MENU ☰

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DevOps Classroomnotes 26/Feb/2023

Installing Maven

- Maven requires Java to be installed.
- Java:
    - Distributions:
        - OpenJDK
        - Oracle JDK
        - IBM JDK
        - Amazon Corretto JDK

    - Versions:
        - 8
        - 11
        - 17
        - 19

    - Environmental Variables:

        - PATH
        - JAVA_HOME
        - M2_HOME

    - JAVA Installation

```
# OpenJDK 8
sudo apt update
sudo apt install openjdk-8-jdk -y
java -version
```

    - Maven Installation

```
sudo apt update
sudo apt install maven -y
mvn --version
```

```
ubuntu@ip-172-31-28-62:~$ java -version
openjdk version "1.8.0_352"
OpenJDK Runtime Environment (build 1.8.0_352-8u352-ga-1~22.04-b08)
OpenJDK 64-Bit Server VM (build 25.352-b08, mixed mode)
ubuntu@ip-172-31-28-62:~$ mvn --version
Apache Maven 3.6.3
Maven home: /usr/share/maven
Java version: 1.8.0_352, vendor: Private Build, runtime: /usr/lib/jvm/java-8-open
jdk-amd64/jre
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "5.15.0-1028-aws", arch: "amd64", family: "unix"
ubuntu@ip-172-31-28-62:~$
```

* Building a sample application using maven Refer Here for game of life code
* This project requires jdk 8
* To
* compile the code: `mvn compile`
* run the automated tests: `mvn test`
* create the package: `mvn package`
* Lets try to build a project spring petclinic Refer Here. This project requires JAVA 17
* When we were compiling, testing and packaging maven is downloading lot of stuff what is that?

* Maven will download all the necessary dependencies to compile/package/test from a maven central repository Refer Here and it downloads to M2_HOME which is by default `<HOME-DIR>/.m2` which is referred as local repository.

- Maven Lifecycle Phases
  - compile: Will create .class files
  - test: will run unit tests
  - package: will create package (jar/war)
 - install: will copy the project which you have build to the local repository. Along with jar/war files a pom also gets copied

Jenkins

- Jenkins is an open source CI/CD Engine.
- Jenkins:
  - Using Package managers on Linux
  - Docker
  - Windows
  - WAR

- Lets install Jenkins Refer Here
- For installing in ubuntu Refer Here
- Lets install LTS (Long Term Support Version)

```
sudo apt-get update
sudo apt-get install openjdk-17-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
```
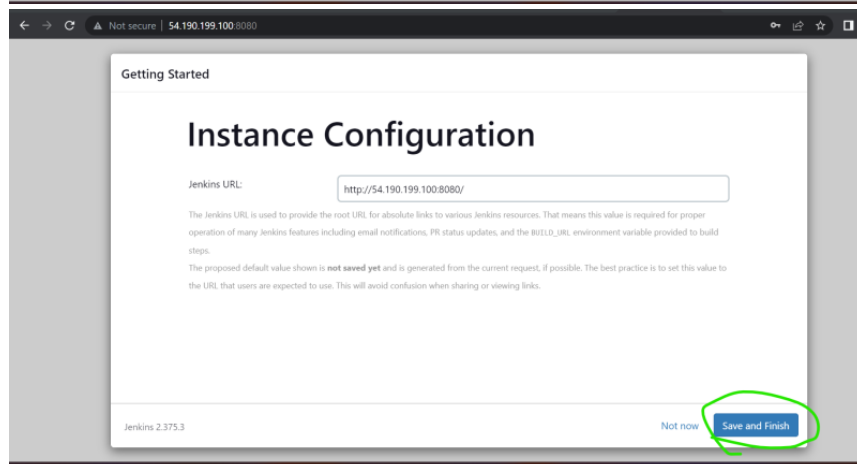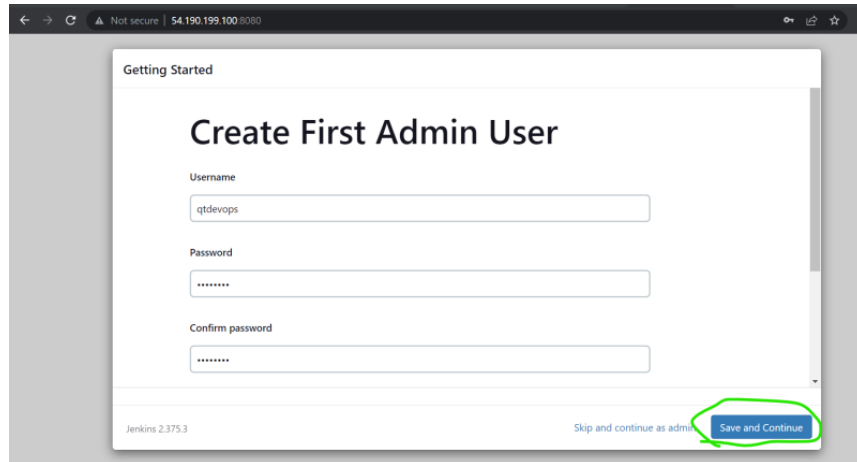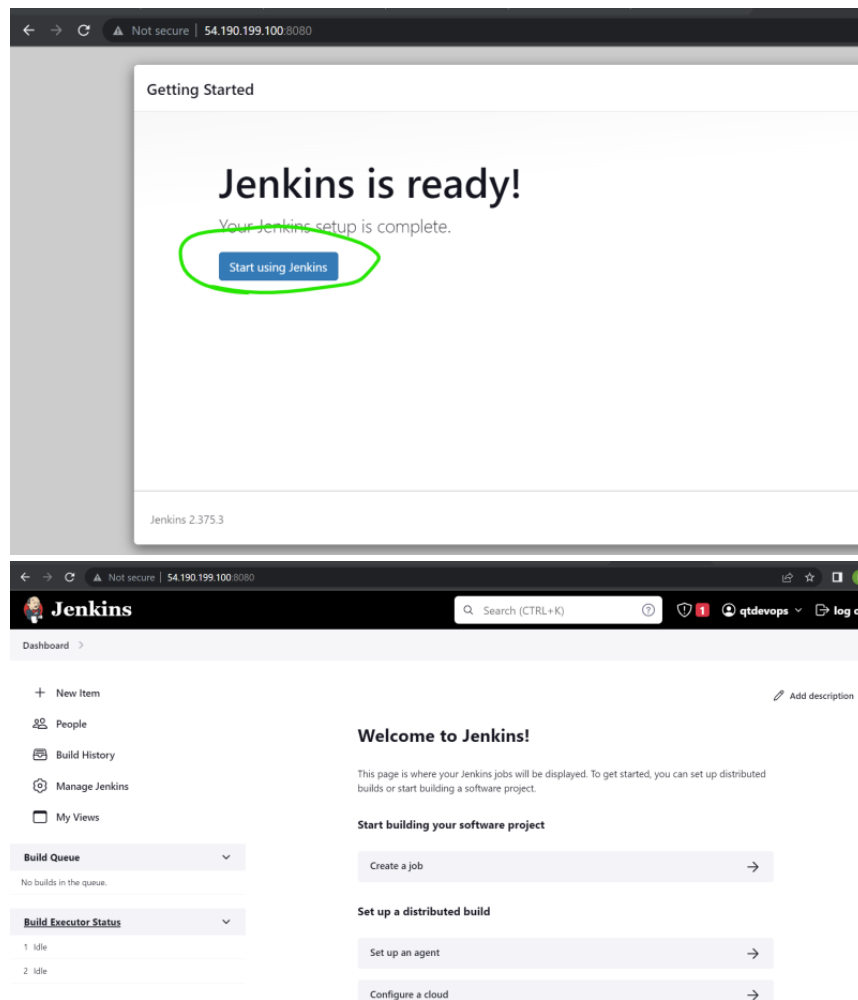
- After installing jenkins a user `jenkins` got created with
  - `/var/lib/jenkins` as Home directory
  - `/bin/bash` as default shell

- Now access jenkins using `http://<publicip>:8080`
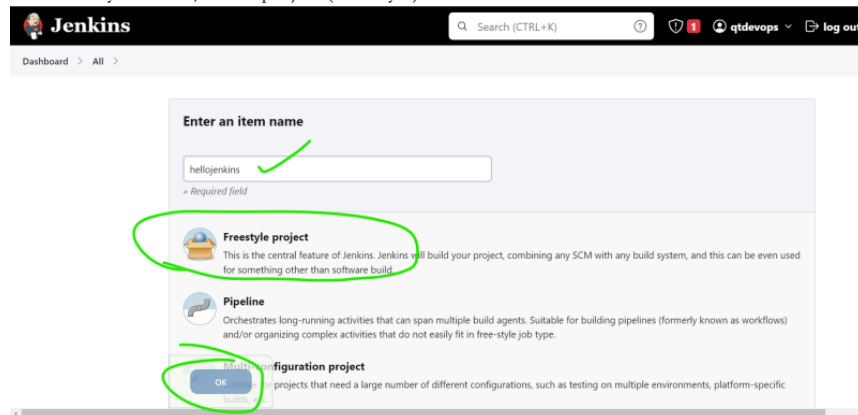- copy the inital secret and click on continue
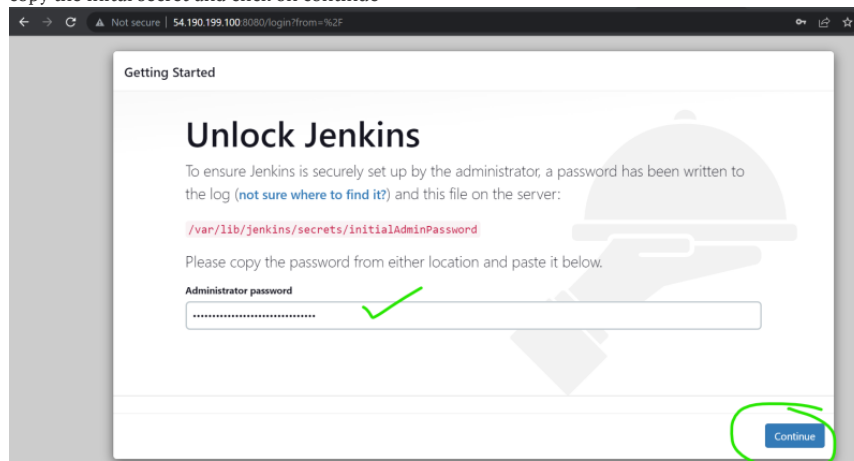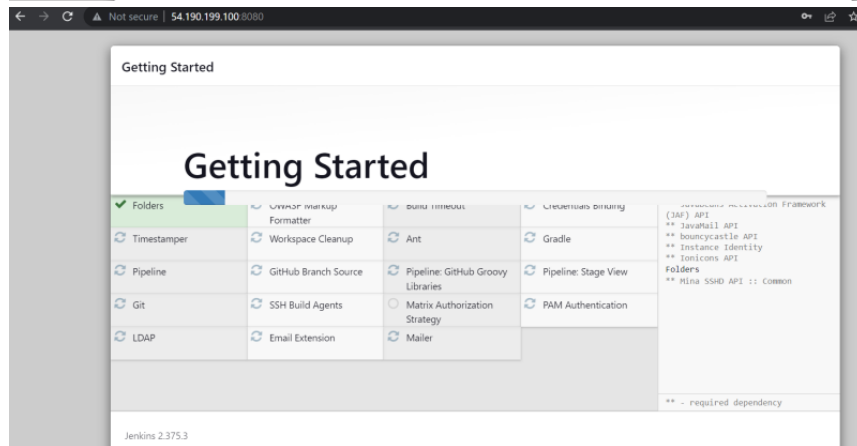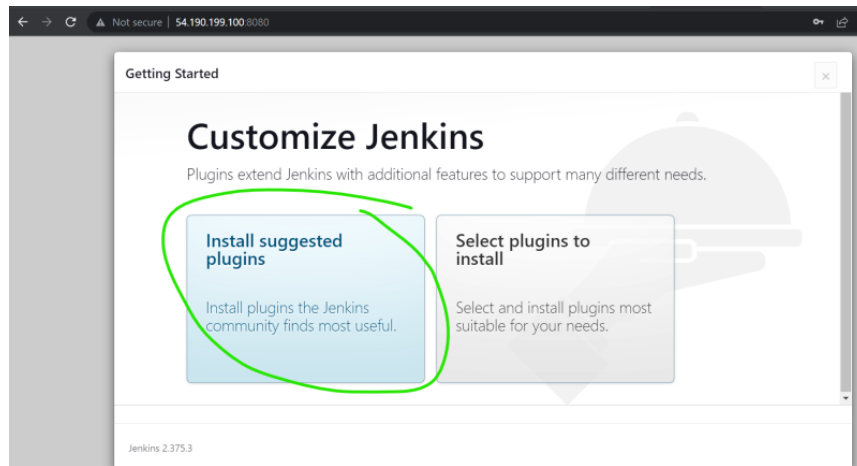
- Create an admin user

First Project to display some system information

- Lets create a Jenkins project which displays
    - username
    - current working directory
    - all the environmental variables

- Lets start by create a Jenkins project (Freestyle)

- Now navigate to build steps

- Now change the invoke shell steps to something as shown below

- Build the jenkins job

Create a Jenkins Project to build spring petclinic

- Manual steps

```
git clone https://github.com/spring-projects/spring-petclinic.git
cd spring-petclinic
mvn package
```

- Create a Jenkins job with name spc and in build steps invoke shell and execute the following

```
git clone https://github.com/spring-projects/spring-petclinic.git
cd spring-petclinic
mvn package
```

* Install maven and rerun the same job

Exercise

- Install Jenkins on a ubuntu vm
- Try to build game of life using jenkins free style project `mvn package`
- Refer Here for the the project

Jenkins Projects

- Jenkins has 3 project types (majorly)
  - Free Style: These projects are UI Based.
  - Scripted Pipeline
  - Declarative Pipeline

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