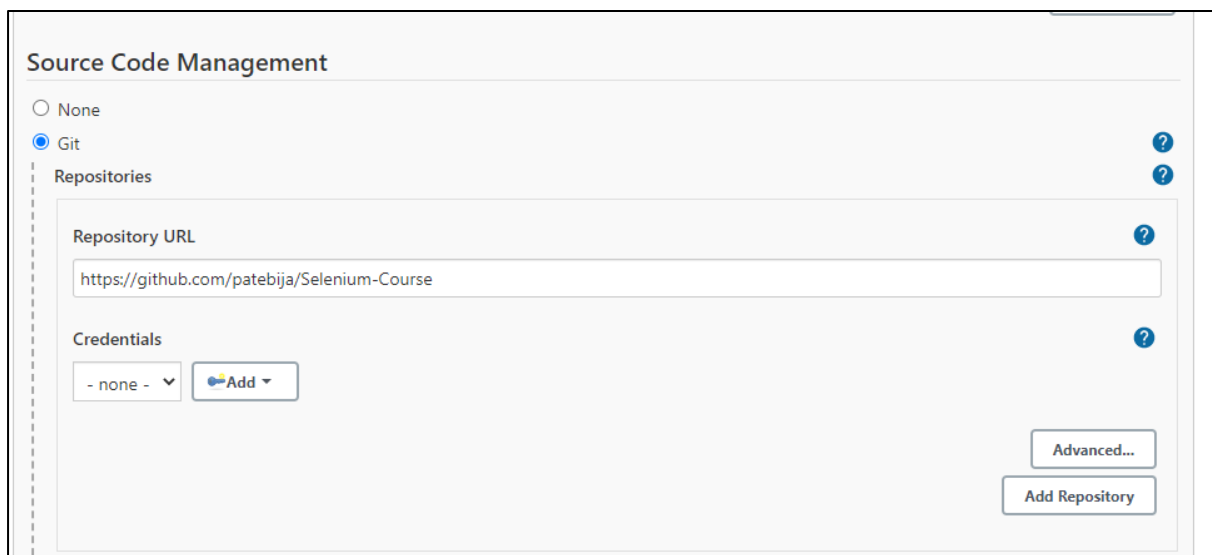


The screenshot shows the Jenkins Dashboard. The left sidebar contains a 'New Item' button highlighted with a red box. The main content area is titled 'Manage Jenkins' and includes a warning banner about security issues with distributed builds. Below this, there are three sections: 'System Configuration' with options for 'Configure System', 'Global Tool Configuration', and 'Manage Plugins'; 'Manage Nodes and Clouds'; and 'Security' with options for 'Configure Global Security', 'Manage Credentials', and 'Configure Credential Providers'.

1.SELECT NEW ITEM



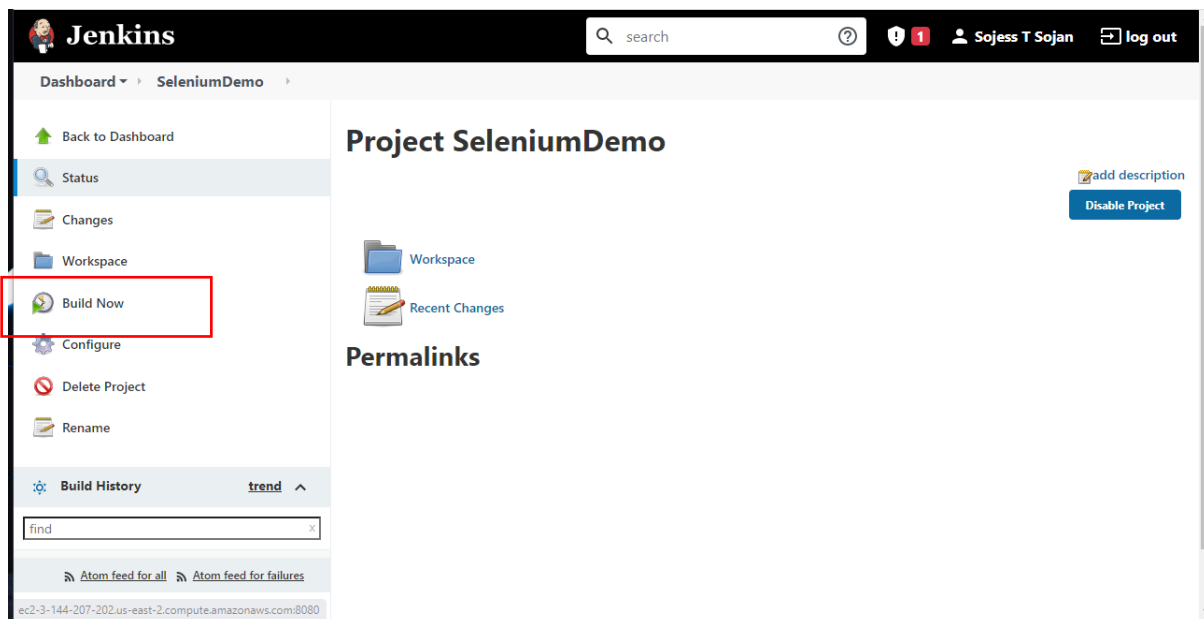
2. ENTER THE NAME AND SELECT FREESTYLE PROJECT AND CLICK ON OK



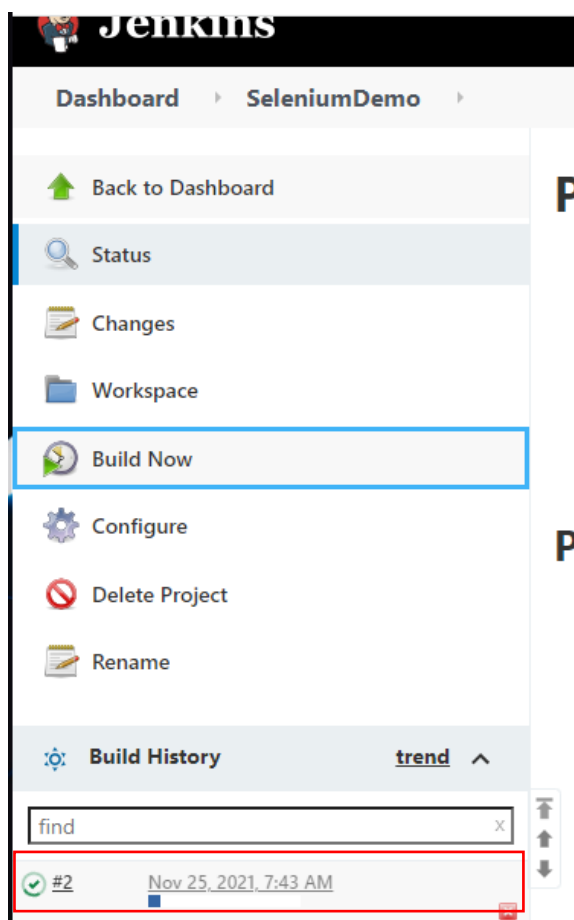
3. SCROLL DOWN TO SOURCE CODE MANAGEMENT AND ENTER THE FOLLOWING GITHUB URL IN THE REPOSITORY URL FIELD HTTPS://GITHUB.COM/PATEBIJA/SELENIUM-COURSE AND CLICK ON ADD.



4. IN THE BUILD SECTION SELECT BUILD AS “INVOKE TOP-LEVEL MAVEN TARGETS ” FROM THE DROP DOWN. AND FILL IN THE FIELDS AS SHOWN IN THE IMAGE. THEN CLICK ON SAVE.



5. CLICK ON BUILD NOW



6. CLICK HERE

The screenshot shows the Jenkins web interface for a build named 'Build #1 (Nov 25, 2021, 7:4...)'. The left sidebar contains a list of tabs: 'Back to Project', 'Status', 'Changes', 'Console Output' (highlighted with a red box), 'View as plain text', 'Edit Build Information', and 'Git Build Data'. The main content area displays the build's progress bar, a 'Keep this build forever' button, and a list of build details including 'No changes', 'Started by user Sojess T Sojan', 'Revision: 2dbf5e7e015481f4491c02b4a0d7405295ef15d6', and 'Repository: https://github.com/patebija/Selenium-Course'. The repository path is listed as 'refs/remotes/origin/master'.

7.CLICK ON CONSOLE OUTPUT

```
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 4.2 MB/s)
[01:34mINFO@] Installing /var/lib/jenkins/workspace/SeleniumDemo/target/Selenium-Course-1.0-SNAPSHOT.jar to
/var/lib/jenkins/.m2/repository/com/qascript/Selenium-Course/1.0-SNAPSHOT/Selenium-Course-1.0-SNAPSHOT.jar
[01:34mINFO@] Installing /var/lib/jenkins/workspace/SeleniumDemo/pom.xml to
/var/lib/jenkins/.m2/repository/com/qascript/Selenium-Course/1.0-SNAPSHOT/Selenium-Course-1.0-SNAPSHOT.pom
[01:34mINFO@] @1m-----@m
[01:34mINFO@] @1;32mBUILD SUCCESS@m
[01:34mINFO@] @1m-----@m
[01:34mINFO@] Total time: 32.316 s
[01:34mINFO@] Finished at: 2021-11-25T07:40:44Z
[01:34mINFO@] @1m-----@m
Finished: SUCCESS
```

8.U WILL GET THE ABOVE OUTPUT IF THE BUILD IS SUCCESS.