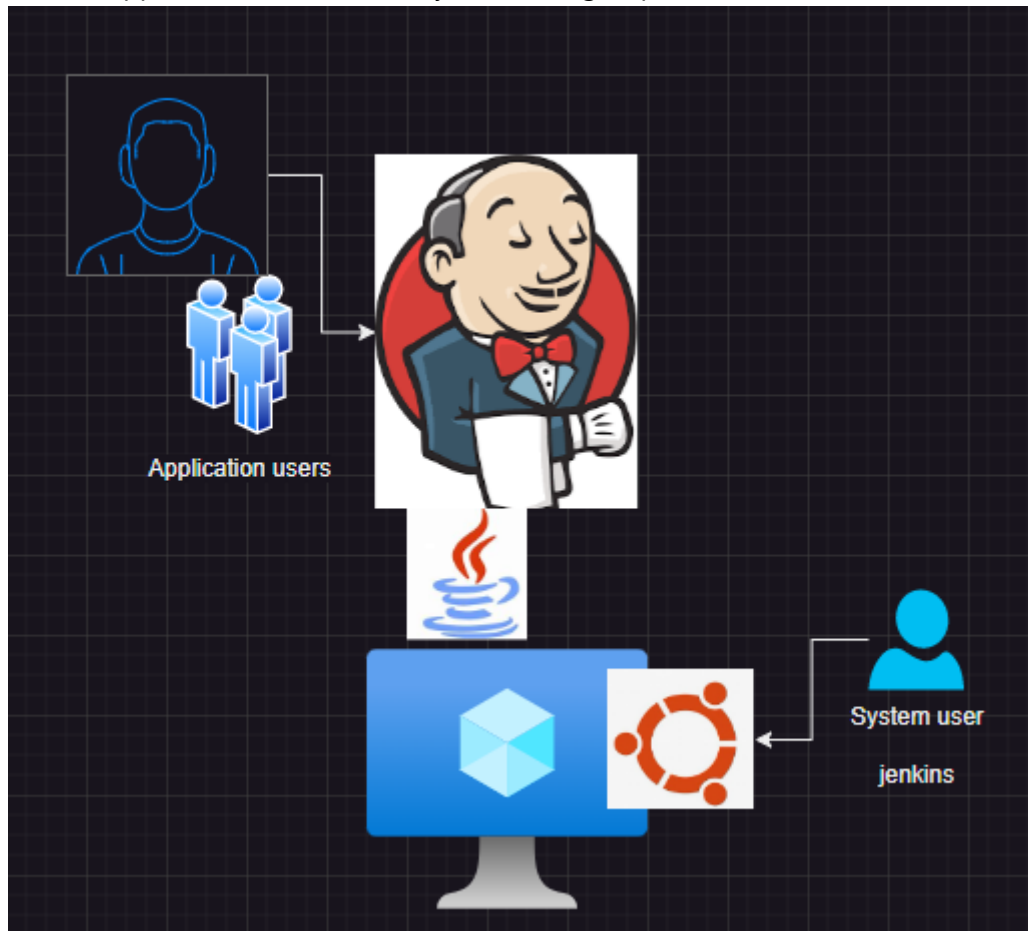


# Jenkins

## User Management in Jenkins

- Jenkins Applications can have many users and groups



- Users can be created in Jenkins using Jenkins database
- Users can be imported from
  - Active Directory
  - Unix groups
  - Java Servlet
- The above options can be changed setting present in Manage Jenkins => Security
- Users can be created from Manage Jenkins => users
- Jenkins Authorization can be set by matrix based authorization.

## Jenkins Home Directory and Workspace

- `JENKINS_HOME` Environmental variable will have the path of the Jenkins home directory
- Jenkins home directory is the memory of Jenkins i.e. Backup of Jenkins is backing up the Home directory
- When we execute any project, it will be executed in the workspace

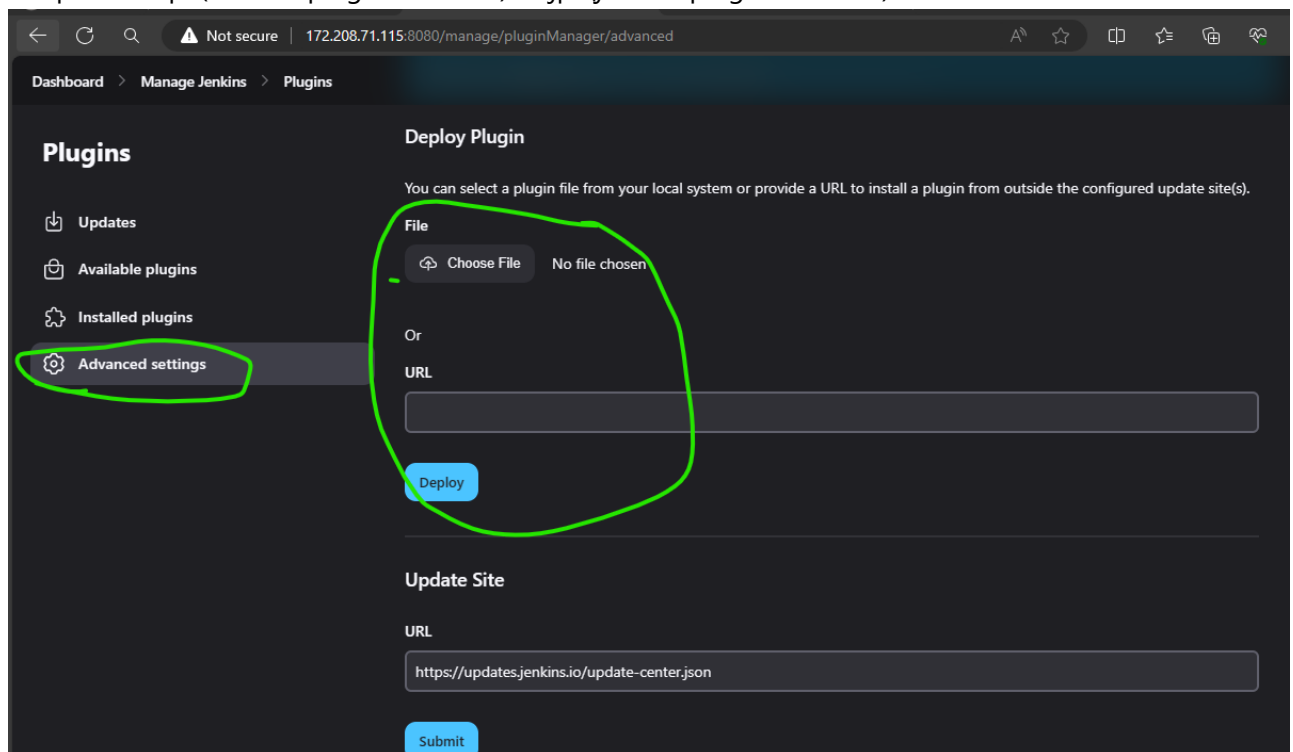
```
# directory
<JENKINS_HOME>/workspace/<project-name>
```

- When we create any project it will be stored as xml file in jobs folder

```
# directory
<JENKINS_HOME>/jobs/<project-name>
```

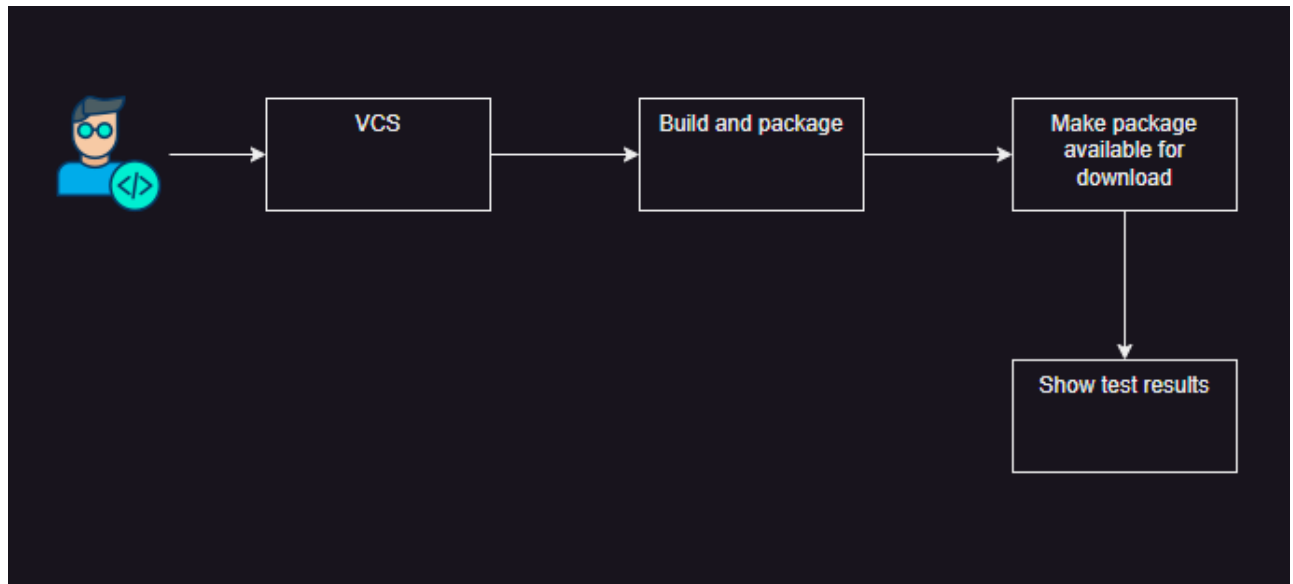
## plugin

- Plugin in Jenkins provides functionality in terms of
  - UI in freestyle projects
  - steps in declarative/scripted pipelines
  - Some additional configurations
- Plugins can be found from available plugins section
- To install additional plugins developed by your organization or third party purchase, we need to specify the path of hpi (Hudson Plugin Interface) or jpi (Jenkins Plugin Interface).

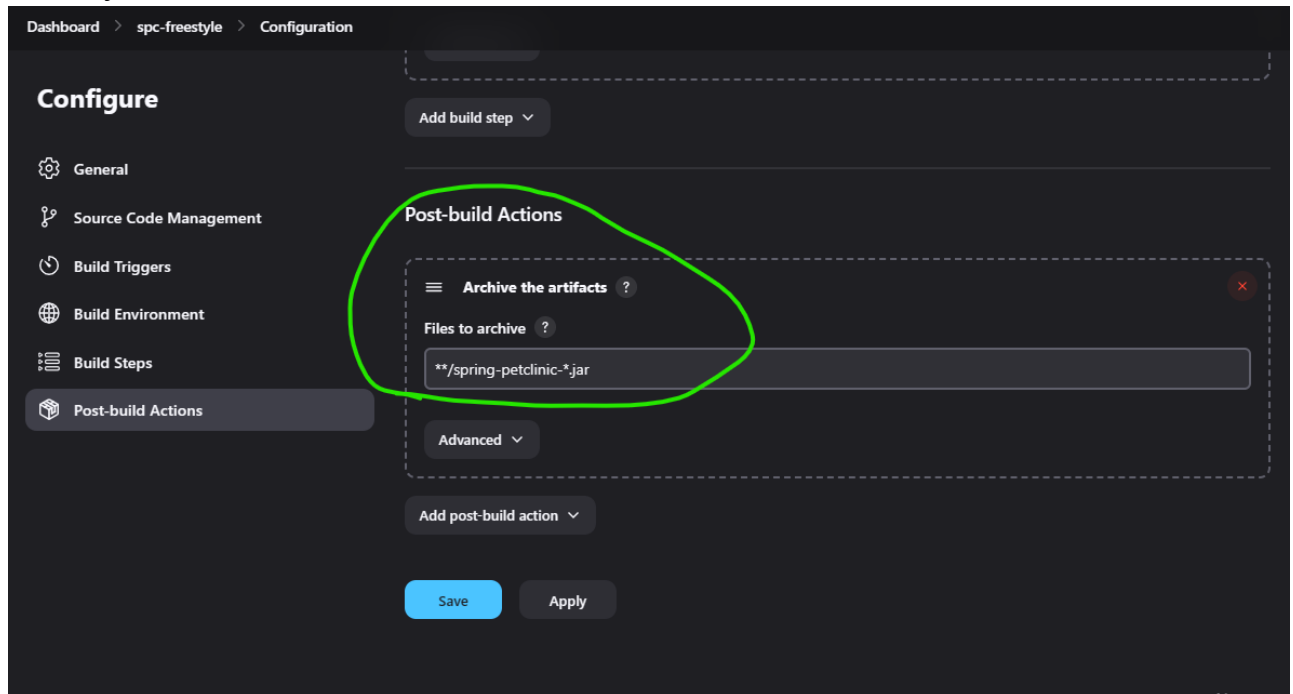


## Archiving the artifacts and showing test results

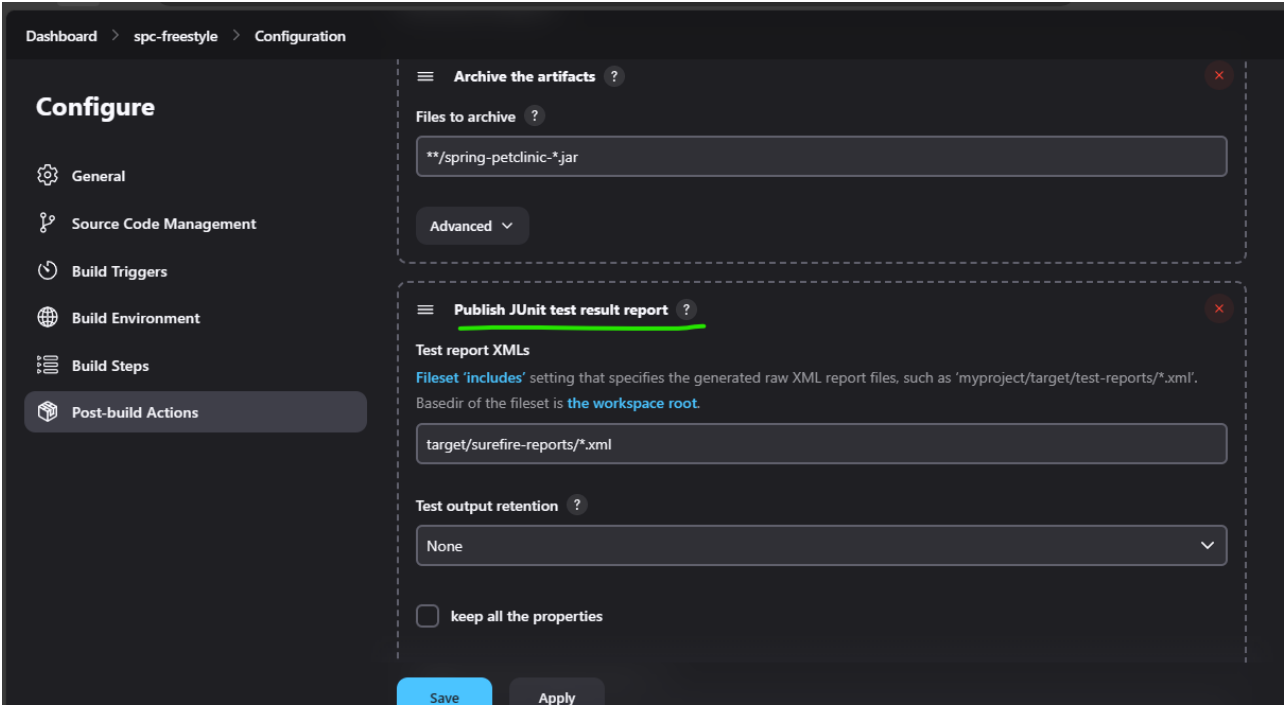
- overview



- Archive jar file (Post Build)



- Publishing junit test results (Post Build)



```

Dashboard > spc-freestyle > #2 > Console Output

[INFO] --- jacoco:0.8.11:report (report) @ spring-petclinic ---
[INFO] Loading execution data file /var/lib/jenkins/workspace/spc-freestyle/target/jacoco.exec
[INFO] Analyzed bundle 'petclinic' with 21 classes
[INFO] --- jar:3.3.0:jar (default-jar) @ spring-petclinic ---
[INFO] Building jar: /var/lib/jenkins/workspace/spc-freestyle/target/spring-petclinic-3.2.0-SNAPSHOT.jar
[INFO] --- spring-boot:3.2.1:repackage (repackage) @ spring-petclinic ---
[INFO] Replacing main artifact /var/lib/jenkins/workspace/spc-freestyle/target/spring-petclinic-3.2.0-SNAPSHOT.jar with repackaged archive, adding nested dependencies in BOOT-INF/.
[INFO] The original artifact has been renamed to /var/lib/jenkins/workspace/spc-freestyle/target/spring-petclinic-3.2.0-SNAPSHOT.jar.original
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 33.223 s
[INFO] Finished at: 2024-04-06T03:18:01Z
[INFO] -----
Archiving artifacts ✓
Recording test results ✓
[Checks API] No suitable checks publisher found.
Finished: SUCCESS

```

Dashboard > spc-freestyle >

**spc-freestyle** ✓ Add description Disable Project

**Last Successful Artifacts**

Artifact	Size	Action
spring-petclinic-3.2.0-SNAPSHOT.jar	57.22 MiB	<a href="#">view</a>

**Latest Test Result** (no failures)

**Test Result Trend**

Passed (green dot), Skipped (grey dot), Failed (red dot)

**Permalinks**

- Last build (#2), 1 min 5 sec ago
- Last stable build (#2), 1 min 5 sec ago
- Last successful build (#2), 1 min 5 sec ago
- Last completed build (#2), 1 min 5 sec ago

**Build History** trend

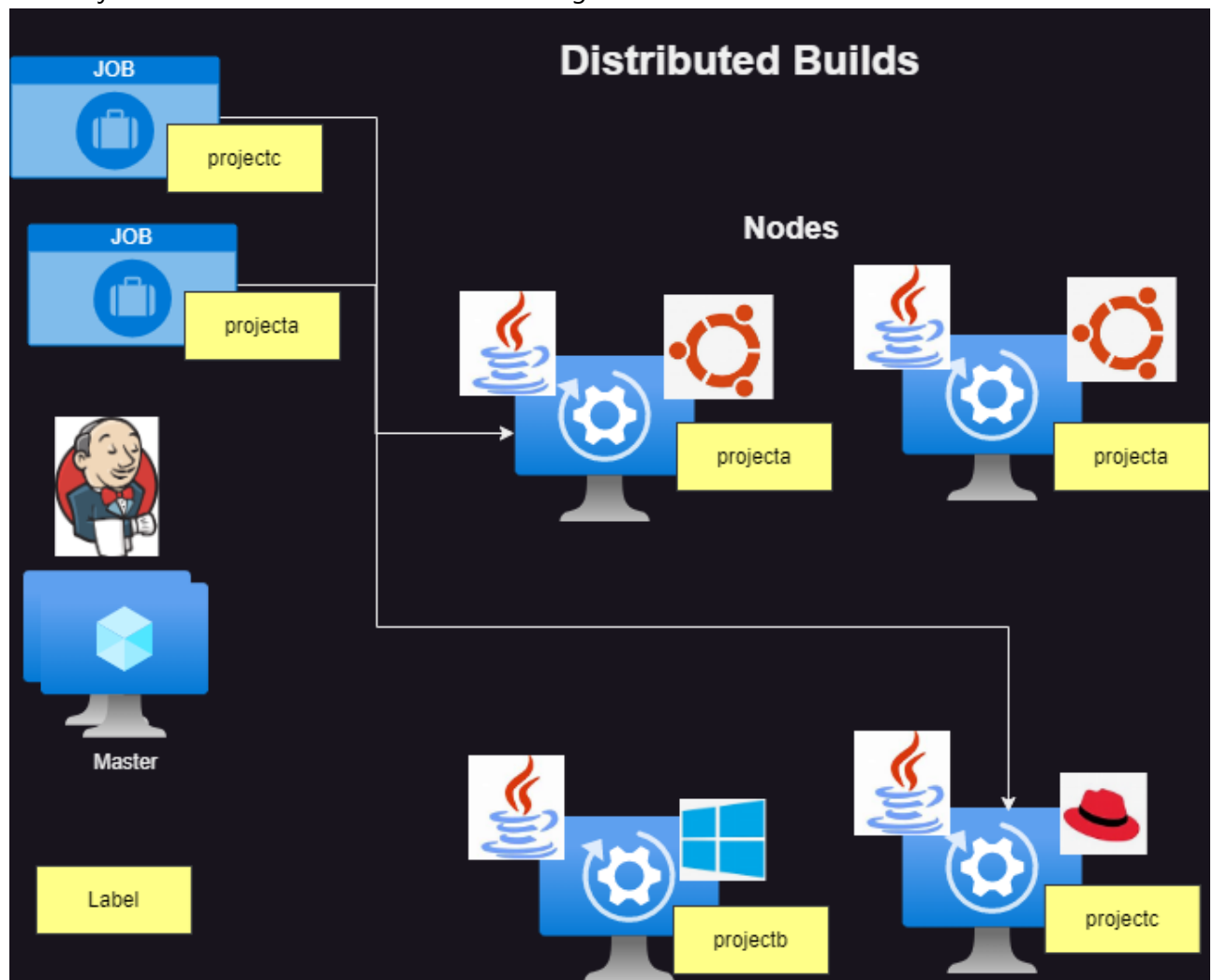
Filter...

Build	Status	Time
#2	Success	Apr 6, 2024, 3:17 AM
#1	Success	

## Distributed Builds

- We have a Jenkins Master(s) and Node(s)
- Each of Node will have a label.

- Jenkins jobs can be scheduled on nodes matching labels



## Configure a centos node with java 8

- purpose: building jdk 8 projects
- Adding a linux node to jenkins master
- Create a centos 7 node
- ssh into it
- Install jdk 8 for jenkins master to communicate with node

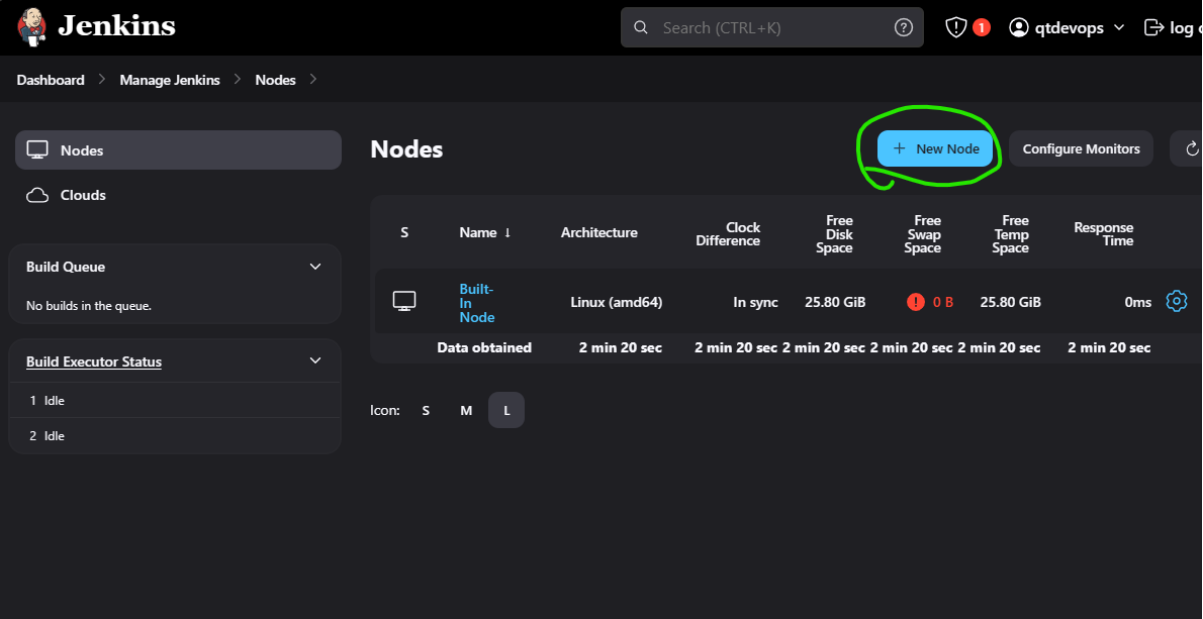
```
sudo yum install java-1.8.0-openjdk-devel -y
```

- Install maven and git


```
sudo yum install git maven -y
```

- Configure this node on Jenkins

- Navigate to Manage Jenkins => Nodes => New Node



The screenshot shows the Jenkins web interface. At the top, the Jenkins logo and a search bar are visible. Below the header, the breadcrumb navigation path is "Dashboard > Manage Jenkins > Nodes >". On the left sidebar, there are sections for "Nodes" (with a computer icon), "Clouds" (with a cloud icon), "Build Queue" (showing "No builds in the queue."), and "Build Executor Status" (showing two "Idle" executors). The main content area is titled "Nodes". In the top right of this area, a blue button labeled "+ New Node" is circled in green. To its right is a "Configure Monitors" button. Below these buttons is a table with the following columns: "S", "Name", "Architecture", "Clock Difference", "Free Disk Space", "Free Swap Space", "Free Temp Space", and "Response Time". The table contains one row for a node named "Built-In Node" with architecture "Linux (amd64)". The "Free Swap Space" column shows a red warning icon and "0 B". The "Response Time" column shows "0ms". Below the table, there is a row of labels: "Data obtained", "2 min 20 sec", "2 min 20 sec", "2 min 20 sec", "2 min 20 sec", "2 min 20 sec", and "2 min 20 sec". At the bottom left of the main area, there is a label "Icon:" followed by three buttons: "S", "M", and "L", with "L" being the selected button.

 **Jenkins**

Search (CTRL+K)

Dashboard > Manage Jenkins > Nodes > New node

## New node

Node name

node-1

Type

☒ Permanent Agent

Adds a plain, permanent agent to Jenkins. This is called "permanent" because Jenkins doesn't provide higher level of integration with these agents, such as dynamic provisioning. Select this type if no other agent types apply — for example such as when you are adding a physical computer, virtual machines managed outside Jenkins, etc.

Create

Dashboard > Manage Jenkins > Nodes > Manage

Only build jobs with label expressions matching this node

Launch method ?

Launch agents via SSH

Host ?

10.0.0.5

Credentials ?

devops/\*\*\*\*\* (Devops Service Account)

+ Add

Host Key Verification Strategy ?

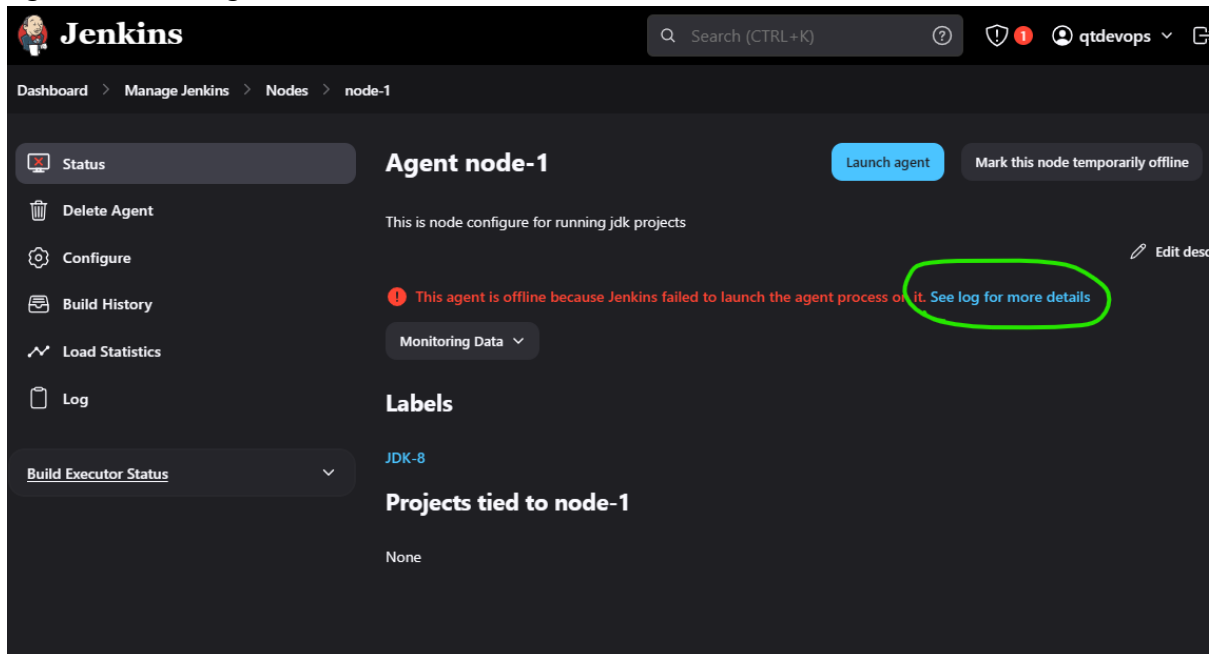
Non verifying Verification Strategy

Advanced

Save



- Agent is not configure due to



- To fix this install jdk-11 and ensure you follow classroom recording
- Do the same activity as exercise.

## Exercise

- Create a jenkins server and run any of
  - spring petclinic
  - nopcommerce
  - gameoflife