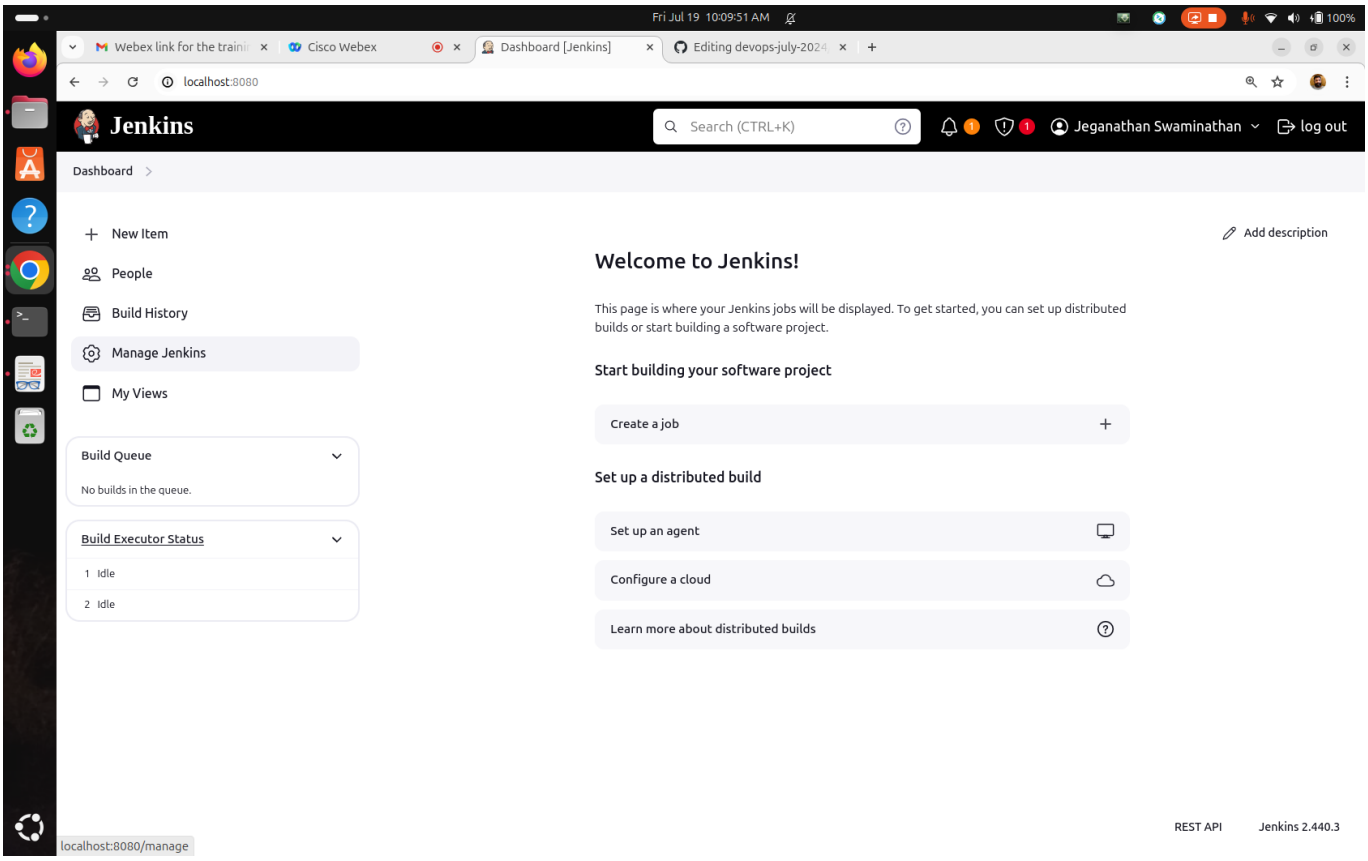
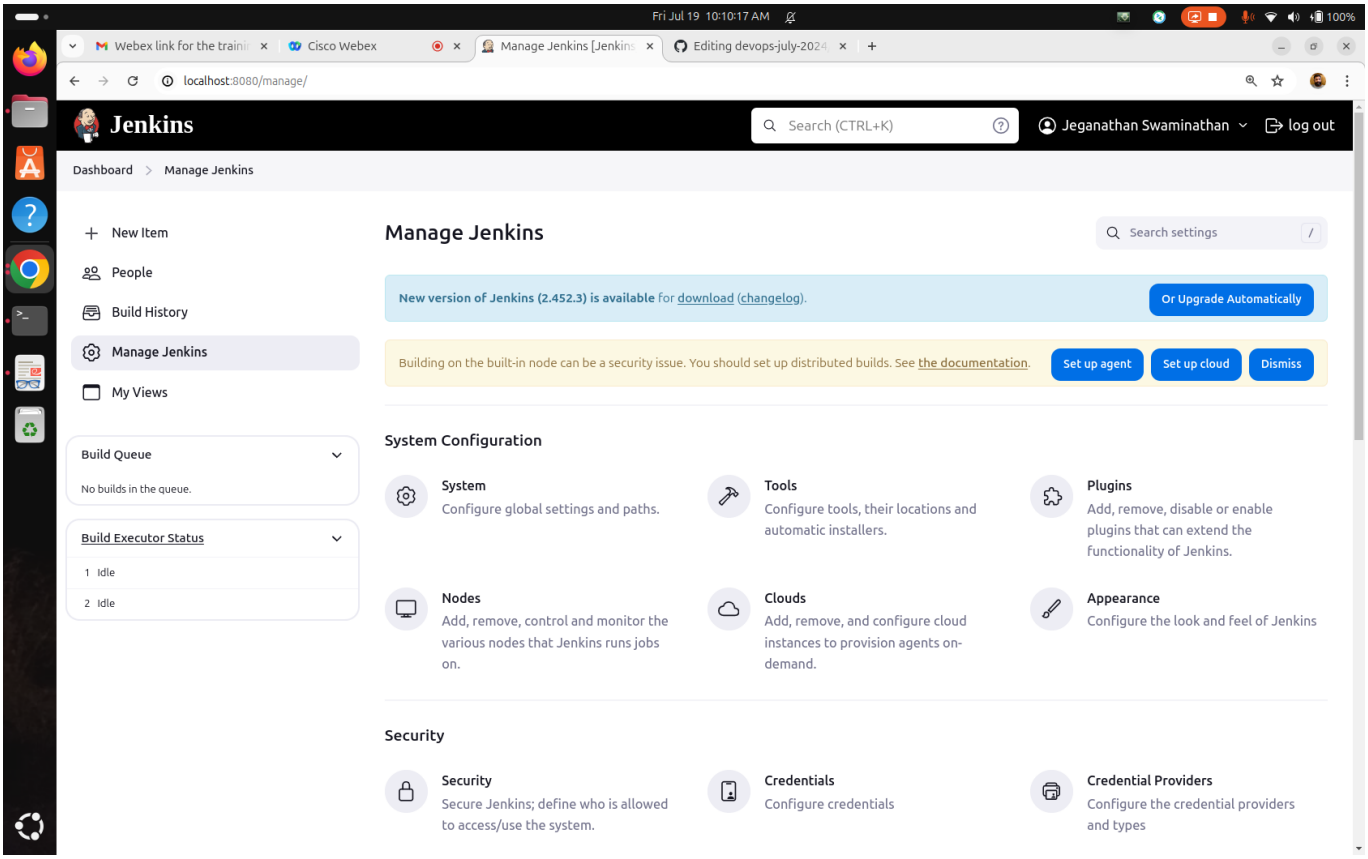
Day 5

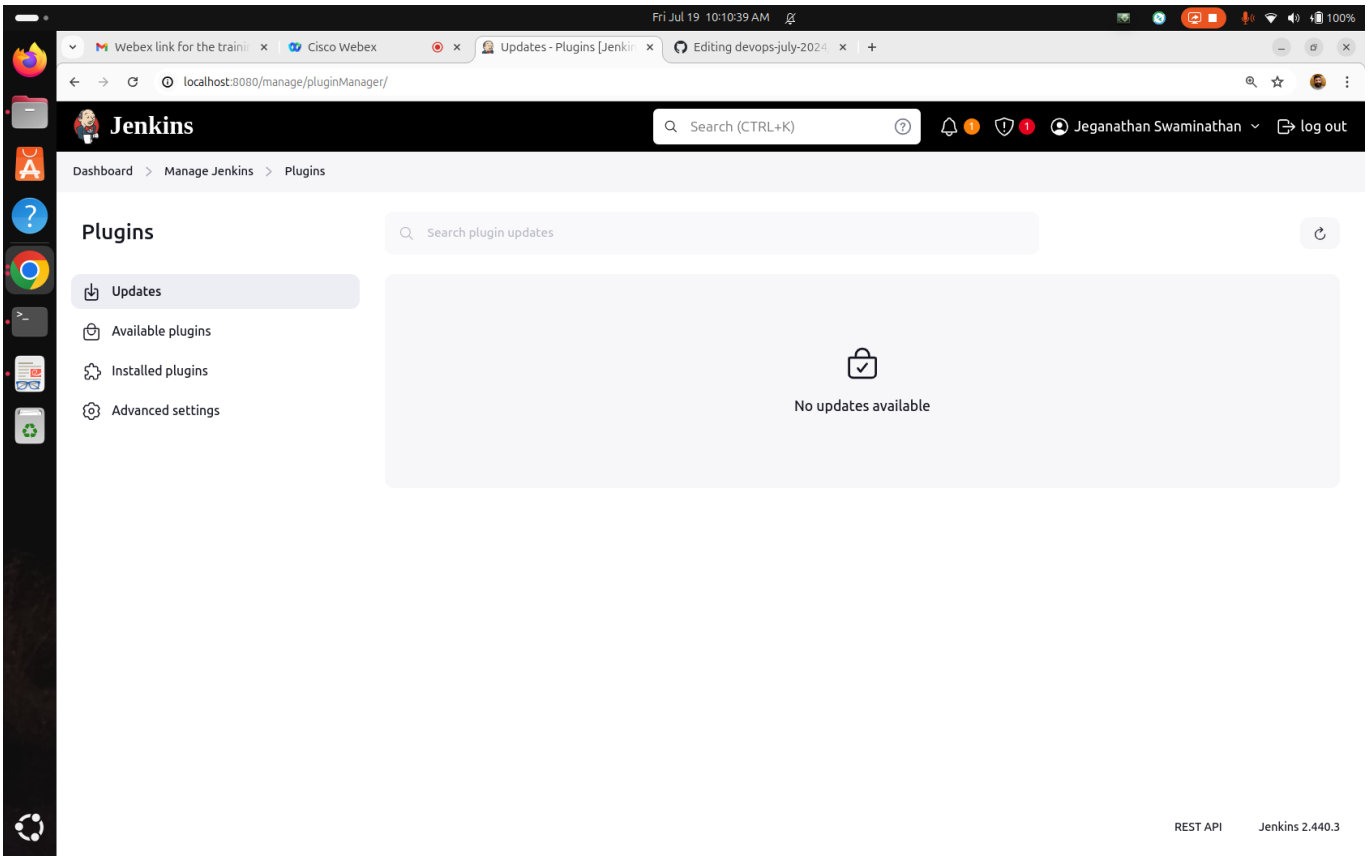
Lab - Installing Docker and Ansible Jenkins Plugins



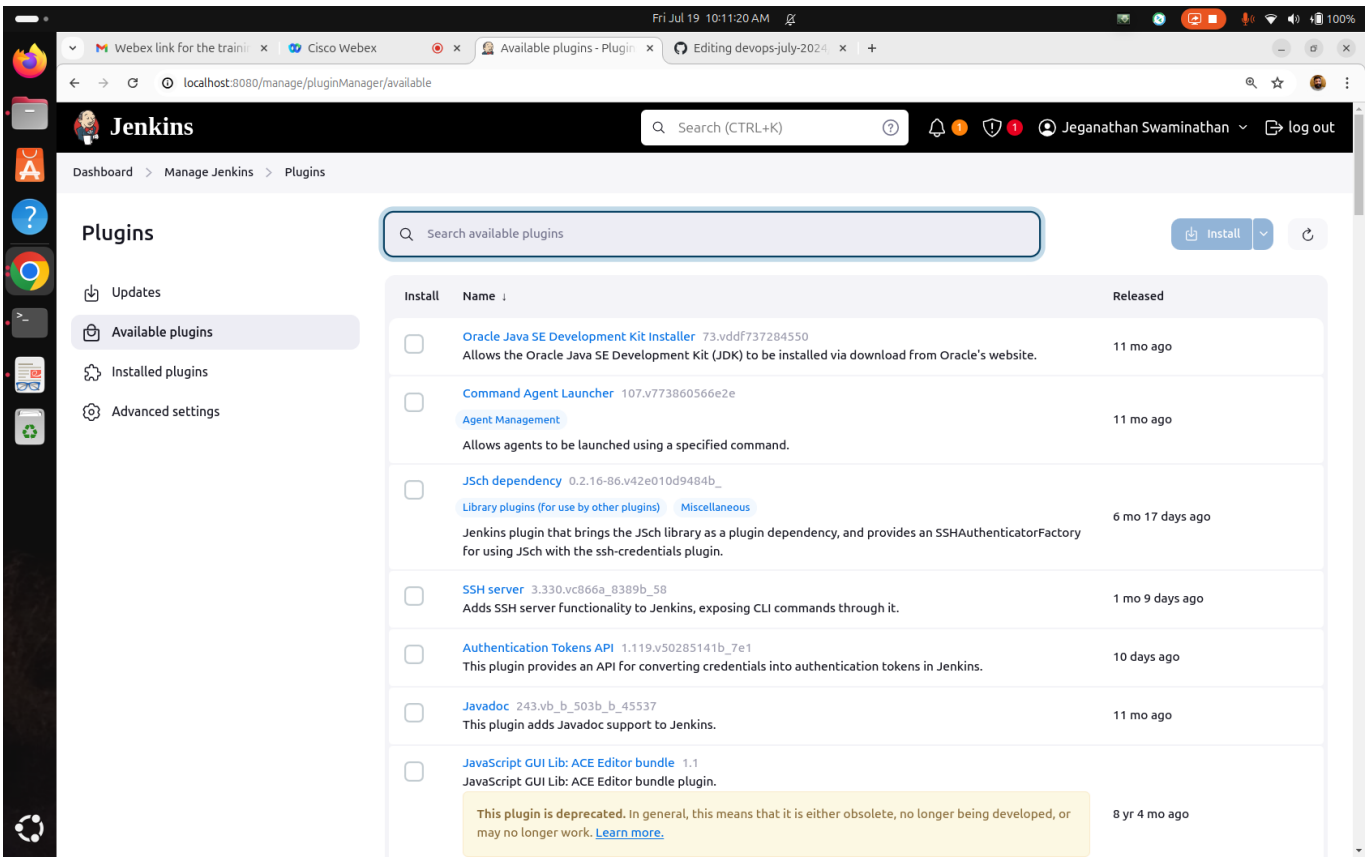
Click on "Manage Jenkins"



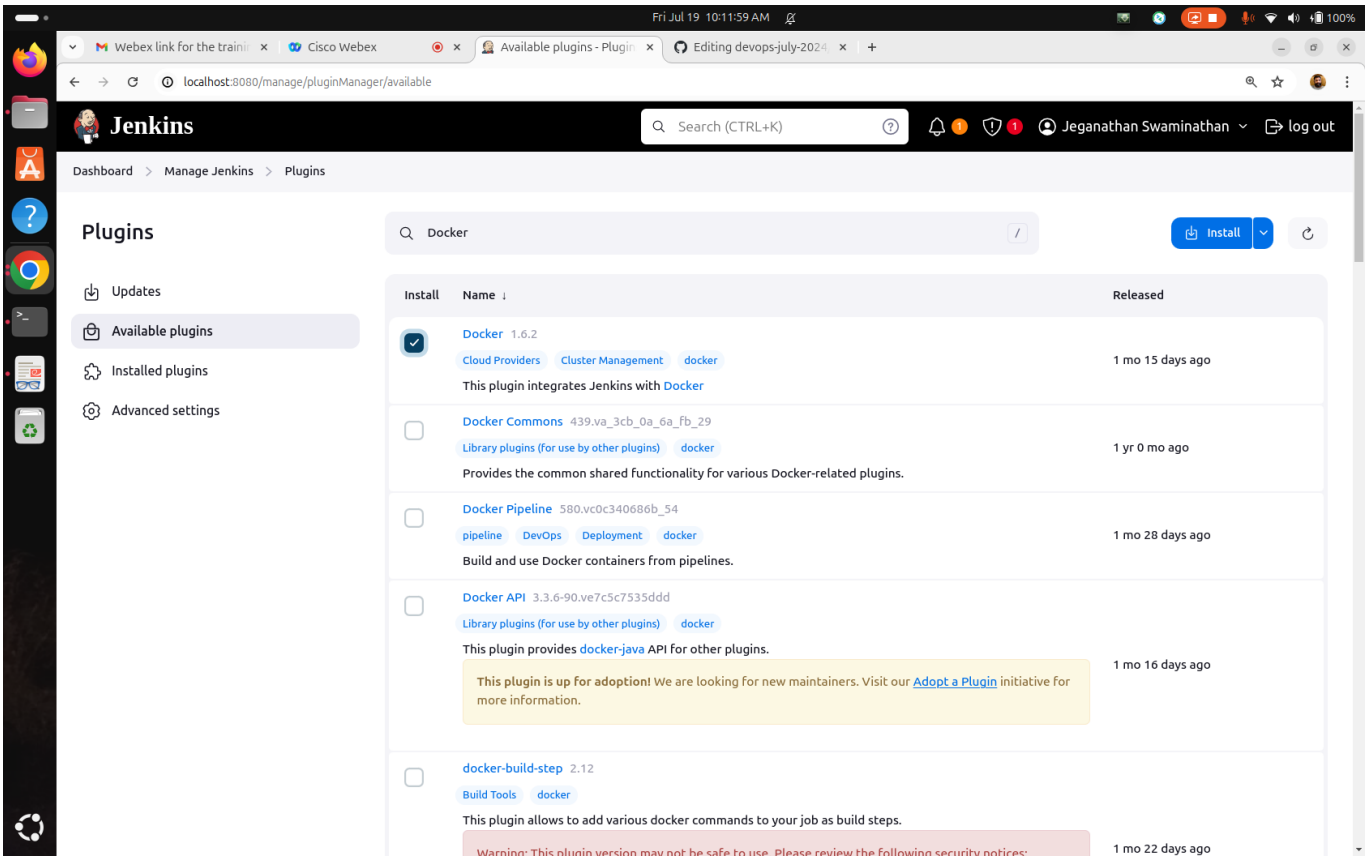
Click "Plugins"



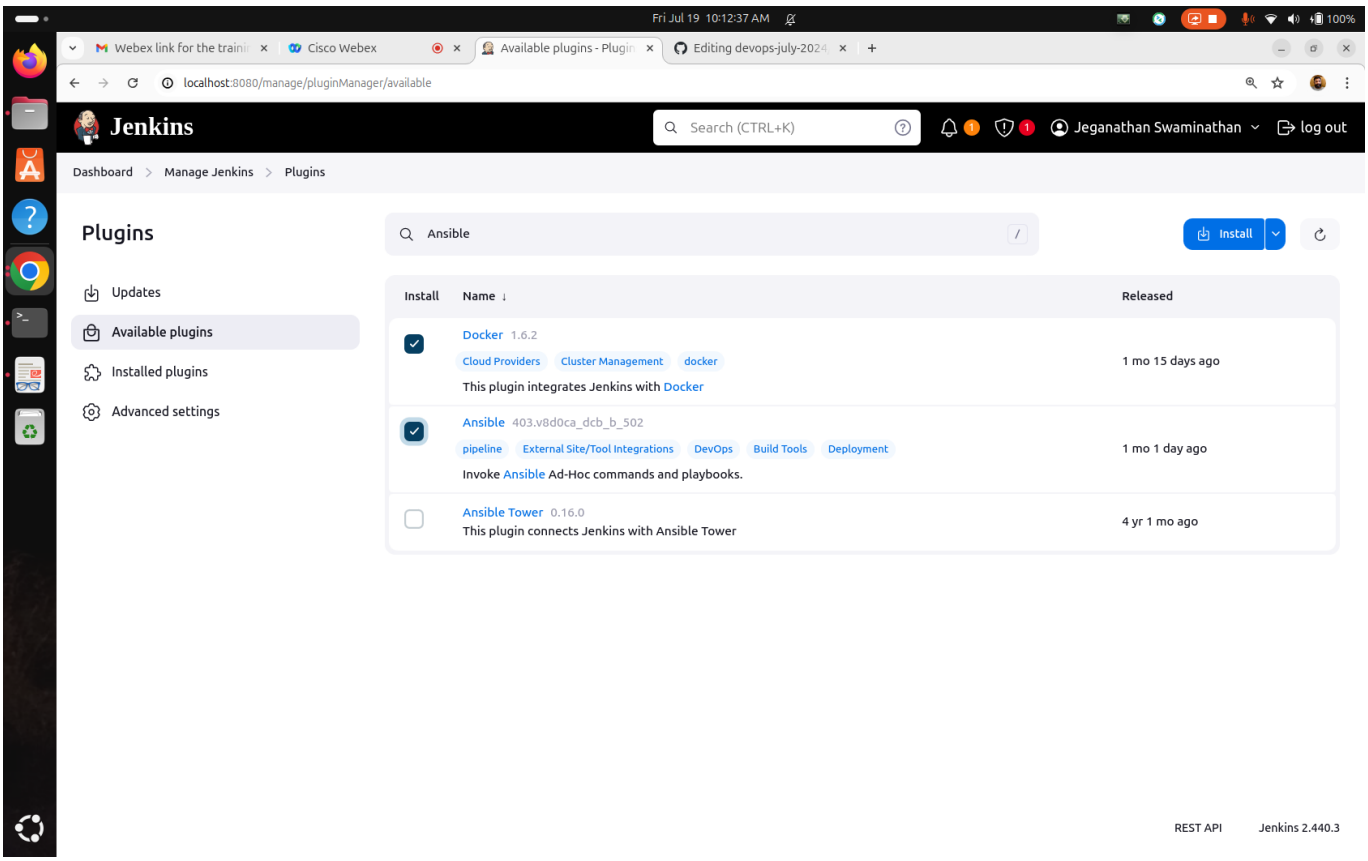
Select "Available Plugins"



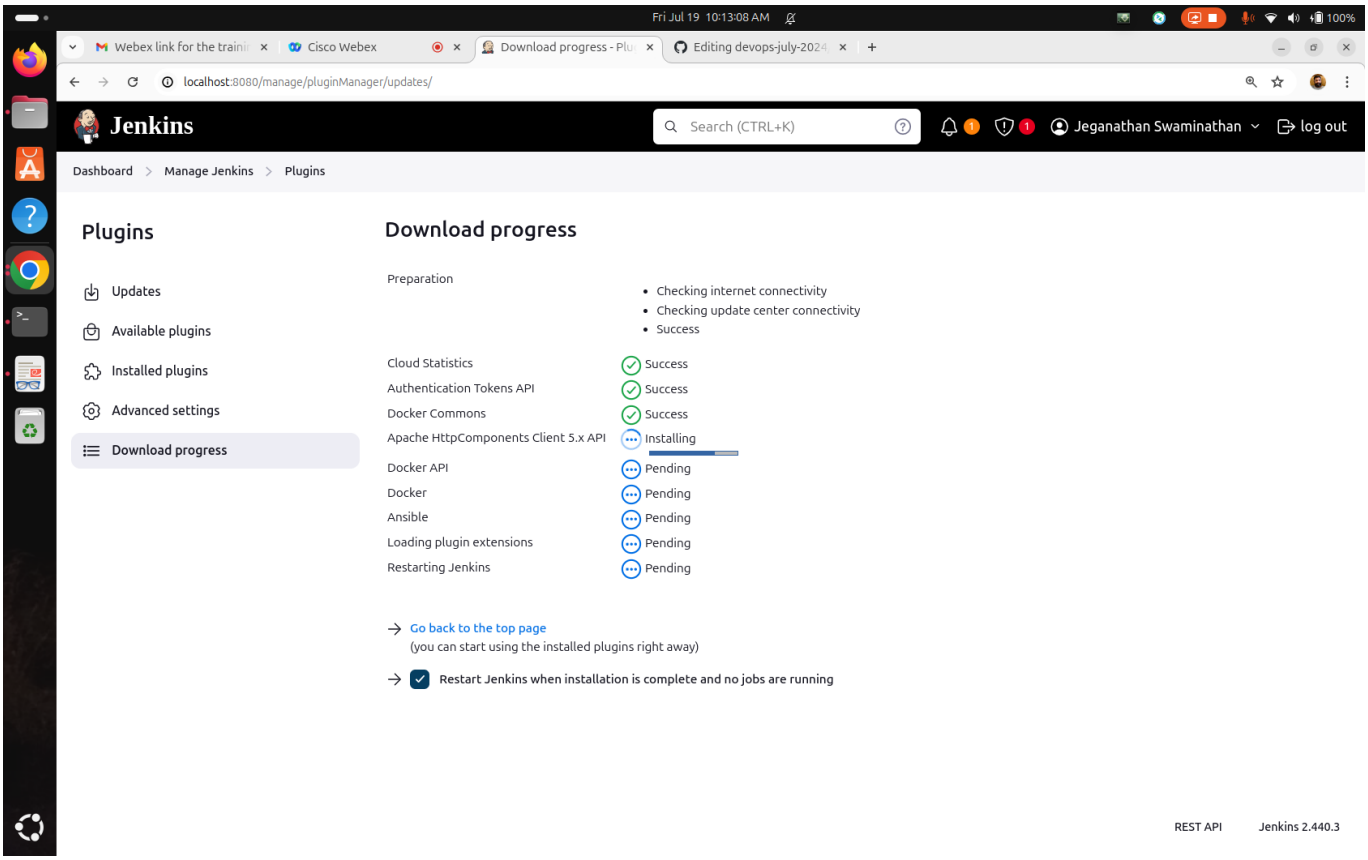
Search "Docker" and Select "Docker 1.6.2"



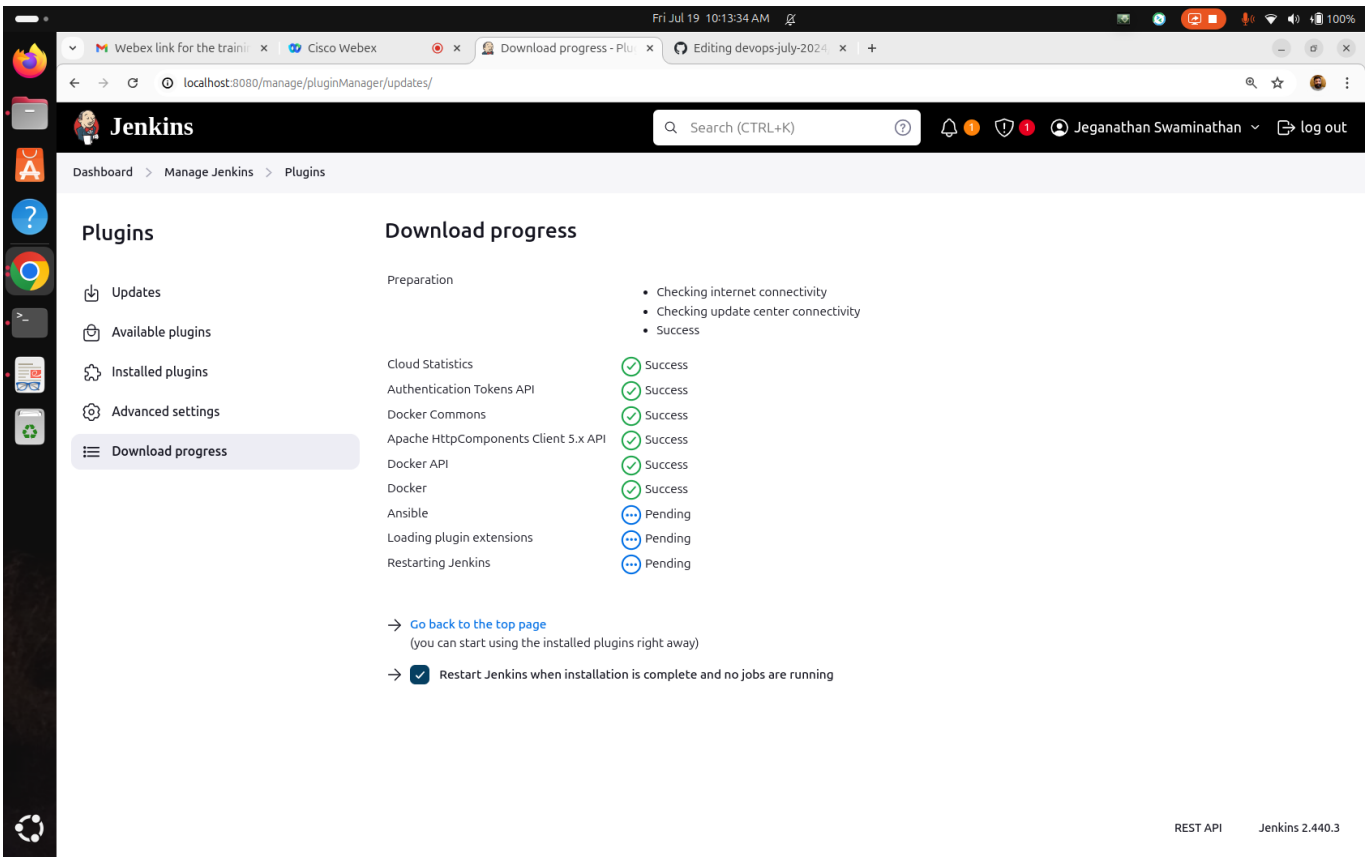
Search "Ansible" and Select "Ansible"



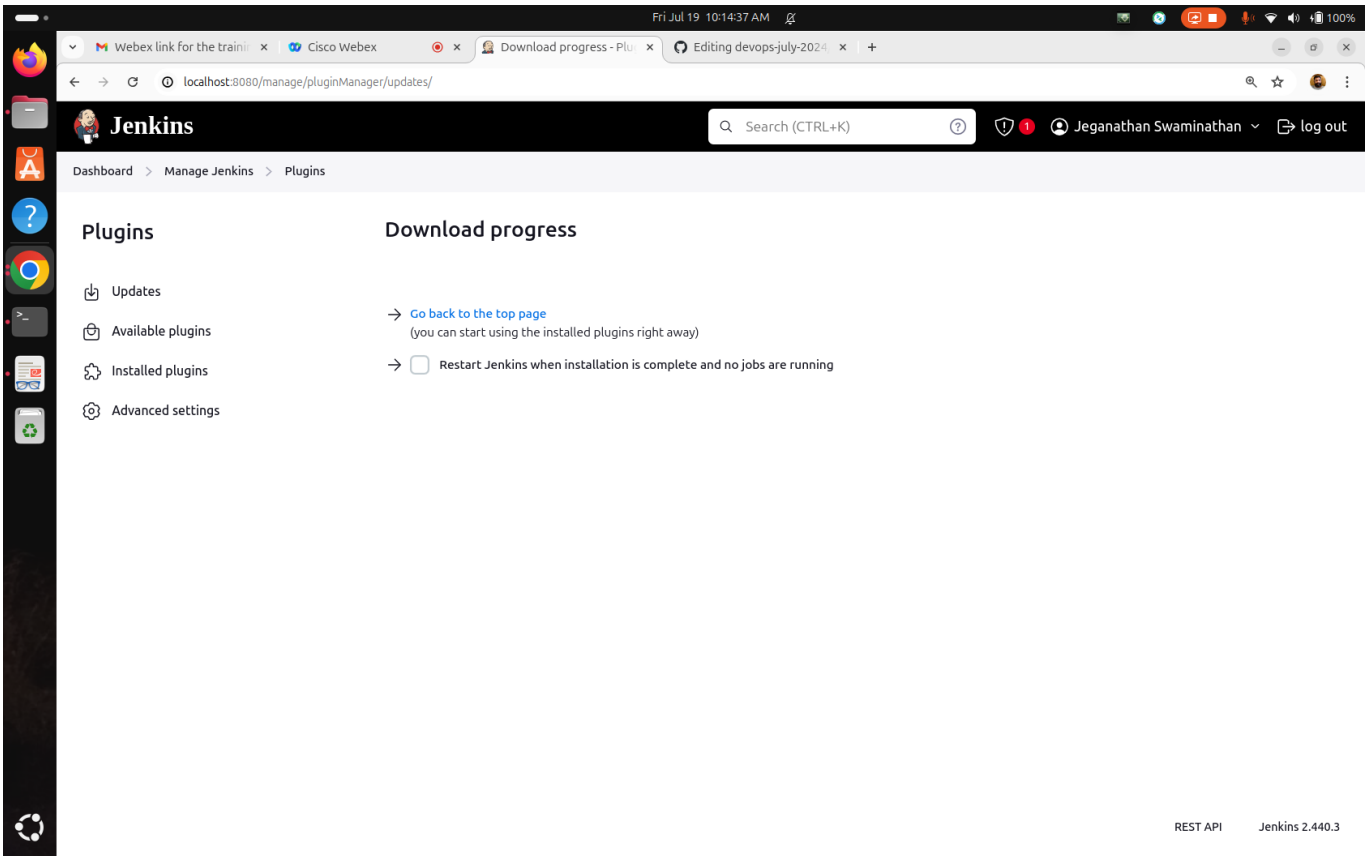
Click "Install"



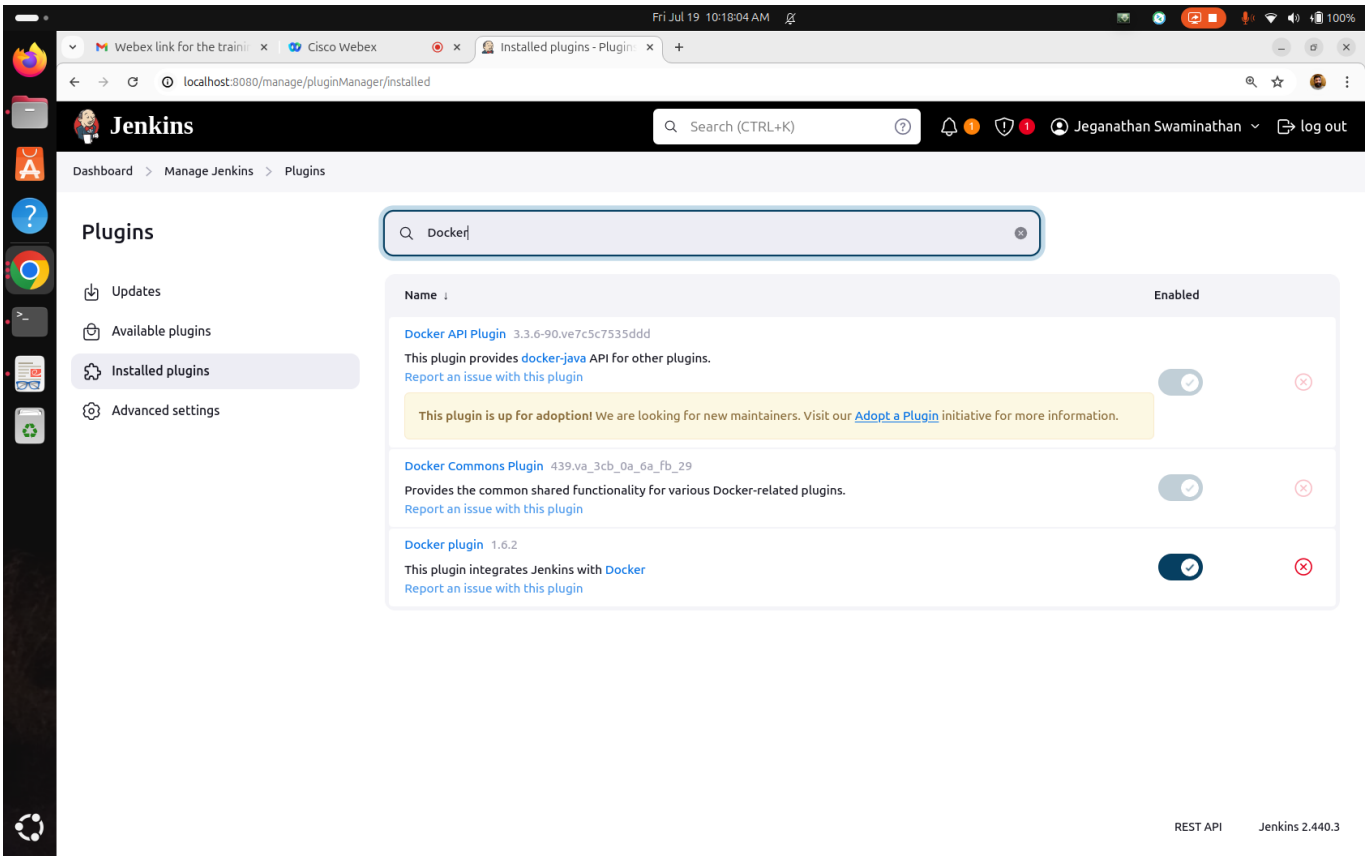
Select check "Restart Jenkins when installation is complete and no jobs are running"



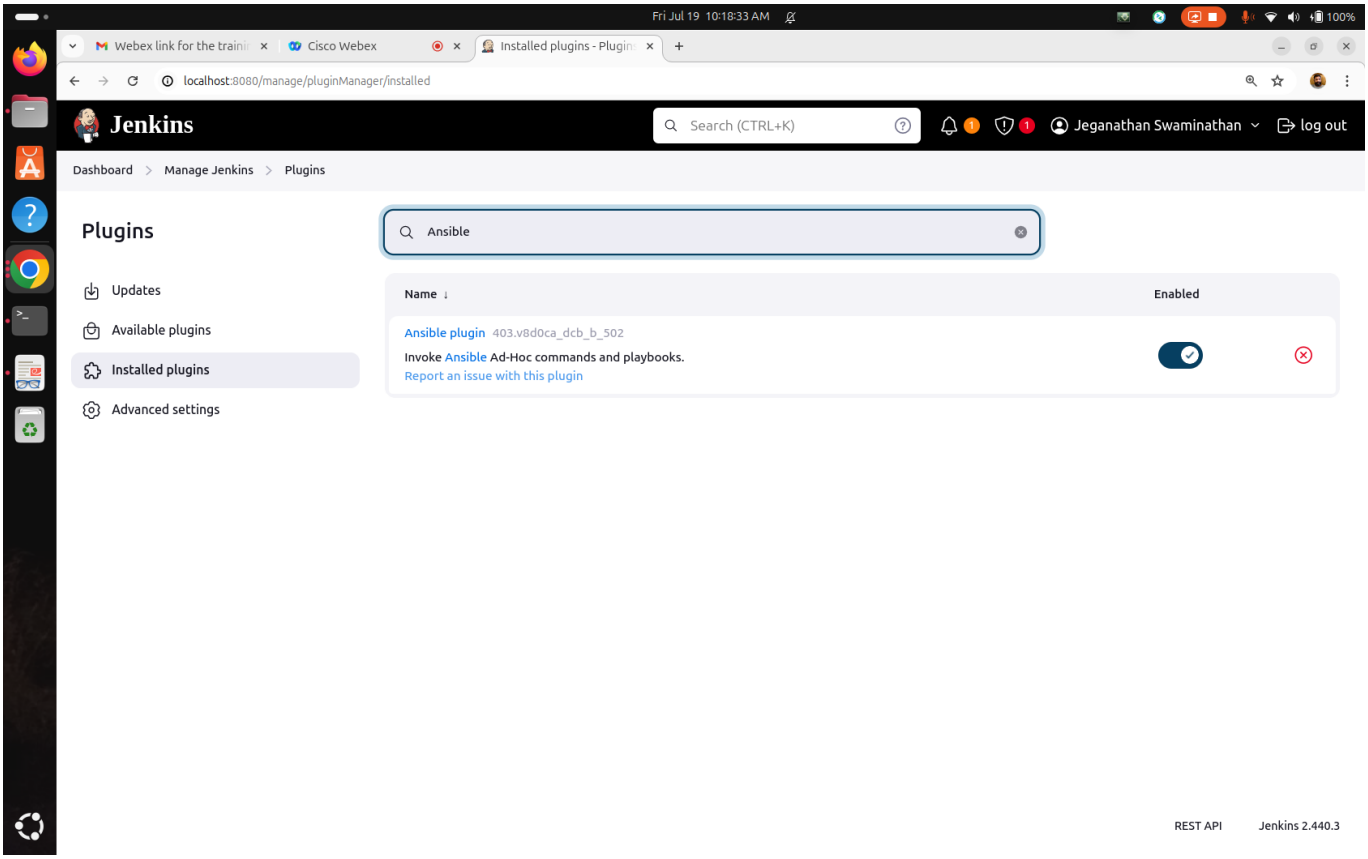
In case, you don't see any progress refresh your web browser page



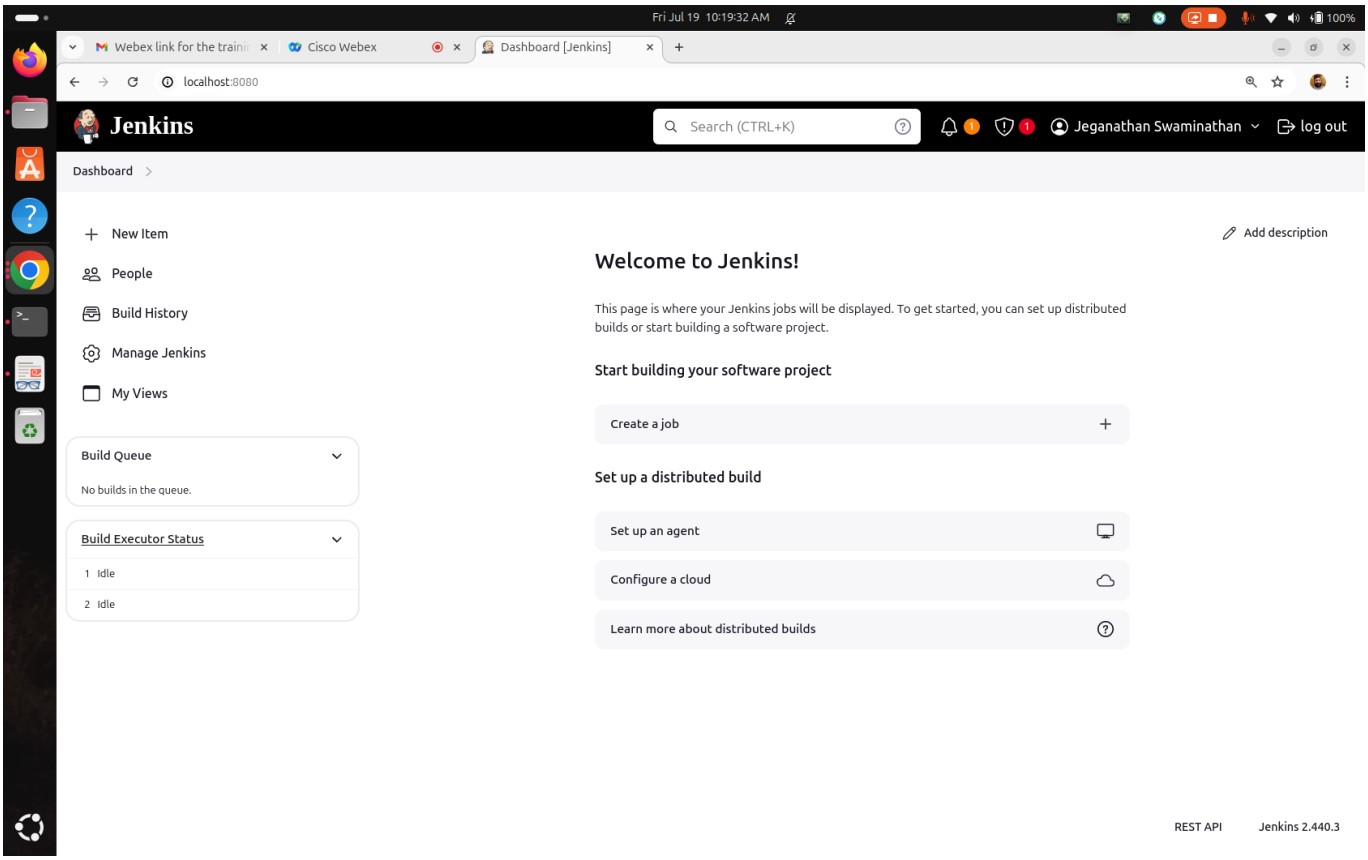
To verify if Docker and Ansible Plugins are installed, navigate to "Manage Jenkins" --> "Plugins" --> "Installed Plugins" and Search for Docker



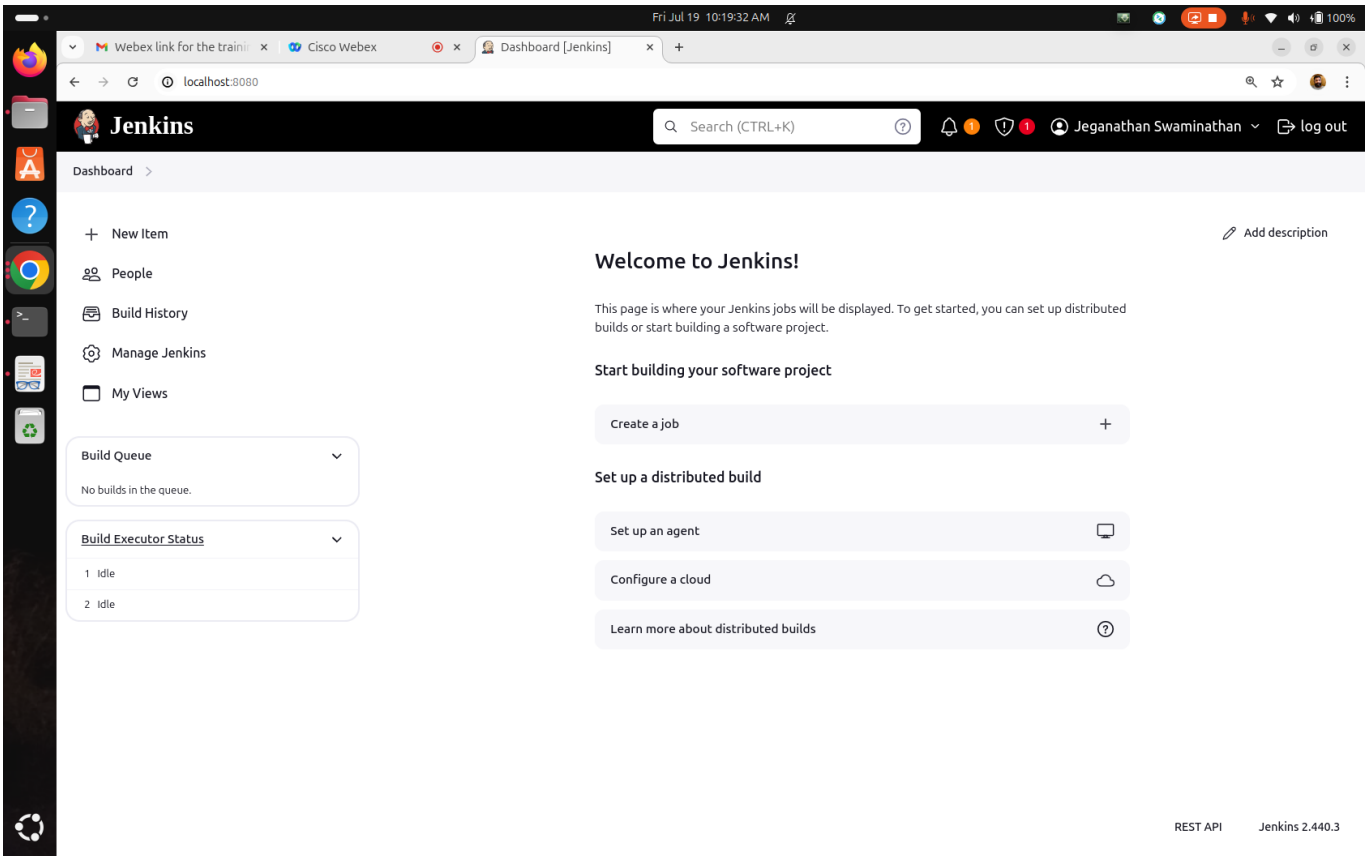
Clear Search and search for Ansible



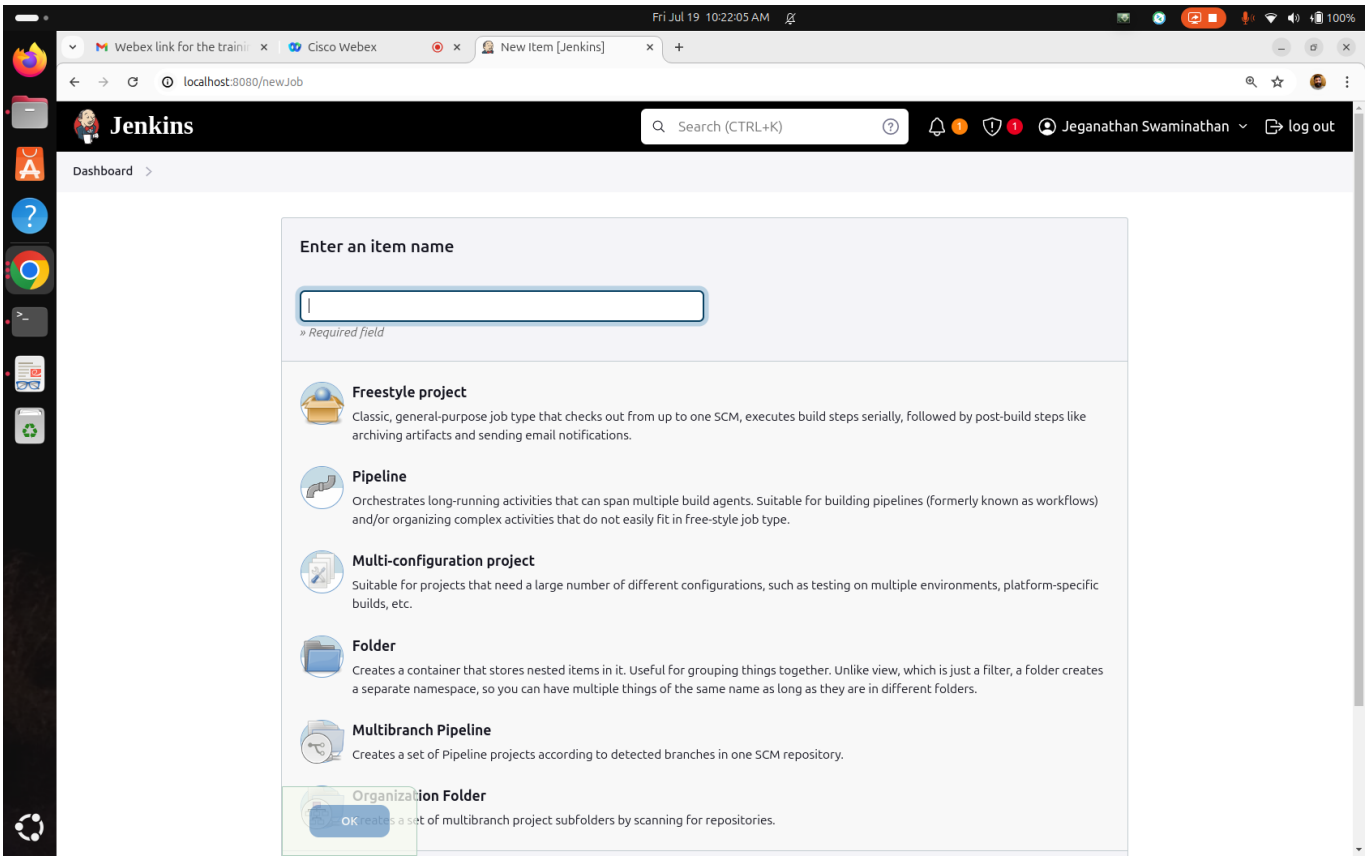
Once you have confirmed that all necessary plugins are installed, let's go back to the Jenkins Dashboard landing page



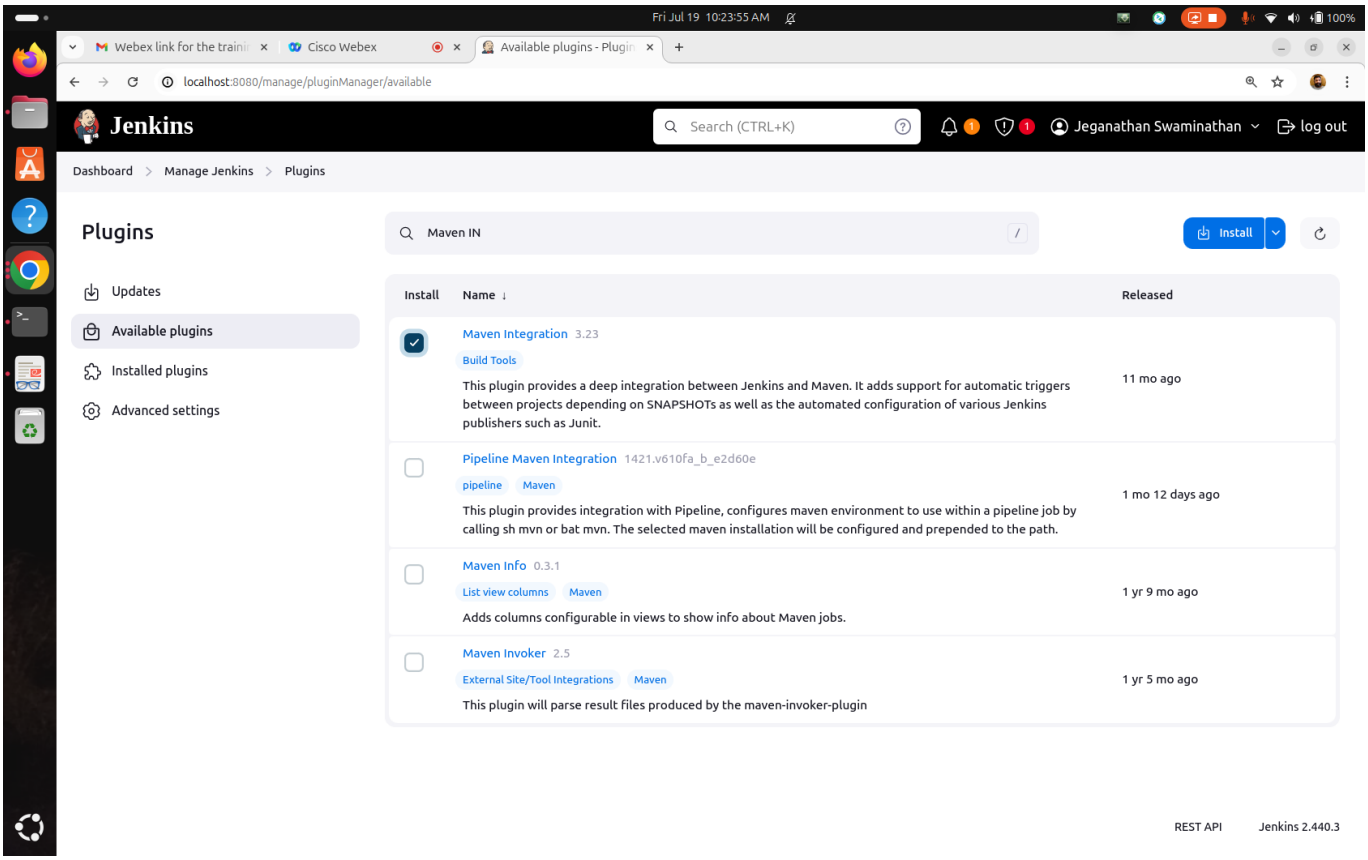
Lab - Creating a Maven style Jenkins Job

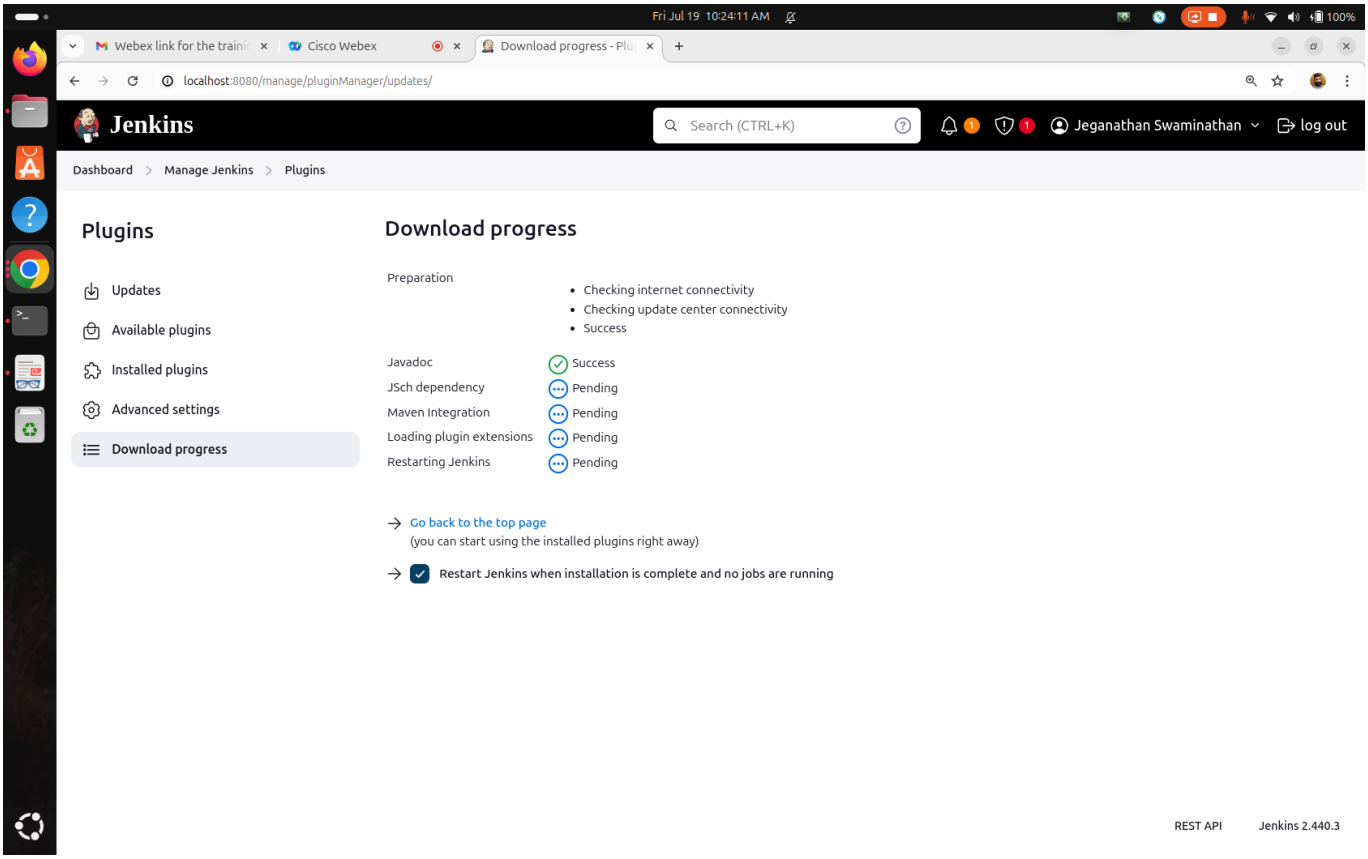


In the center of the Jenkins page click "Create a Job" or you may click "Create Item" from the menu shown in the left side.



As the Maven style Job is missing, we need to install "Maven Integration Plugin". Navigate to "Manage Jenkins" --> "Plugins" --> "Available Plugins" search for "Maven Integration" and install and restart.


Fri Jul 19 10:23:55 AM
Webex link for the traini
Cisco Webex
Available plugins - Plugin
localhost:8080/manage/pluginManager/available
Jenkins
Search (CTRL+K)
Jeganathan Swaminathan
log out
Dashboard > Manage Jenkins > Plugins
Plugins
Updates
Available plugins
Installed plugins
Advanced settings
Maven IN
Install
Install
Name ↓
Released
Maven Integration 3.23
Build Tools
This plugin provides a deep integration between Jenkins and Maven. It adds support for automatic triggers between projects depending on SNAPSHOTs as well as the automated configuration of various Jenkins publishers such as Junit.
11 mo ago
Pipeline Maven Integration 1421.v610fa_b_e2d60e
pipeline
Maven
This plugin provides integration with Pipeline, configures maven environment to use within a pipeline job by calling sh mvn or bat mvn. The selected maven installation will be configured and prepended to the path.
1 mo 12 days ago
Maven Info 0.3.1
List view columns
Maven
Adds columns configurable in views to show info about Maven jobs.
1 yr 9 mo ago
Maven Invoker 2.5
External Site/Tool Integrations
Maven
This plugin will parse result files produced by the maven-invoker-plugin
1 yr 5 mo ago
REST API
Jenkins 2.440.3


Fri Jul 19 10:24:11 AM
Webex link for the traini
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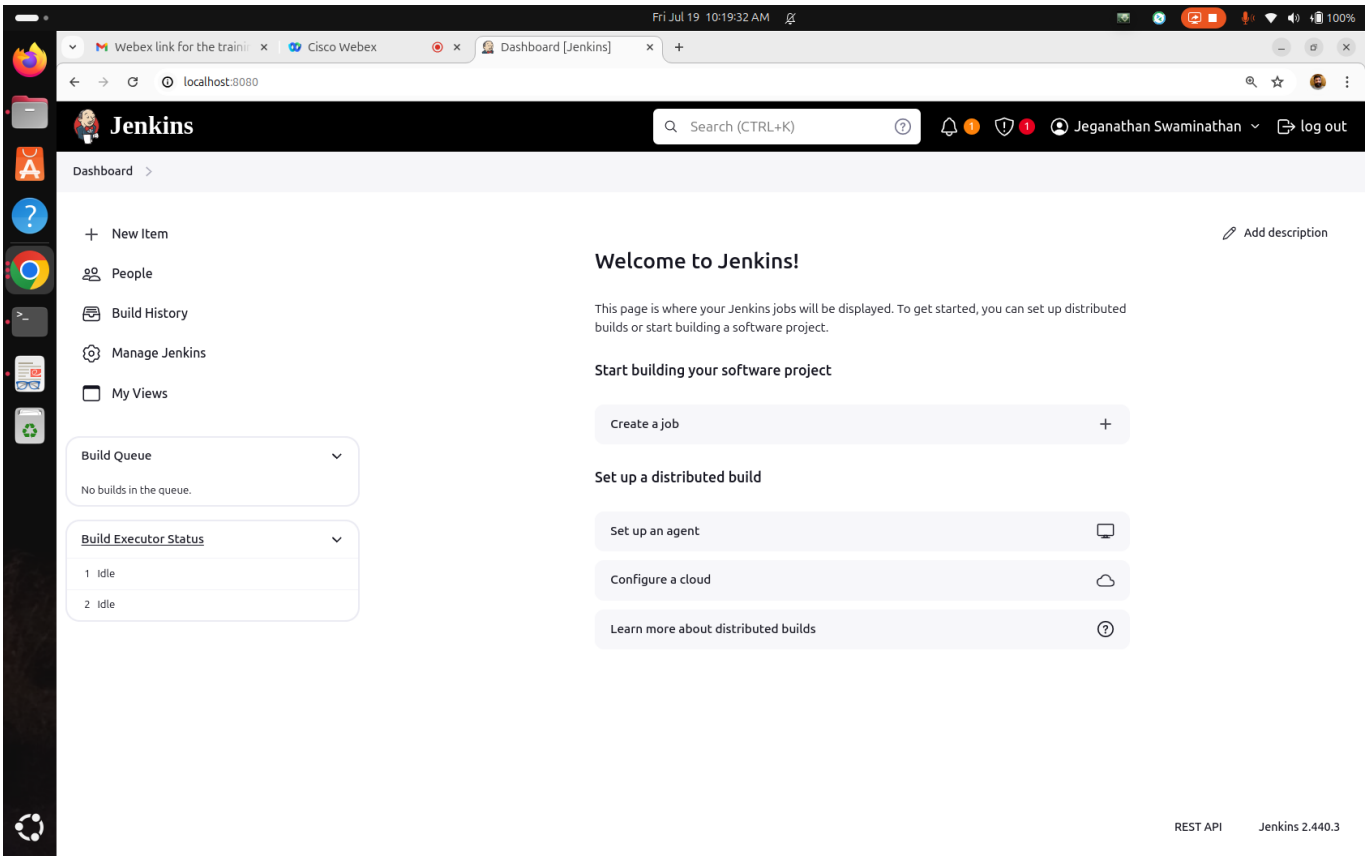
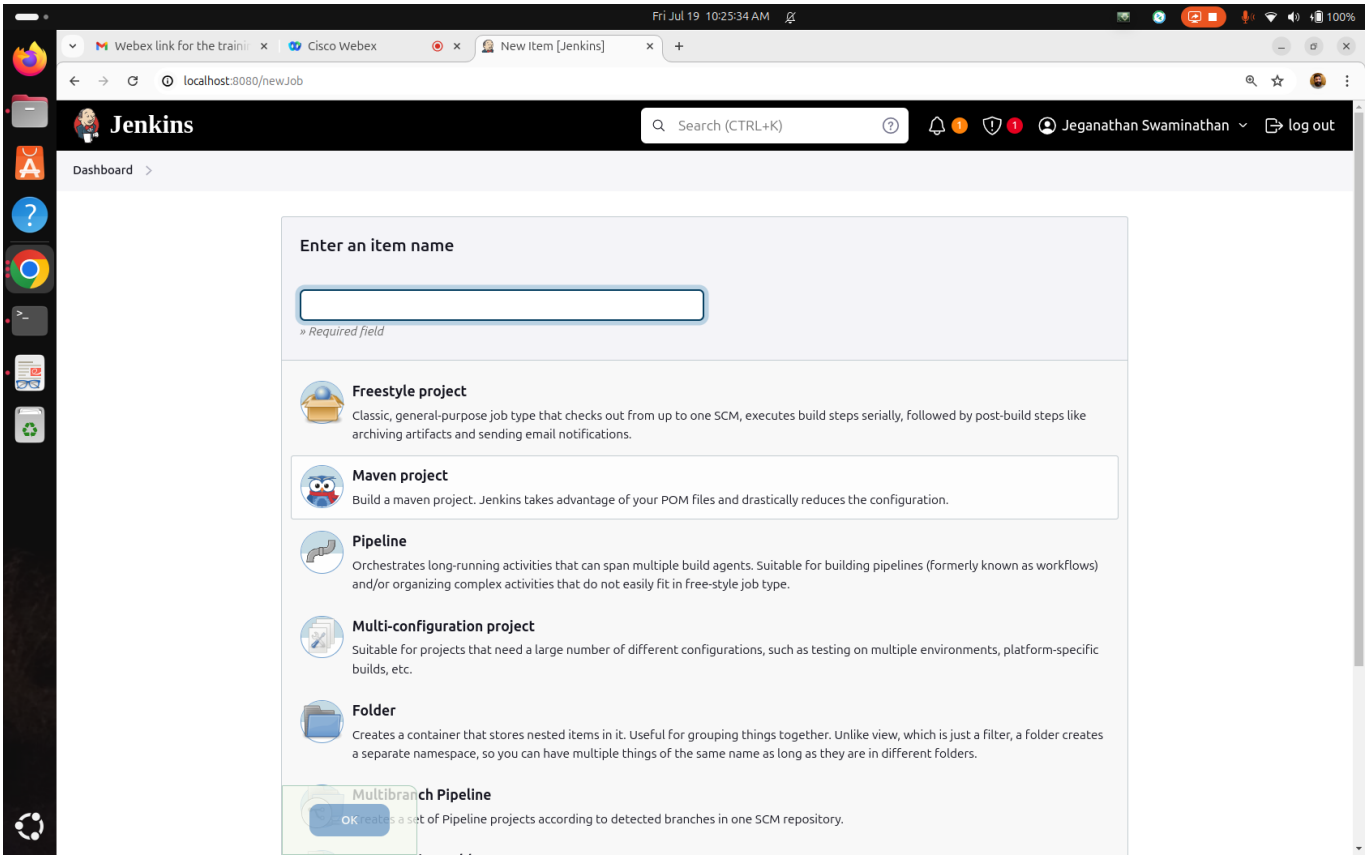
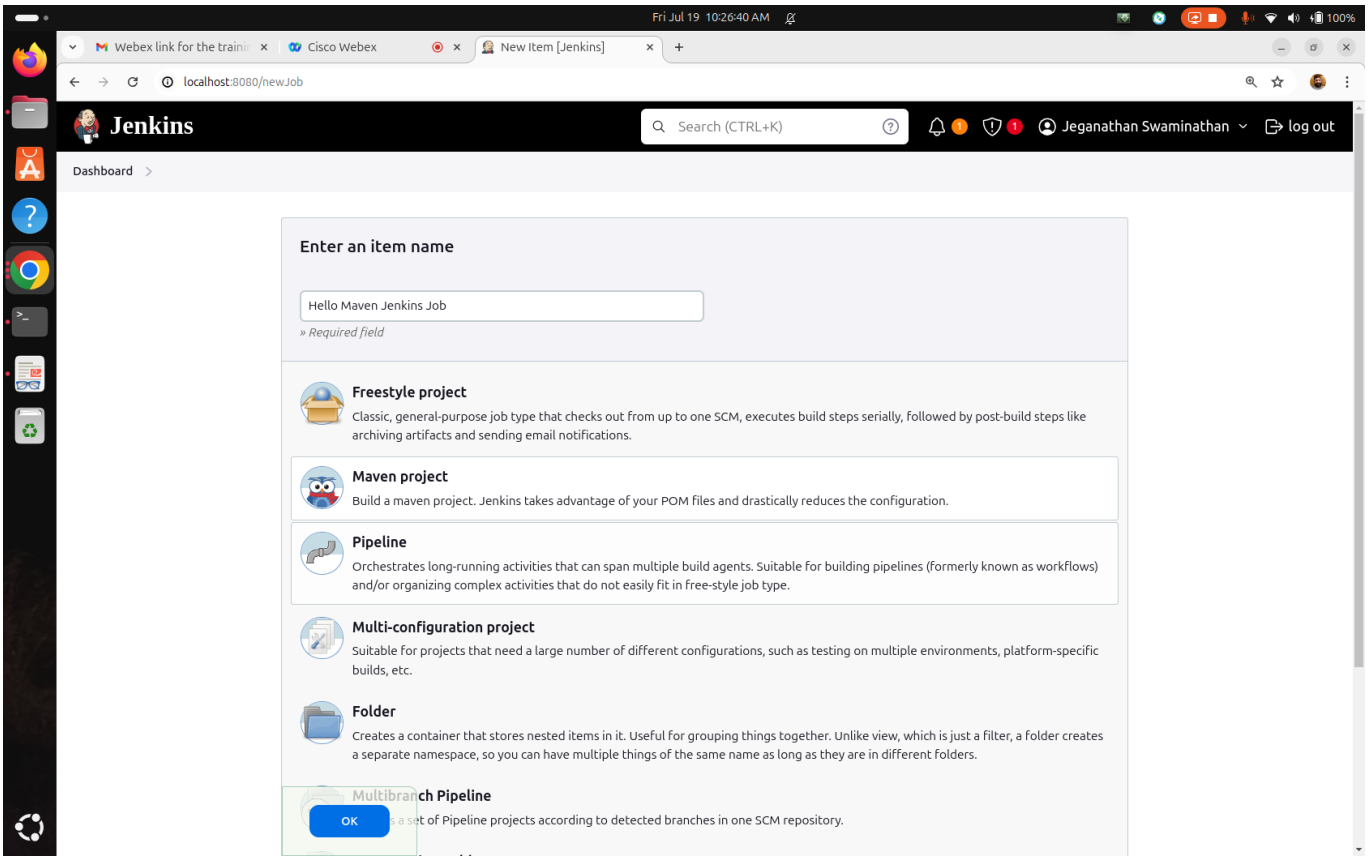
Download progress - Plu
localhost:8080/manage/pluginManager/updates/
Jenkins
Search (CTRL+K)
Jeganathan Swaminathan
log out
Dashboard > Manage Jenkins > Plugins
Plugins
Updates
Available plugins
Installed plugins
Advanced settings
Download progress
Download progress
Preparation
Checking internet connectivity
Checking update center connectivity
Success
Javadoc
Success
JSch dependency
Pending
Maven Integration
Pending
Loading plugin extensions
Pending
Restarting Jenkins
Pending
Go back to the top page
(you can start using the installed plugins right away)
Restart Jenkins when installation is complete and no jobs are running
REST API
Jenkins 2.440.3



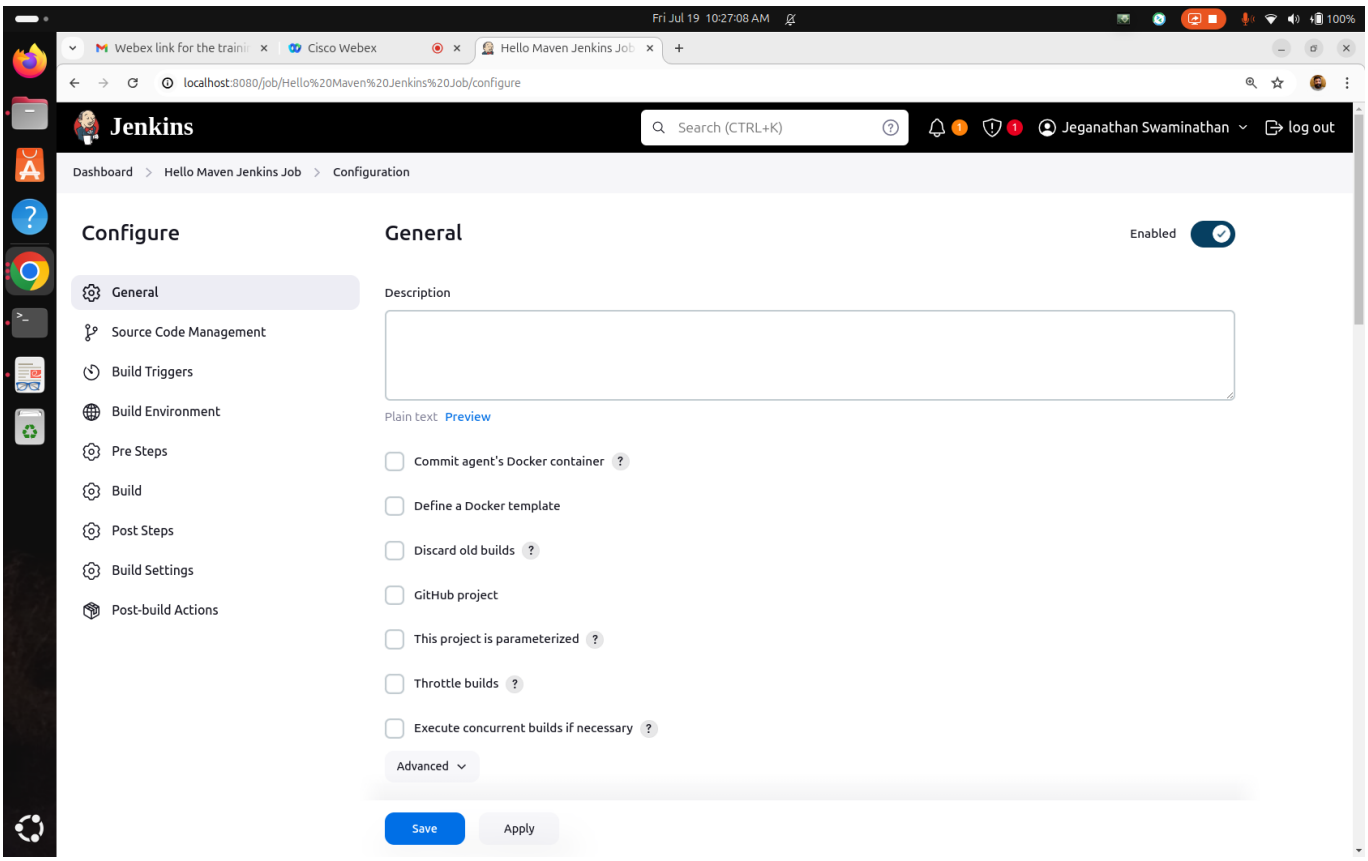
From the landing page, let's click "Create a Job"



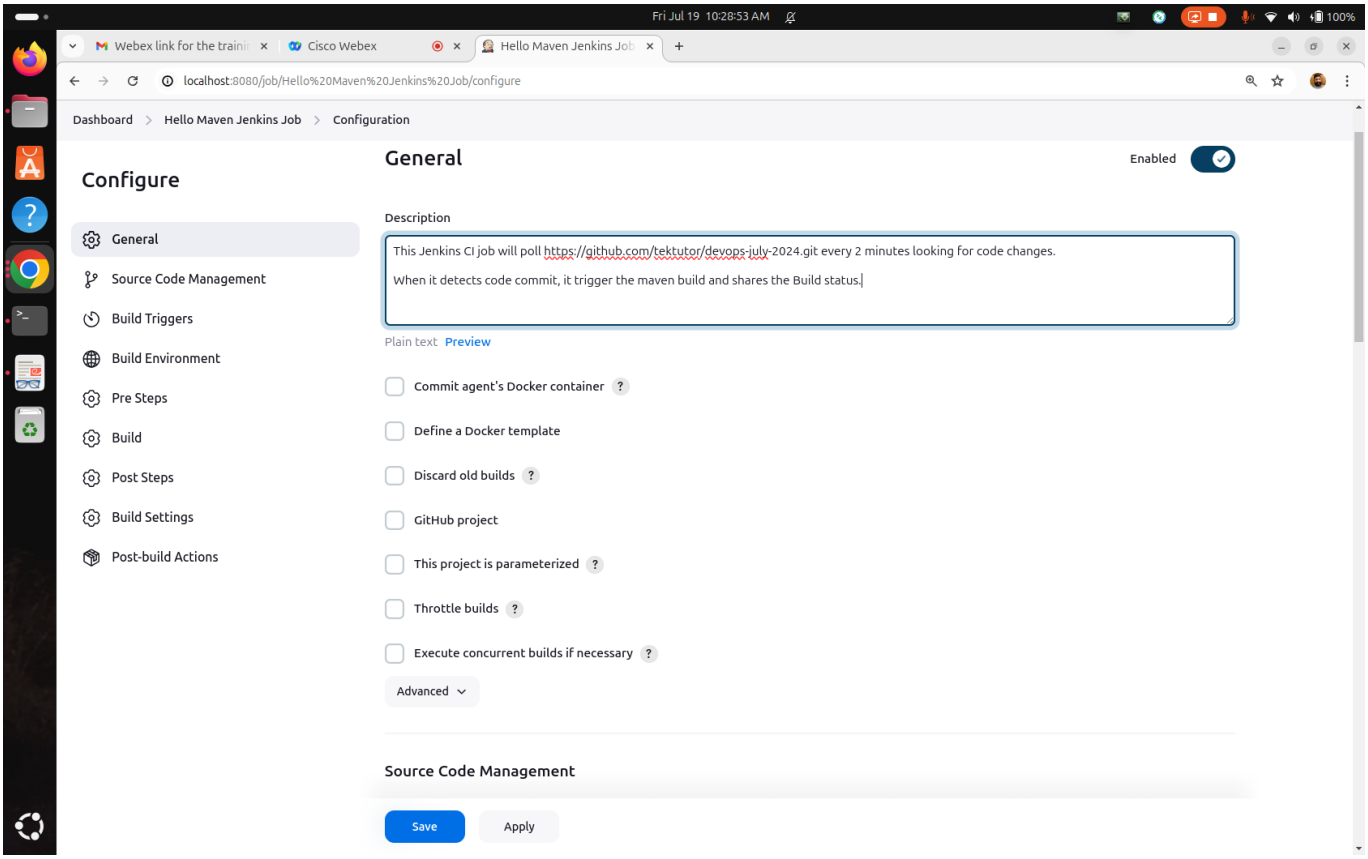
Select "Maven Project" and type "Hello Maven Jenkins Job" under Enter an item name



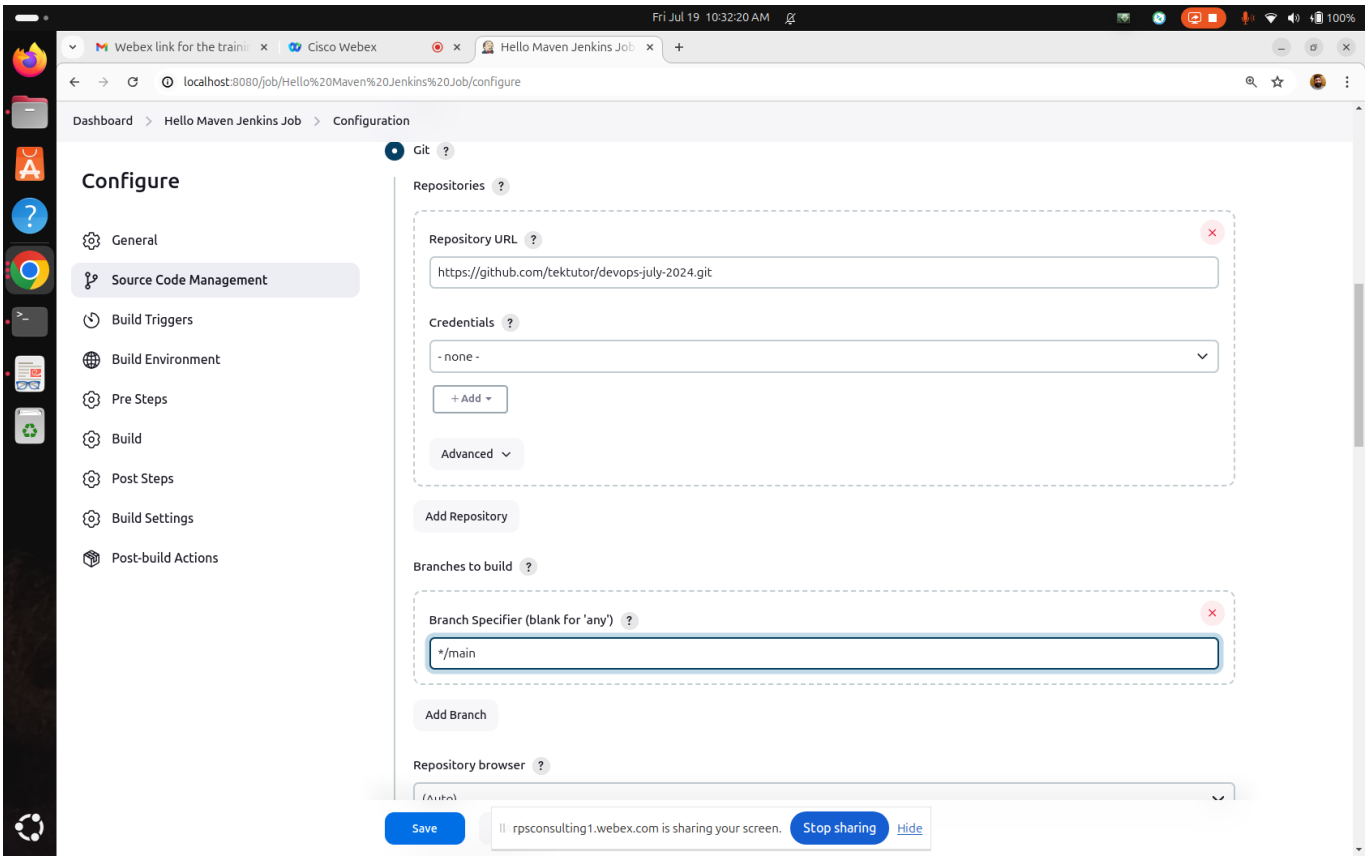
Click "ok" button



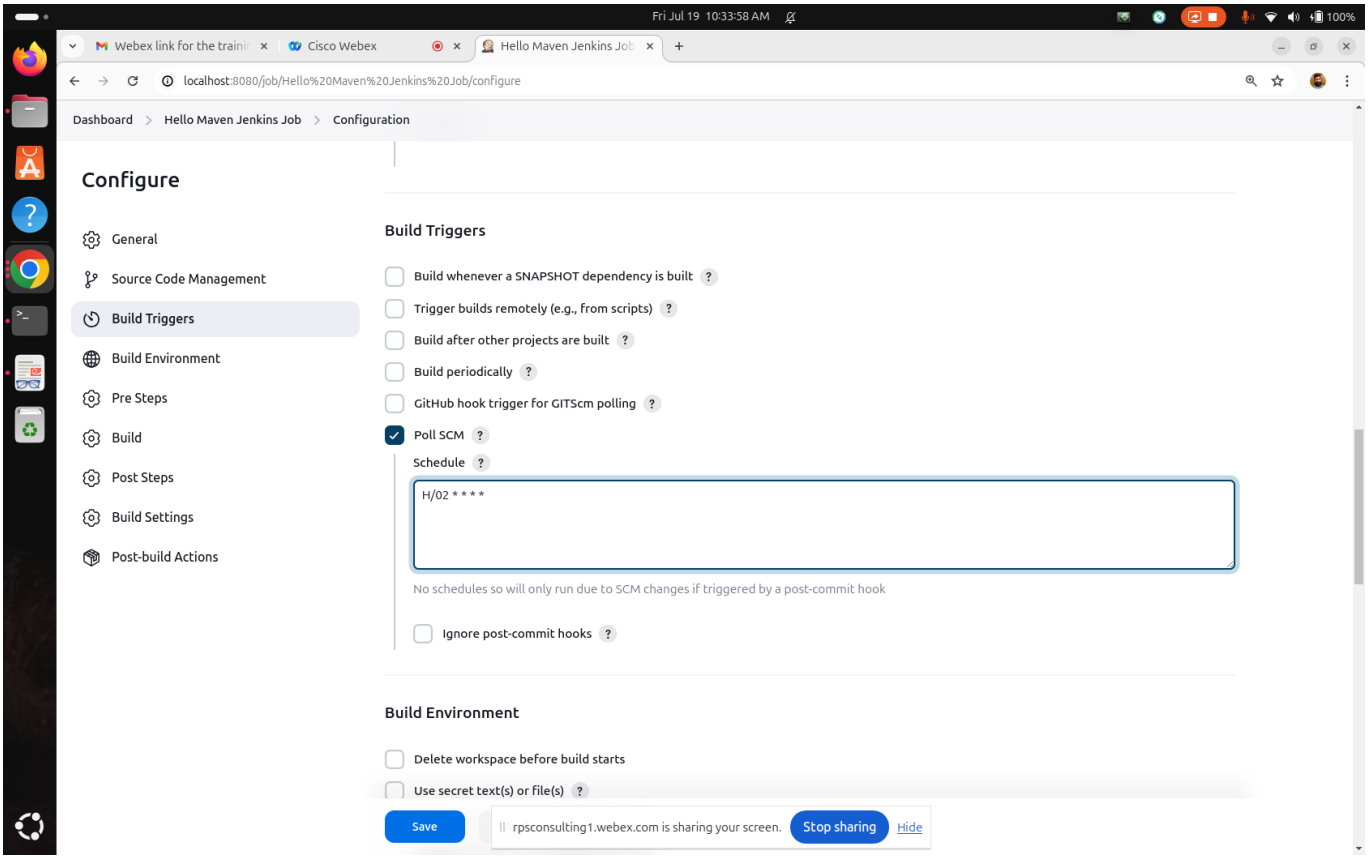
General Section



Source Code Management Select "Git" and type https://github.com/tektutor/devops-july-2024.git under "Repository Url" Under Branches to build, replace "master" with "main" branch

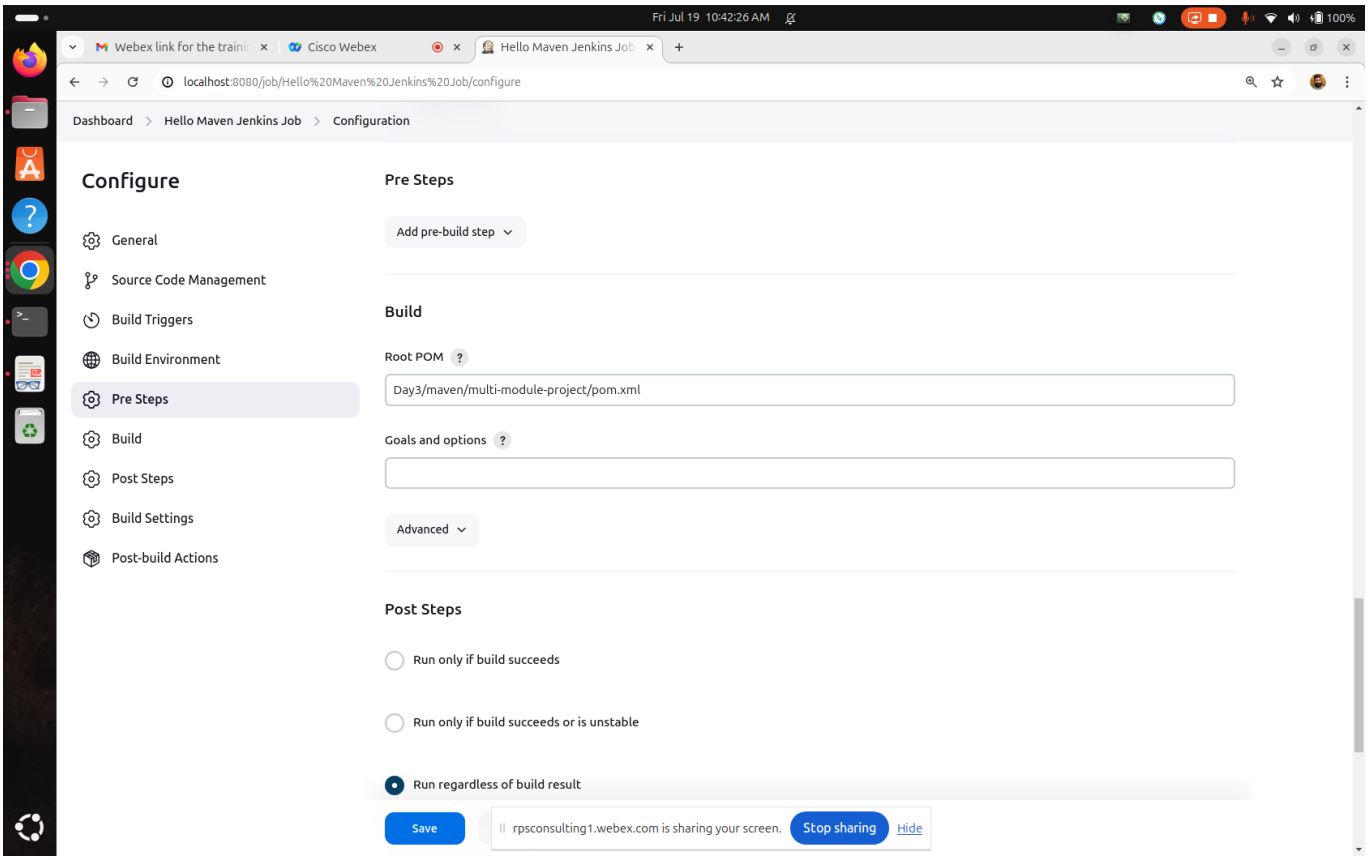


Triggers Select "Poll SCM" and type "H/02 * * * *" under schedule

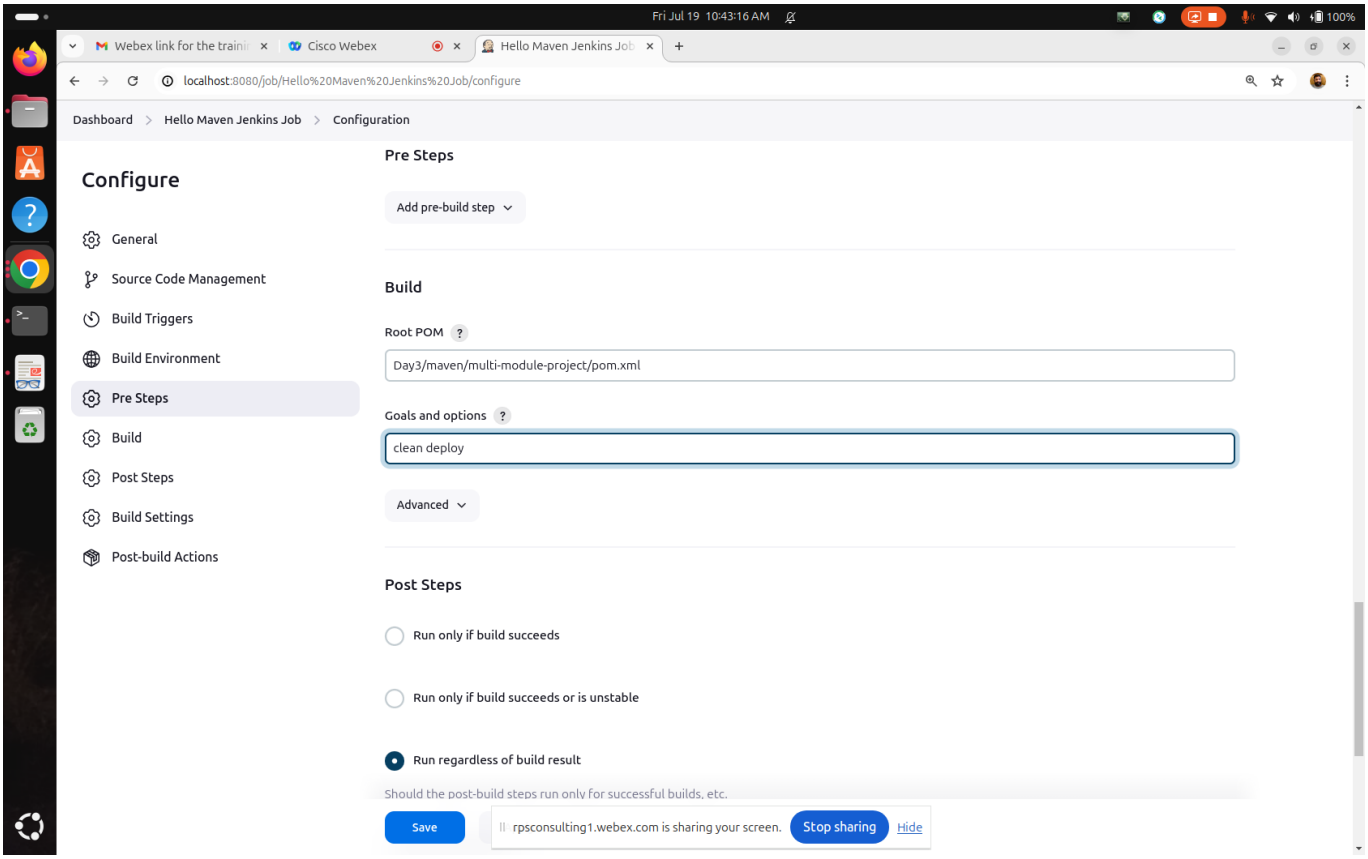


Build

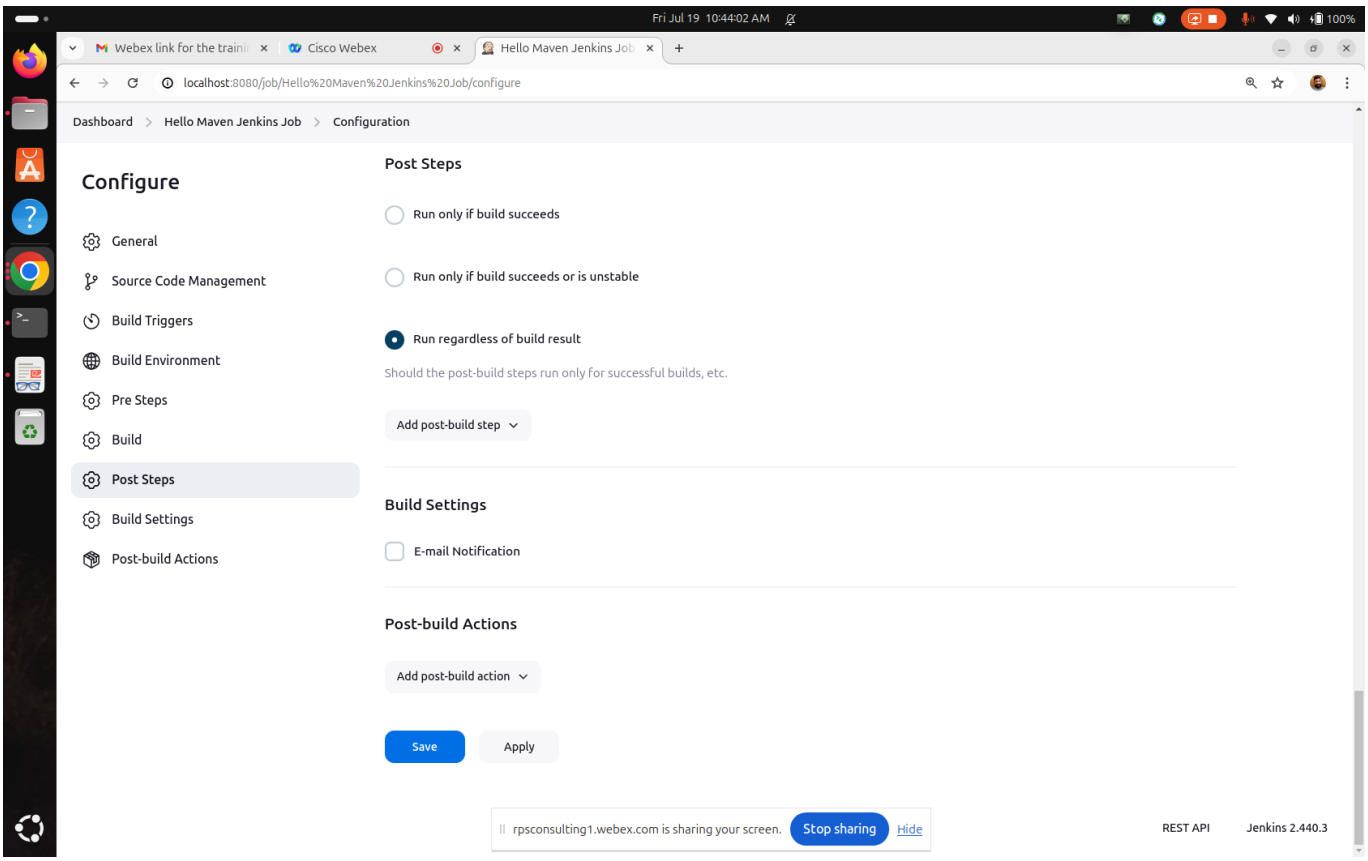
Under "Root pom" we need to give the relative path where Jenkins can find the pom.xml "Day3/maven/multi-module-project/pom.xml"

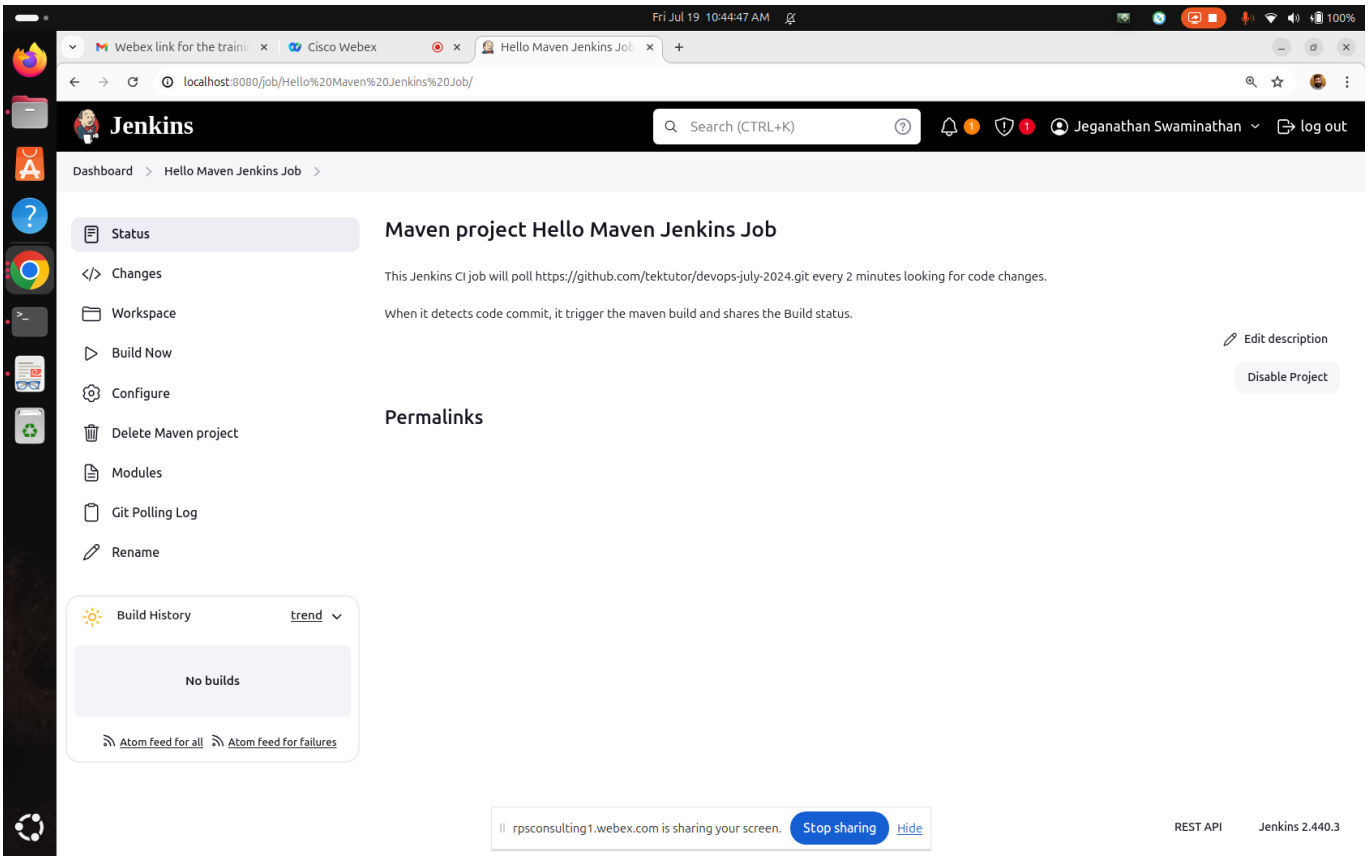


Under the "Goals and options" type "clean deploy"



Scroll down to click on "Save" button




Fri Jul 19 10:44:47 AM
Webex link for the traini
Cisco Webex
Hello Maven Jenkins Job
localhost:8080/job/Hello%20Maven%20Jenkins%20Job/
Jenkins
Search (CTRL+K)
Jeganathan Swaminathan
log out
Dashboard
Hello Maven Jenkins Job
Status
Changes
Workspace
Build Now
Configure
Delete Maven project
Modules
Git Polling Log
Rename
Build History
trend
No builds
Atom feed for all
Atom feed for failures
Maven project Hello Maven Jenkins Job
This Jenkins CI job will poll https://github.com/tektutor/devops-july-2024.git every 2 minutes looking for code changes.
When it detects code commit, it trigger the maven build and shares the Build status.
Edit description
Disable Project
Permalinks
rpsconsulting1.webex.com is sharing your screen.
Stop sharing
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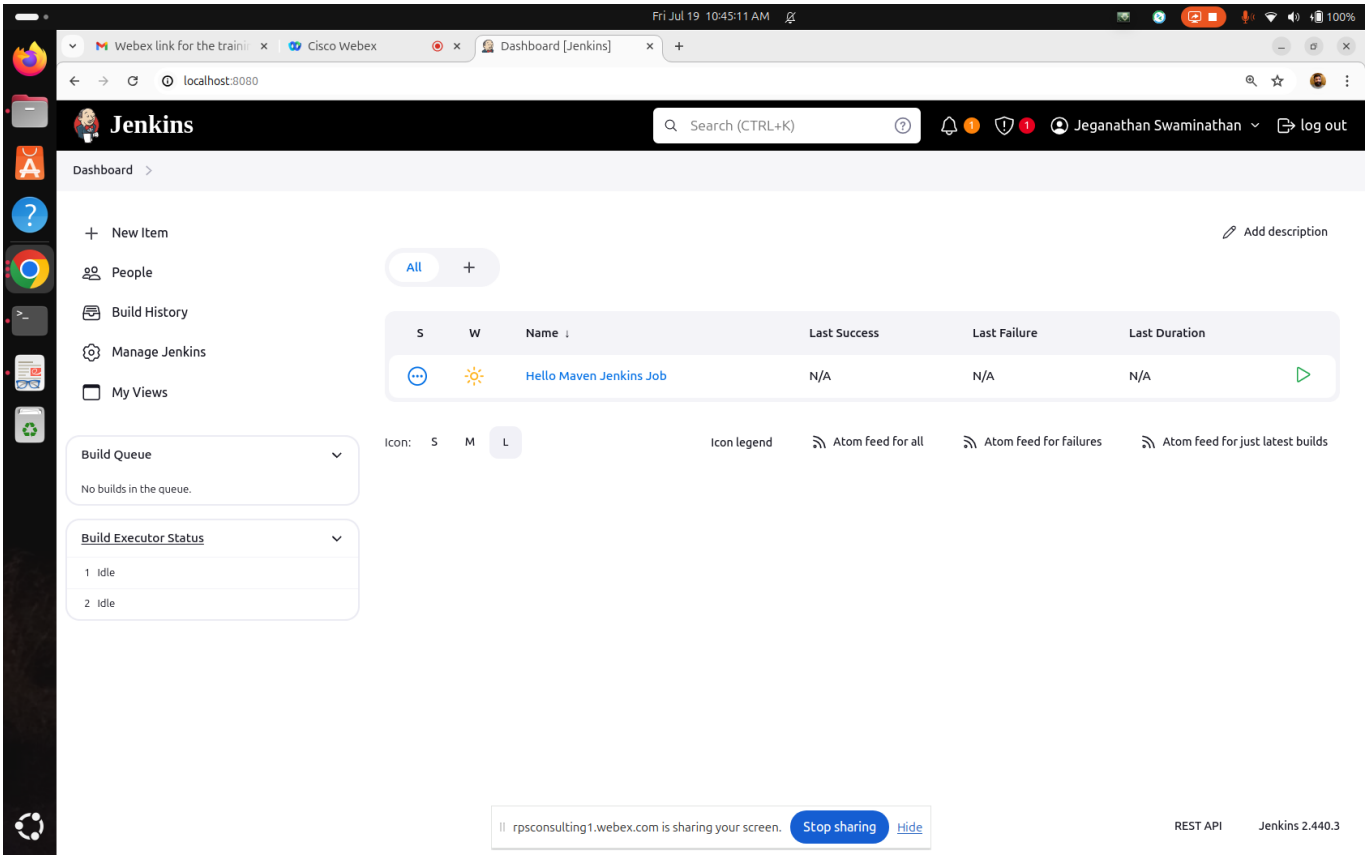
REST API
Jenkins 2.440.3


Fri Jul 19 10:45:11 AM
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Dashboard [Jenkins]
localhost:8080
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log out
Dashboard
New Item
People
Build History
Manage Jenkins
My Views
Build Queue
No builds in the queue.
Build Executor Status
1 Idle
2 Idle
Add description
All
S
W
Name
Last Success
Last Failure
Last Duration
Hello Maven Jenkins Job
N/A
N/A
N/A
Icon: S M L
Icon legend
Atom feed for all
Atom feed for failures
Atom feed for just latest builds
rpsconsulting1.webex.com is sharing your screen.
Stop sharing
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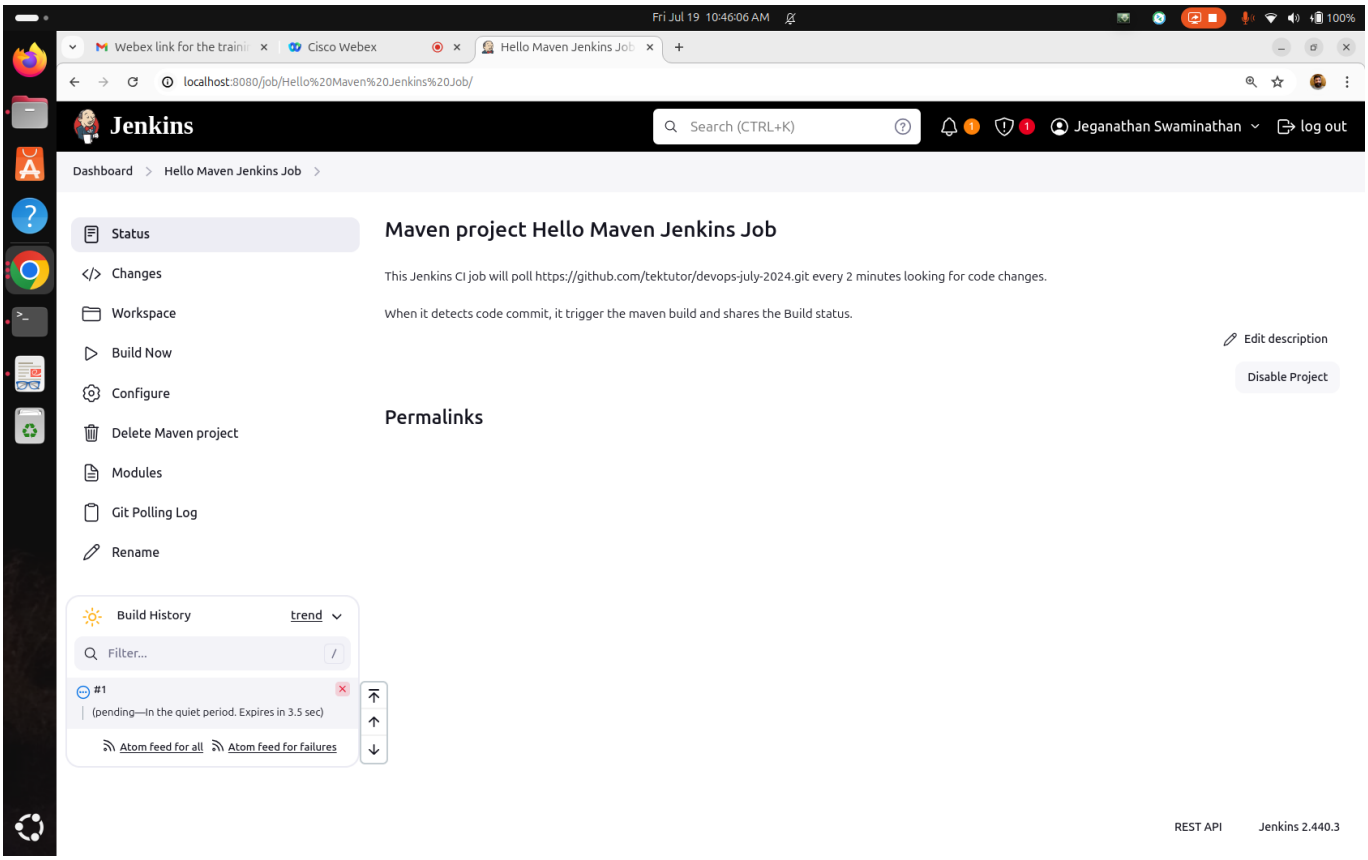
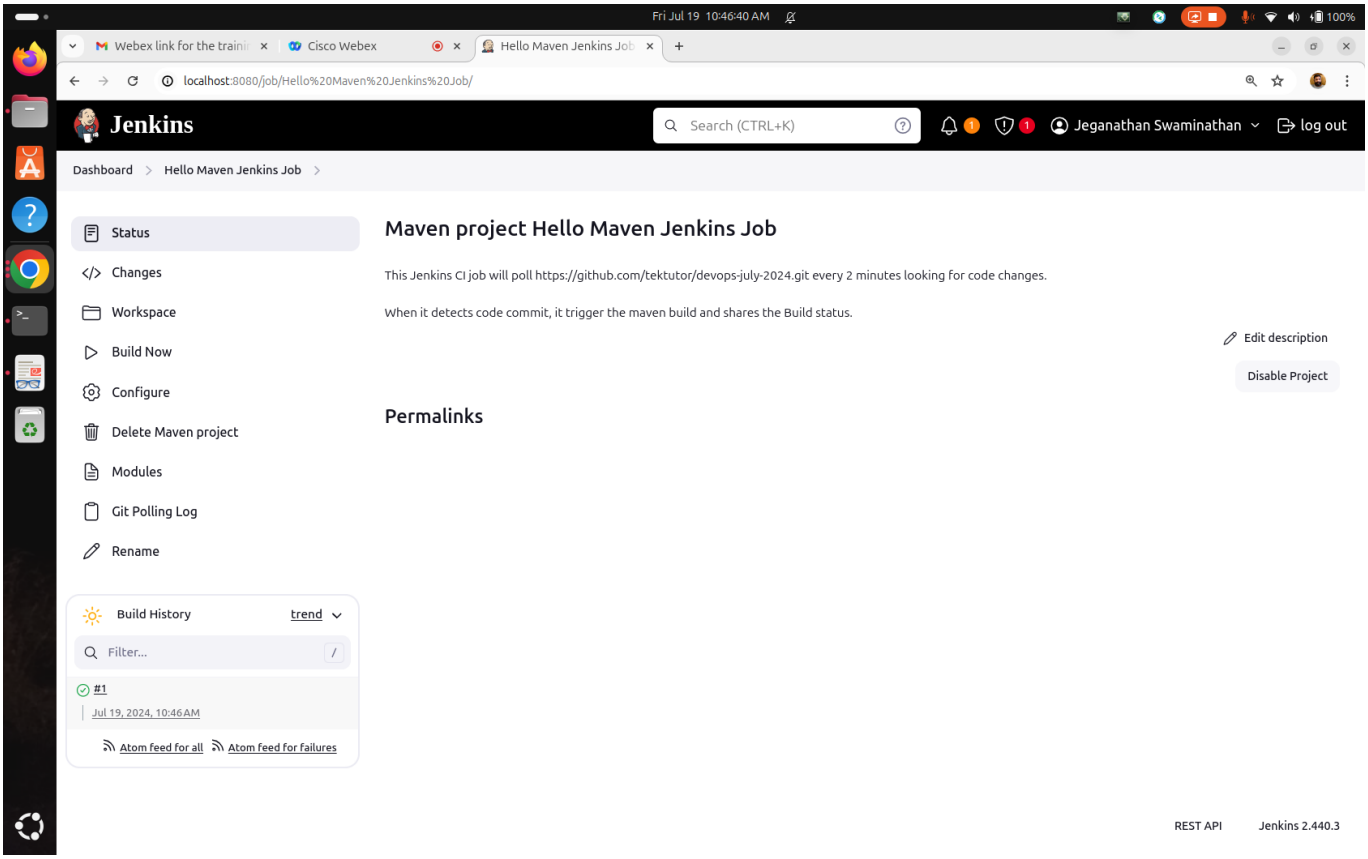
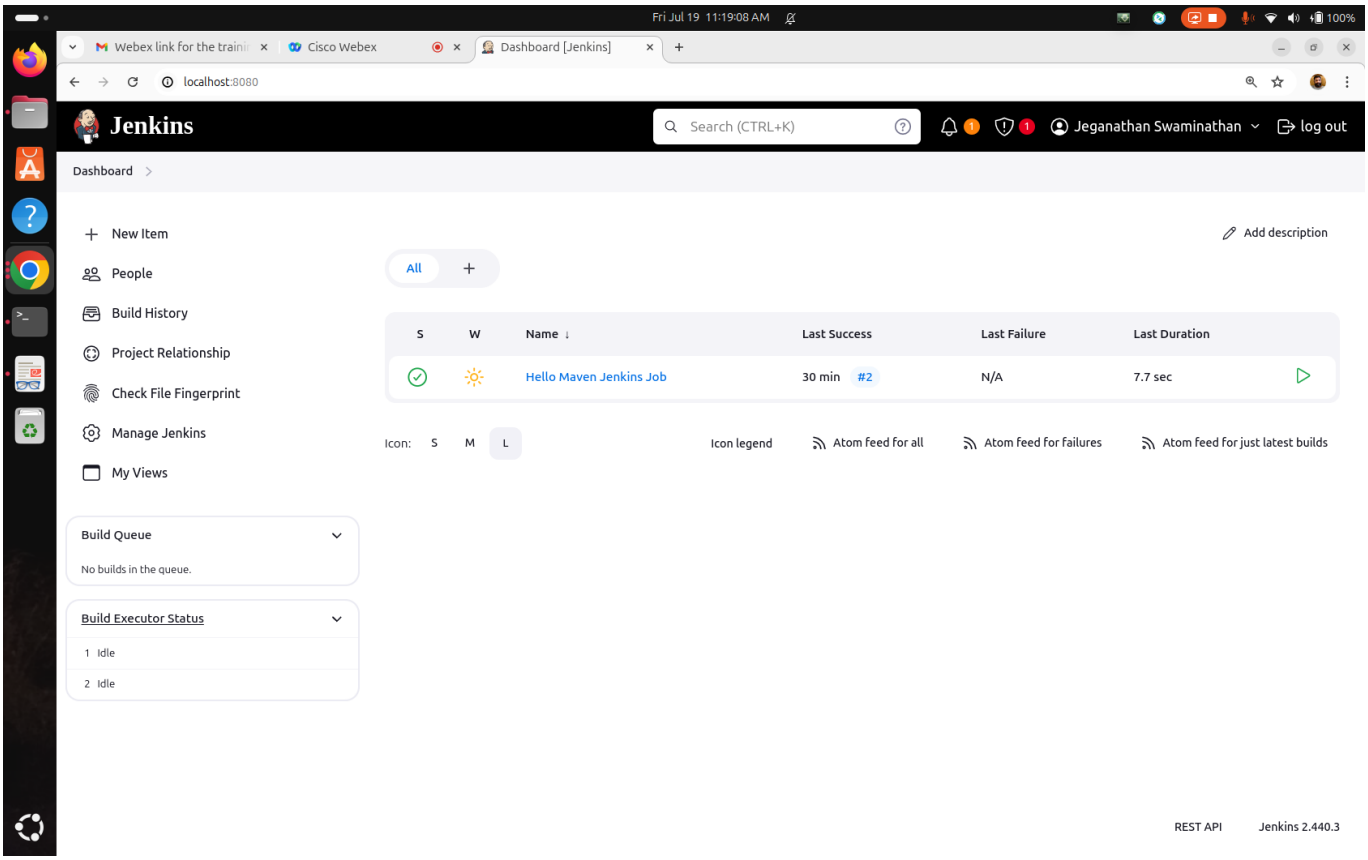
REST API
Jenkins 2.440.3

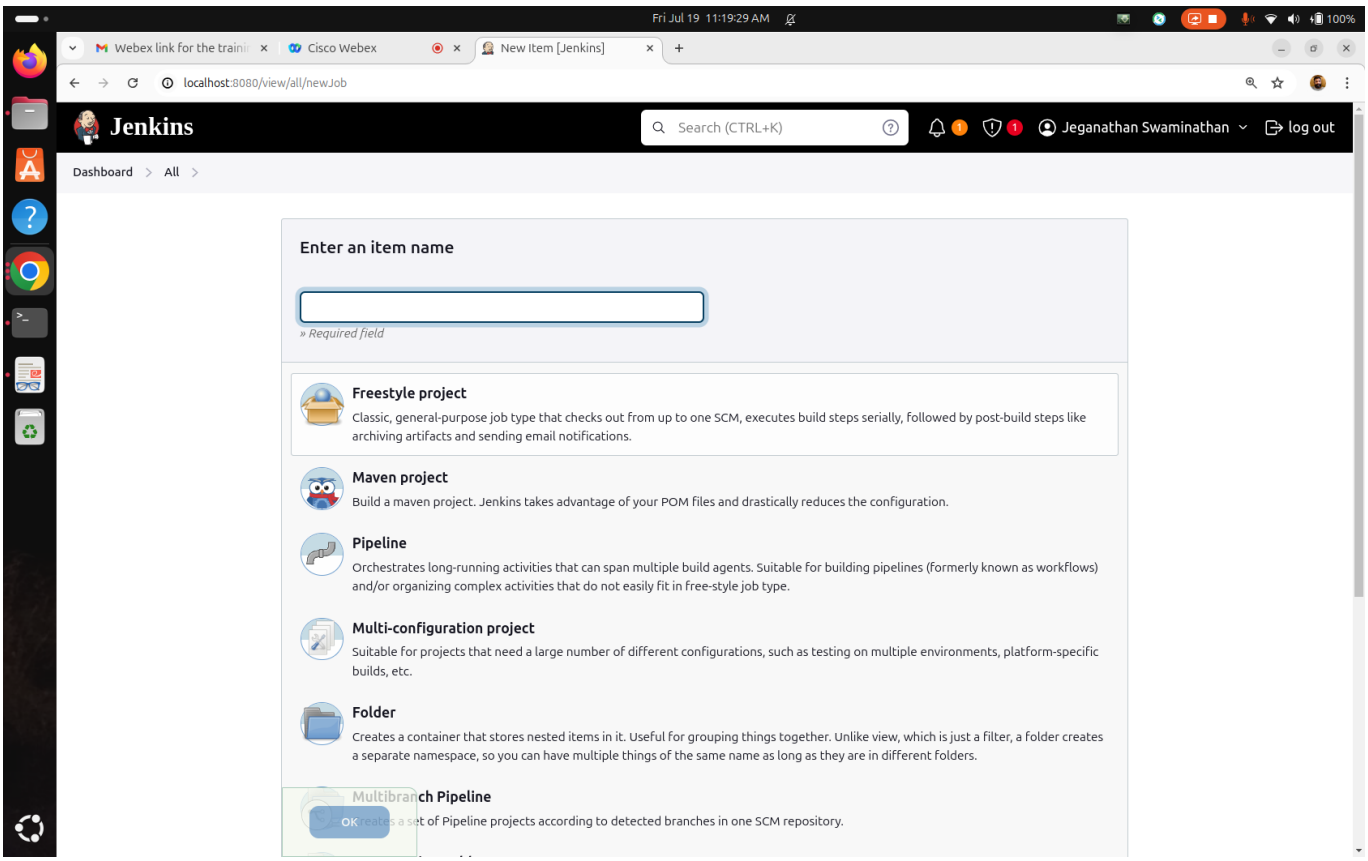




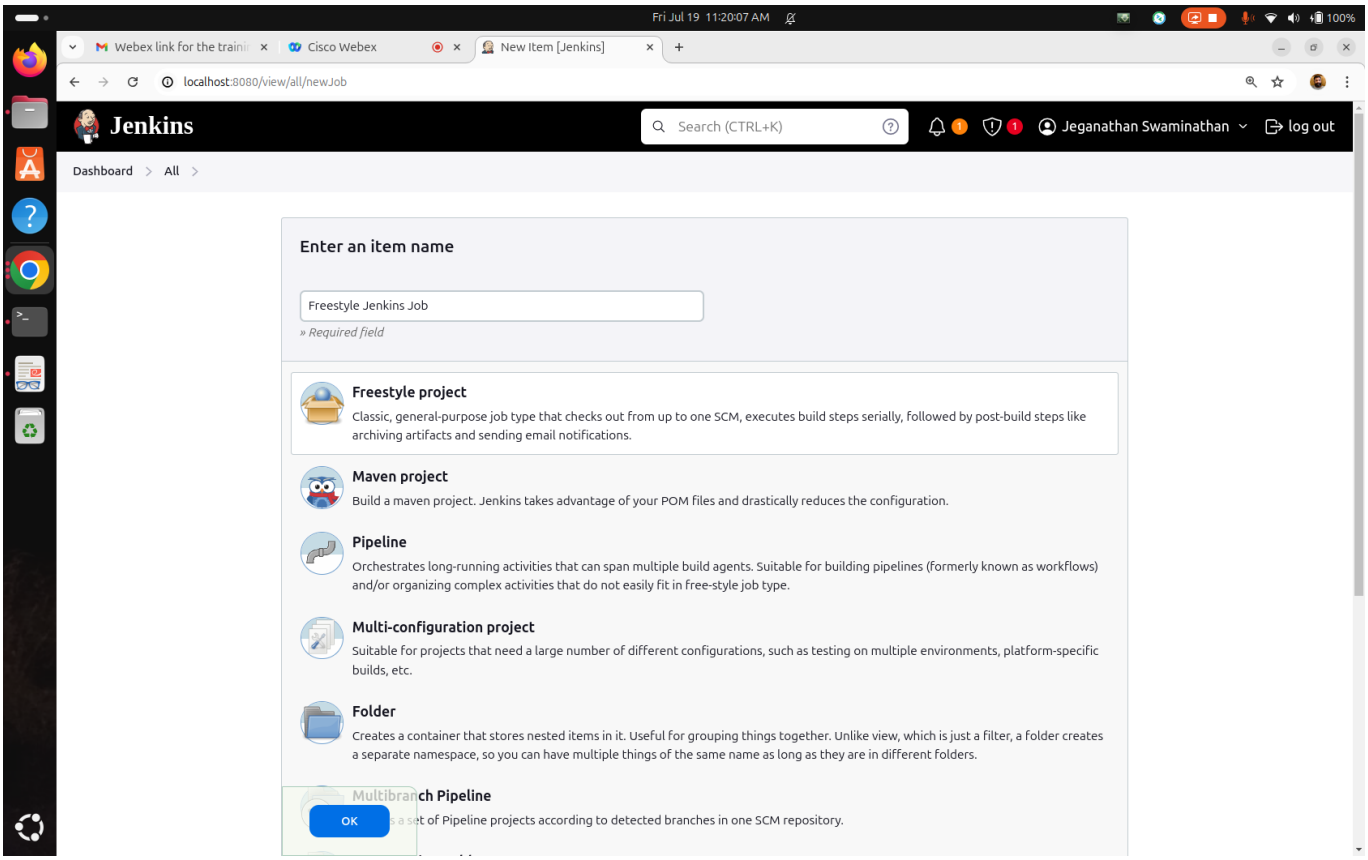
Lab - Creating a Freestyle Jenkins Job



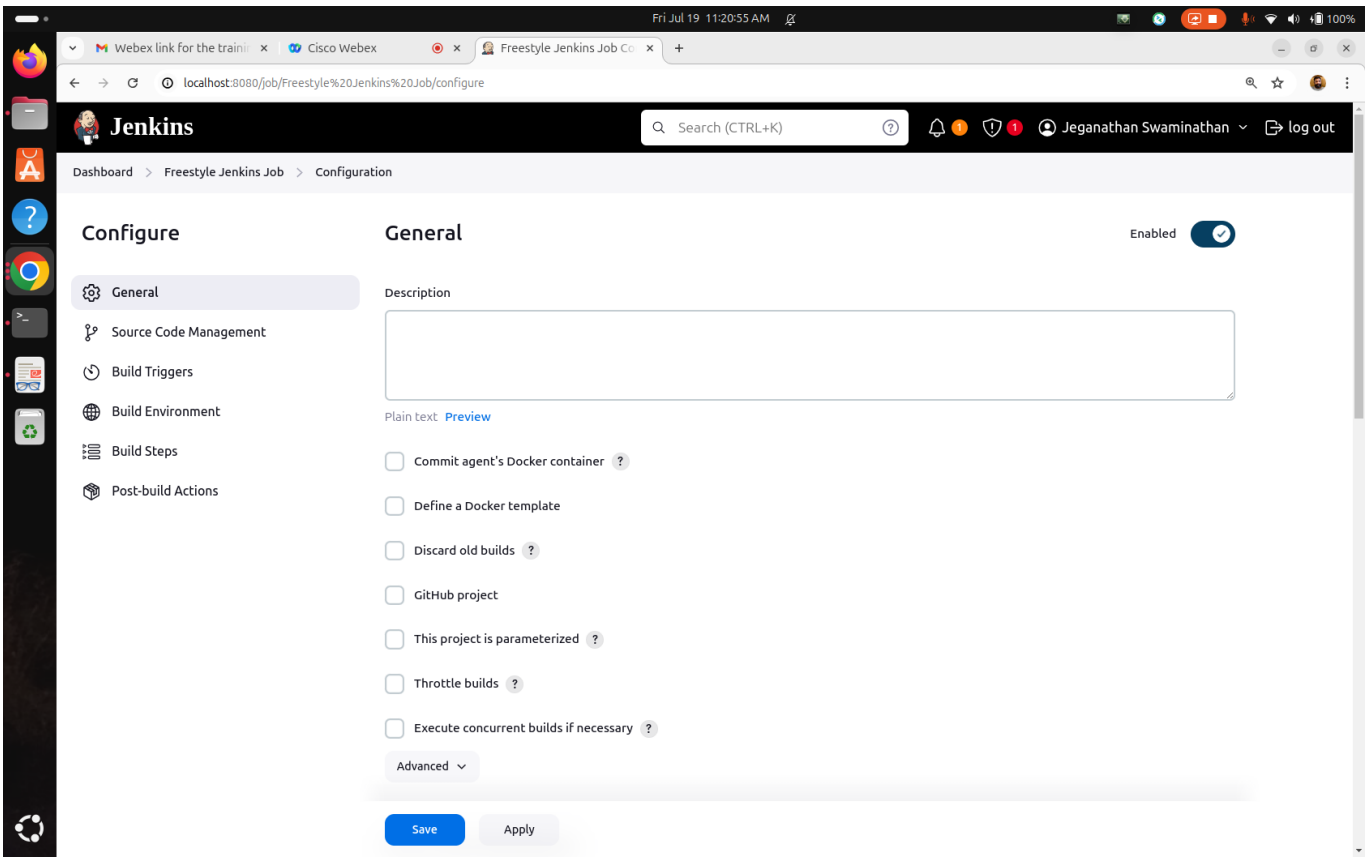
Click "New item"



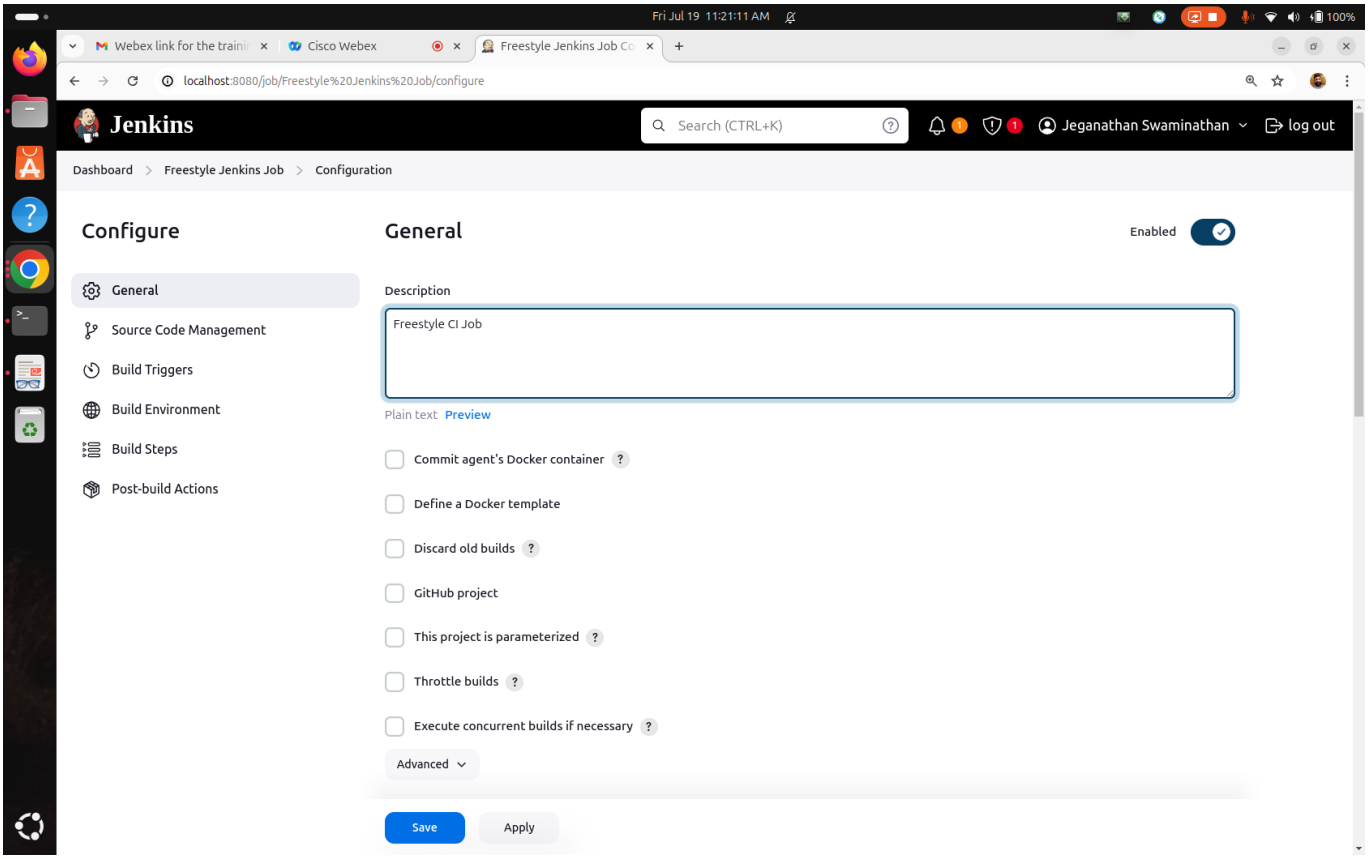
Type "Freestyle Jenkins Job" under the item name and select "Freestyle project"



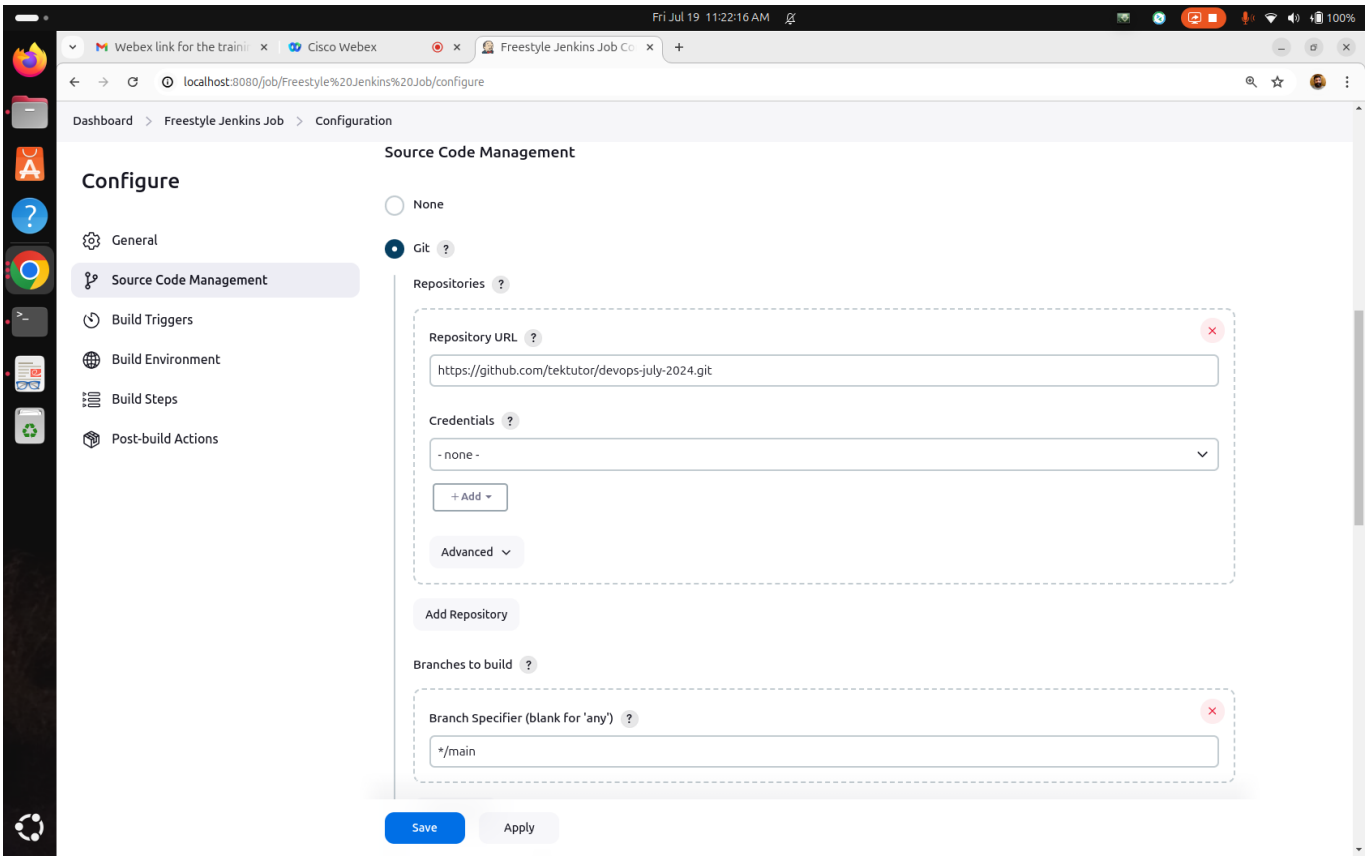
Click "Ok" button



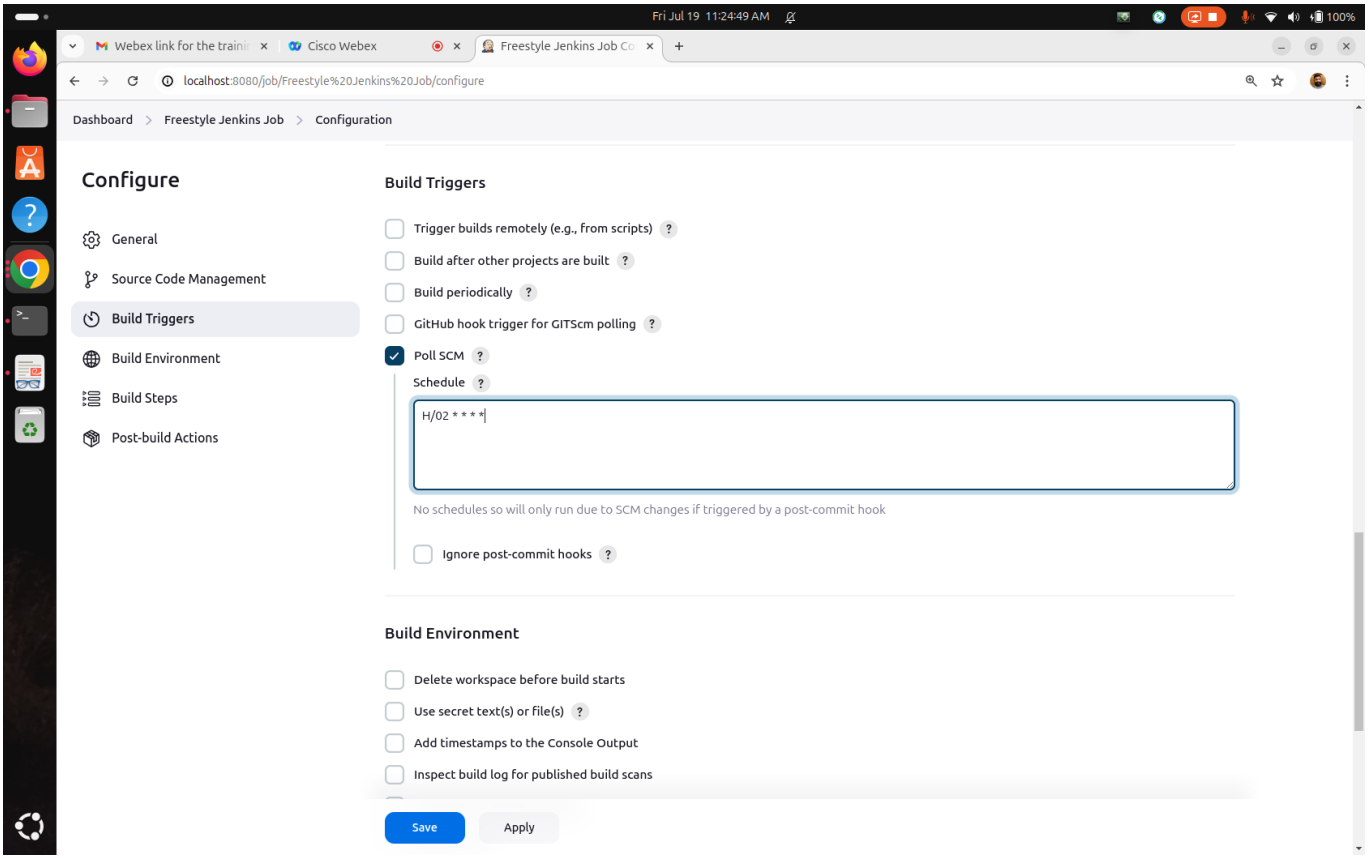
General section



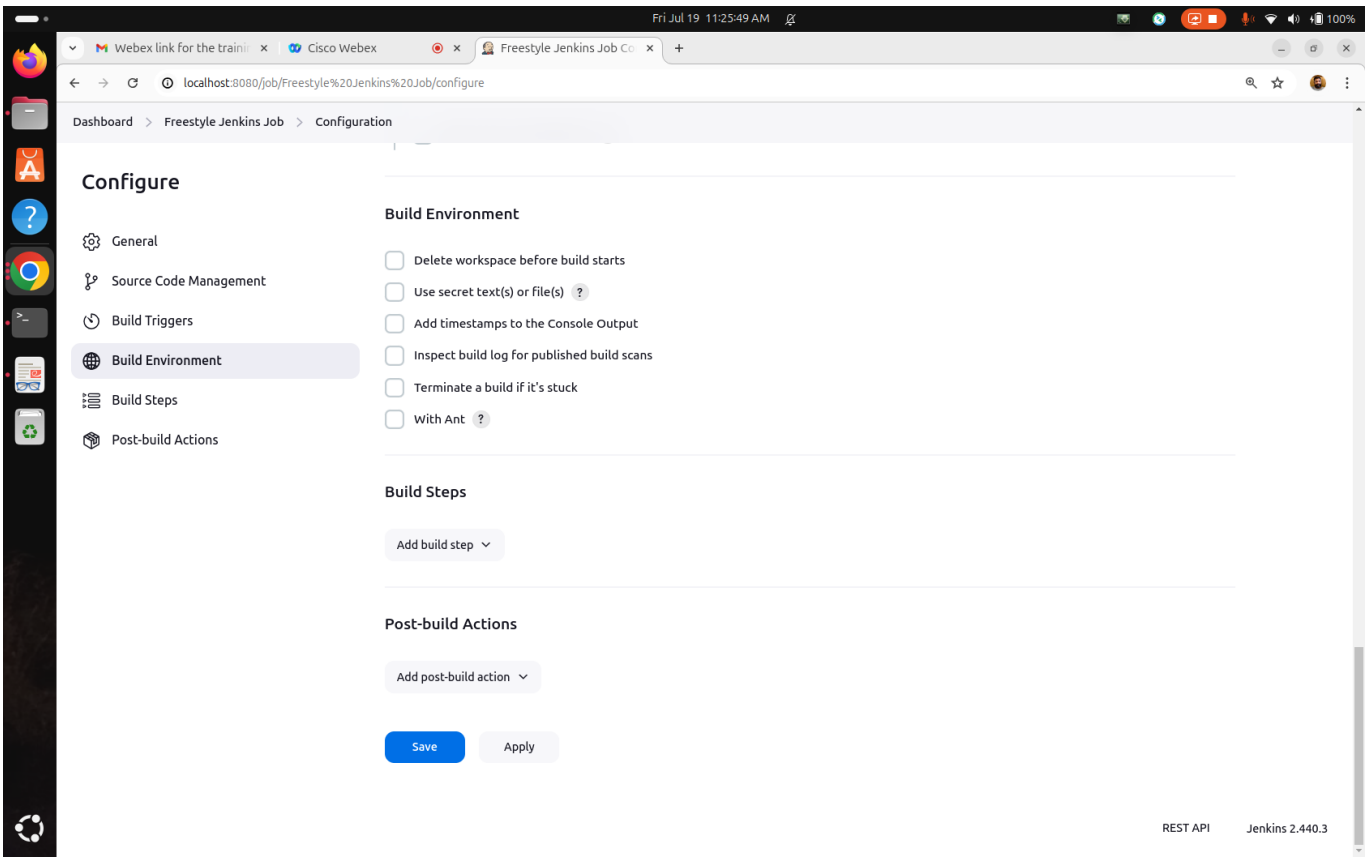
Source Code Management Type https://github.com/tektutor/devops-july-2024.git under repository url and replace "*/master" with "*/main" under Branch specifier

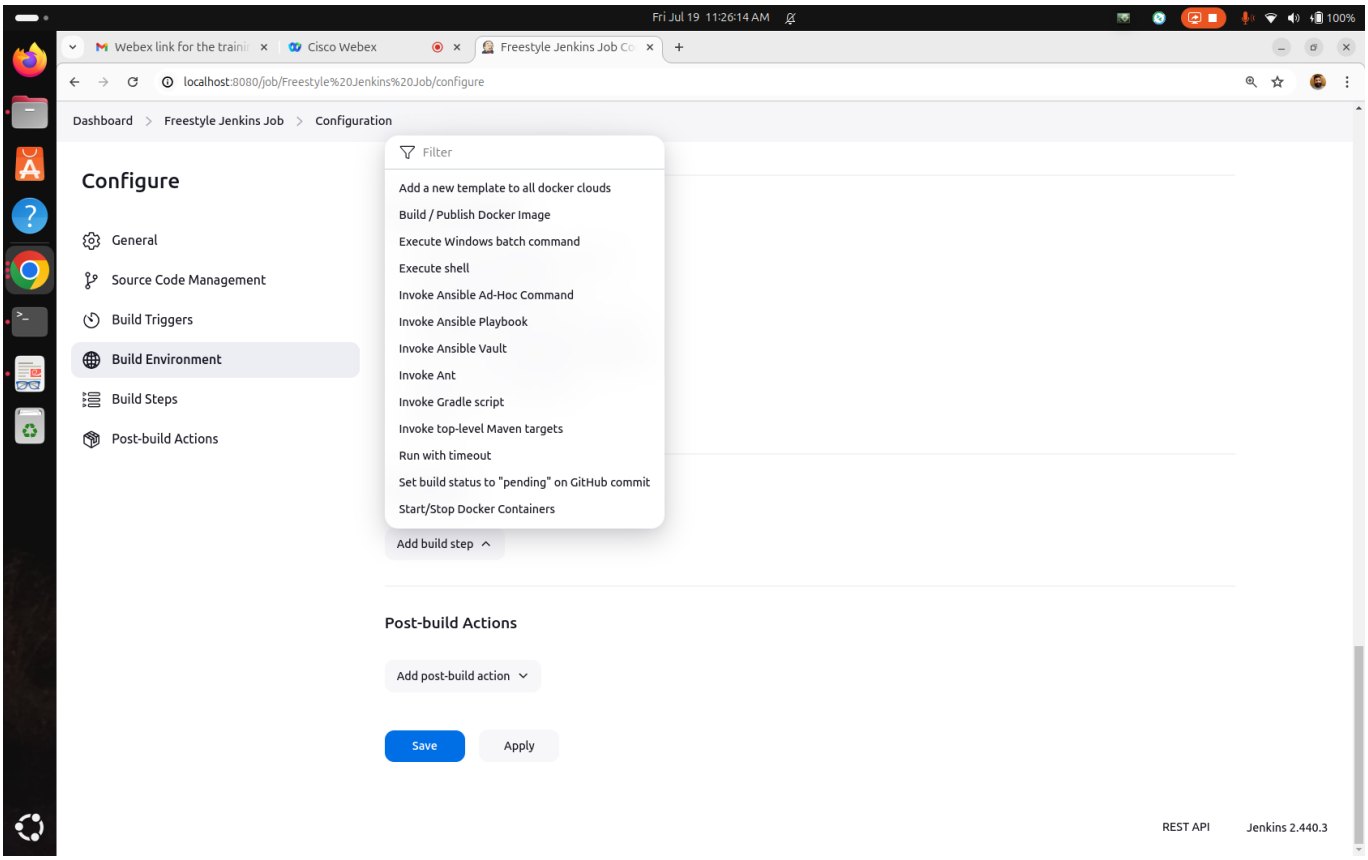


Build Triggers Type "H/02 * * * *" under Poll SCM --> schedule

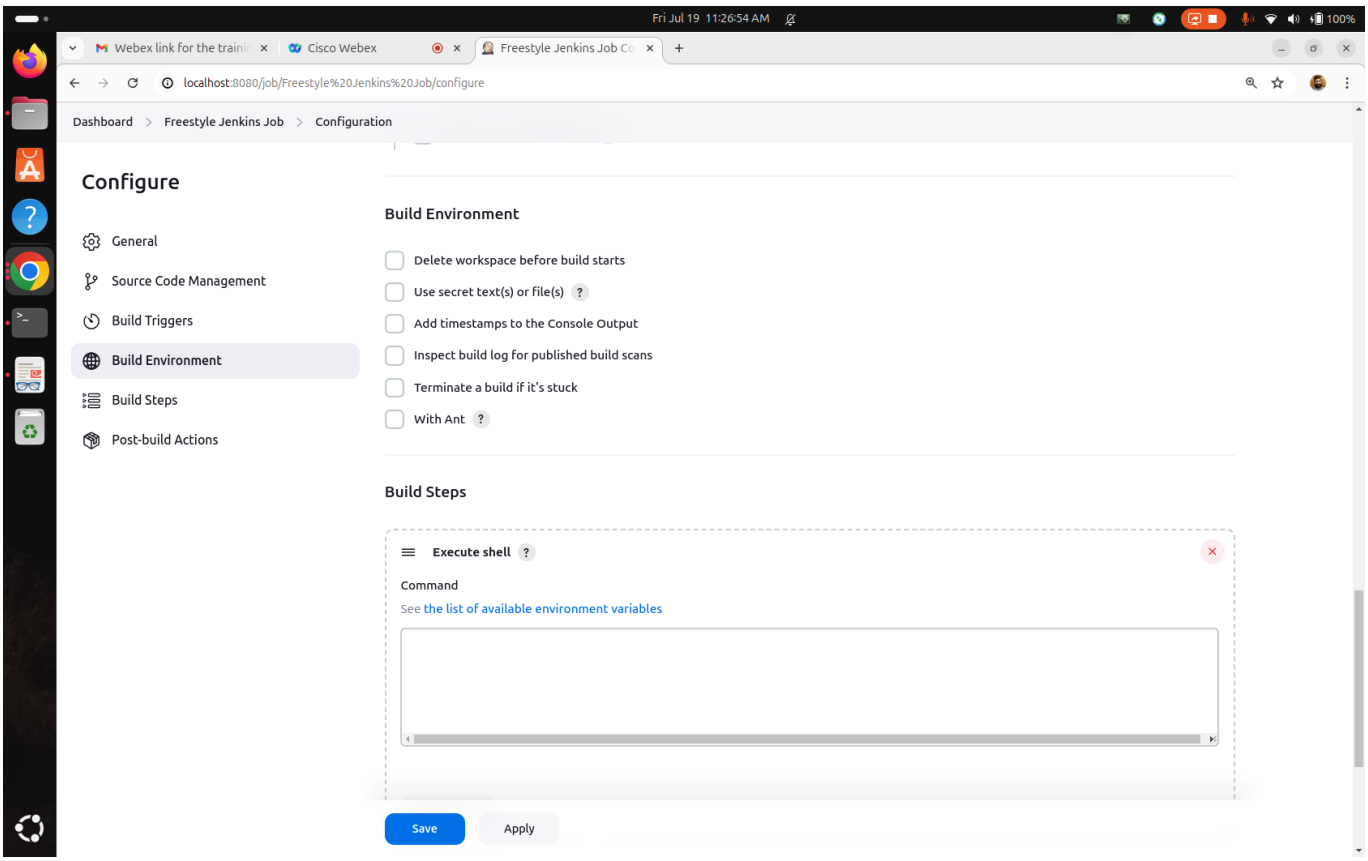


Build Steps



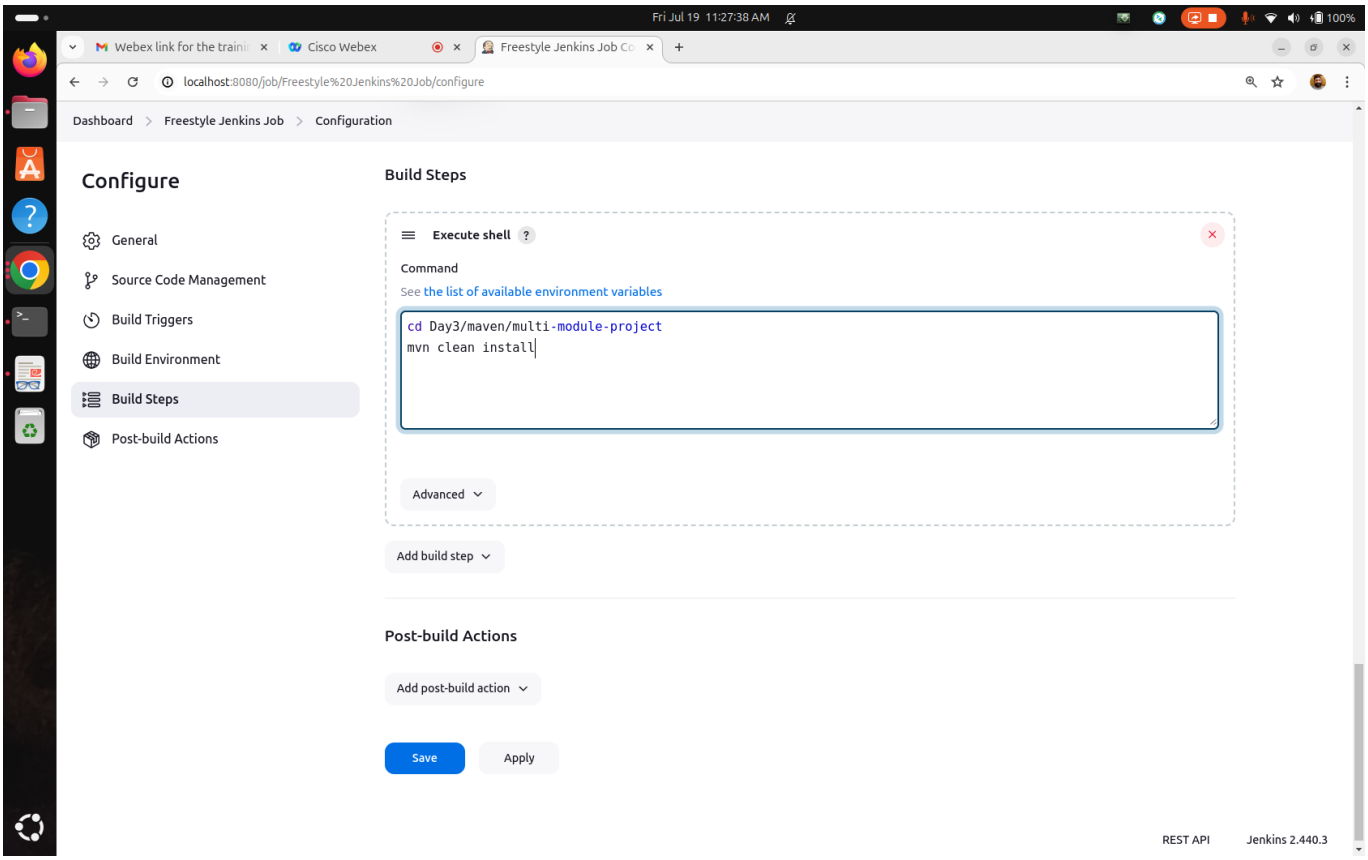


Select "Execute Shell"

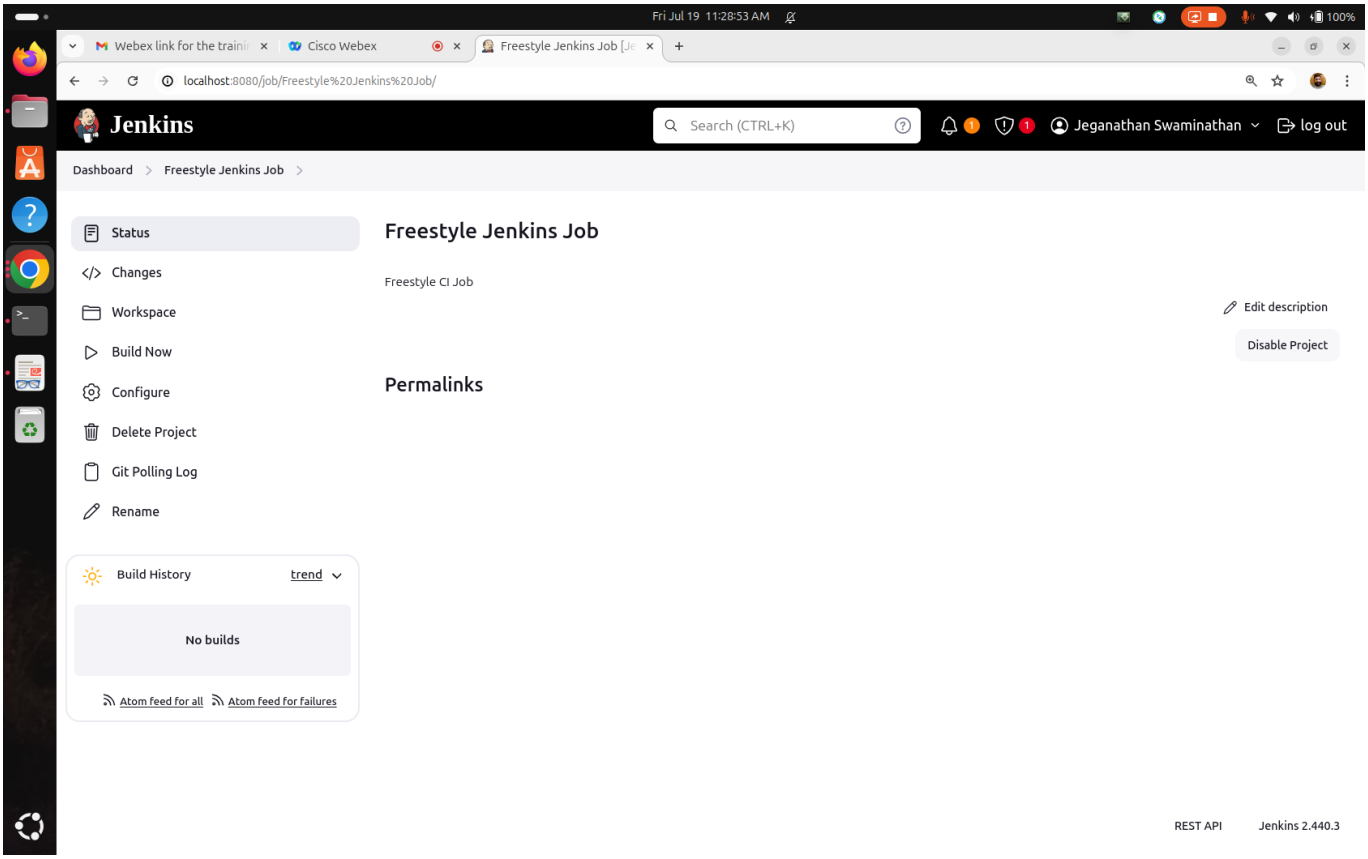


Under the Execute Shell --> command type

```
cd Day3/maven/multi-module-project
mvn clean install
```

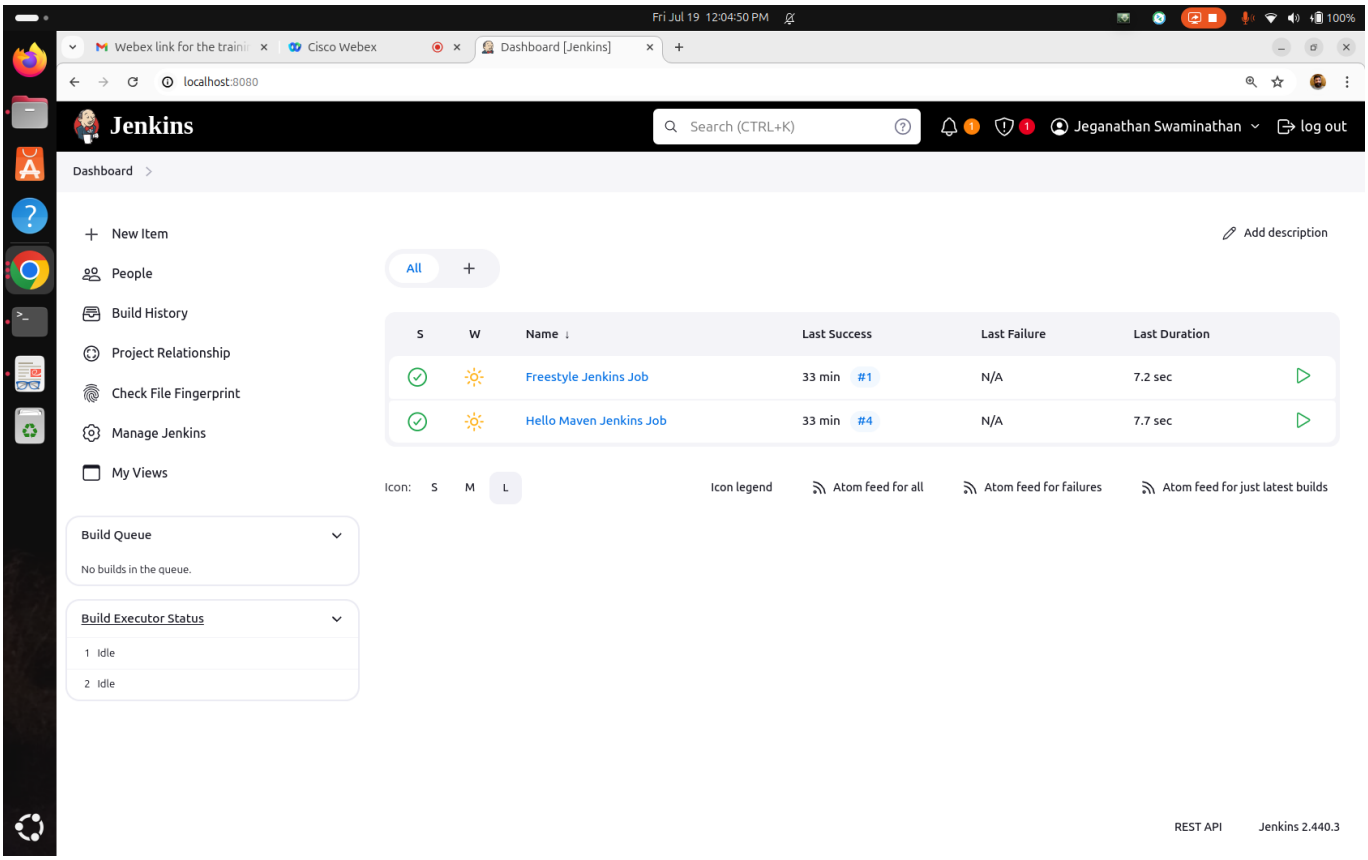


Click "Save" button

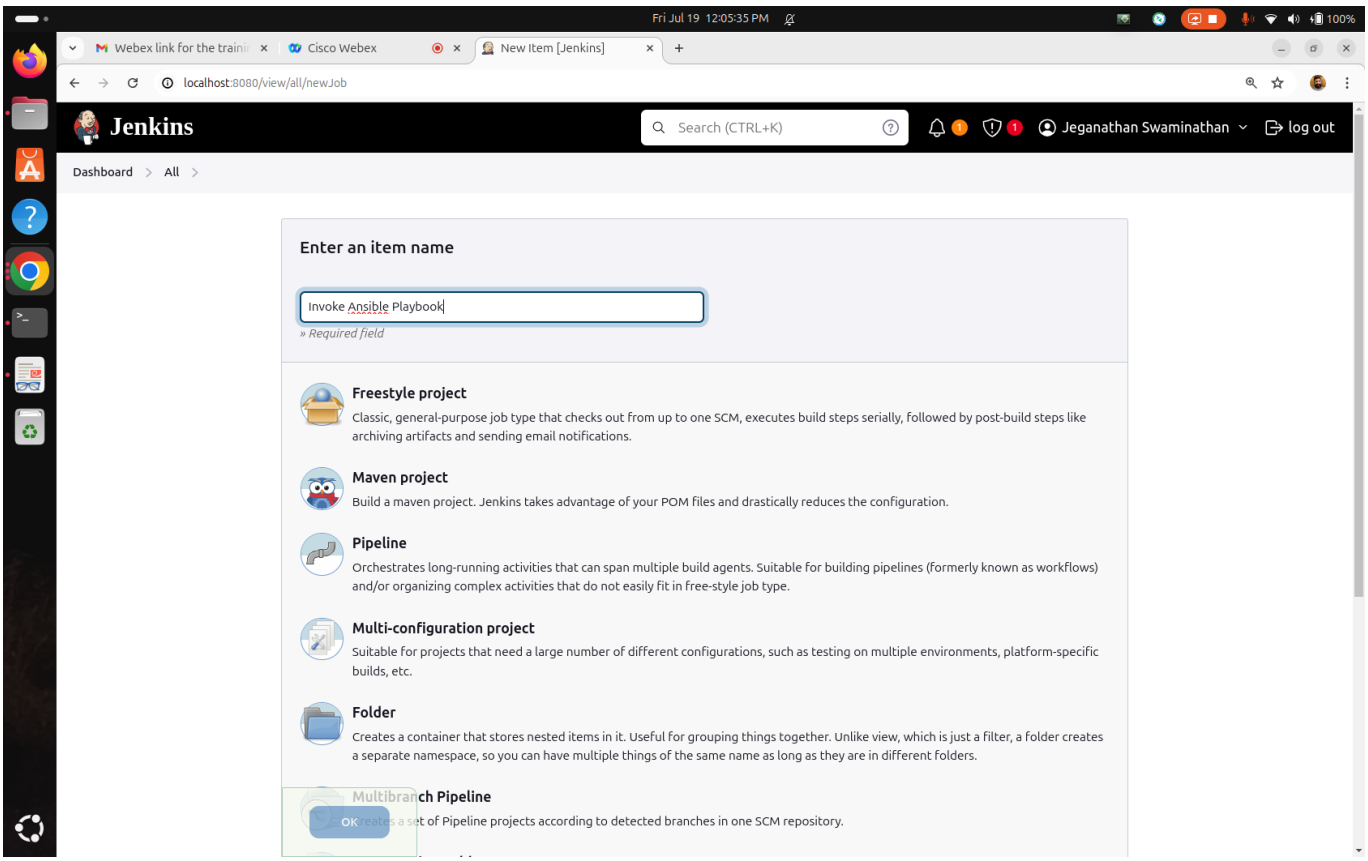


Lab - Creating a FreeStyle Jenkins Job and triggering Ansible Playbook

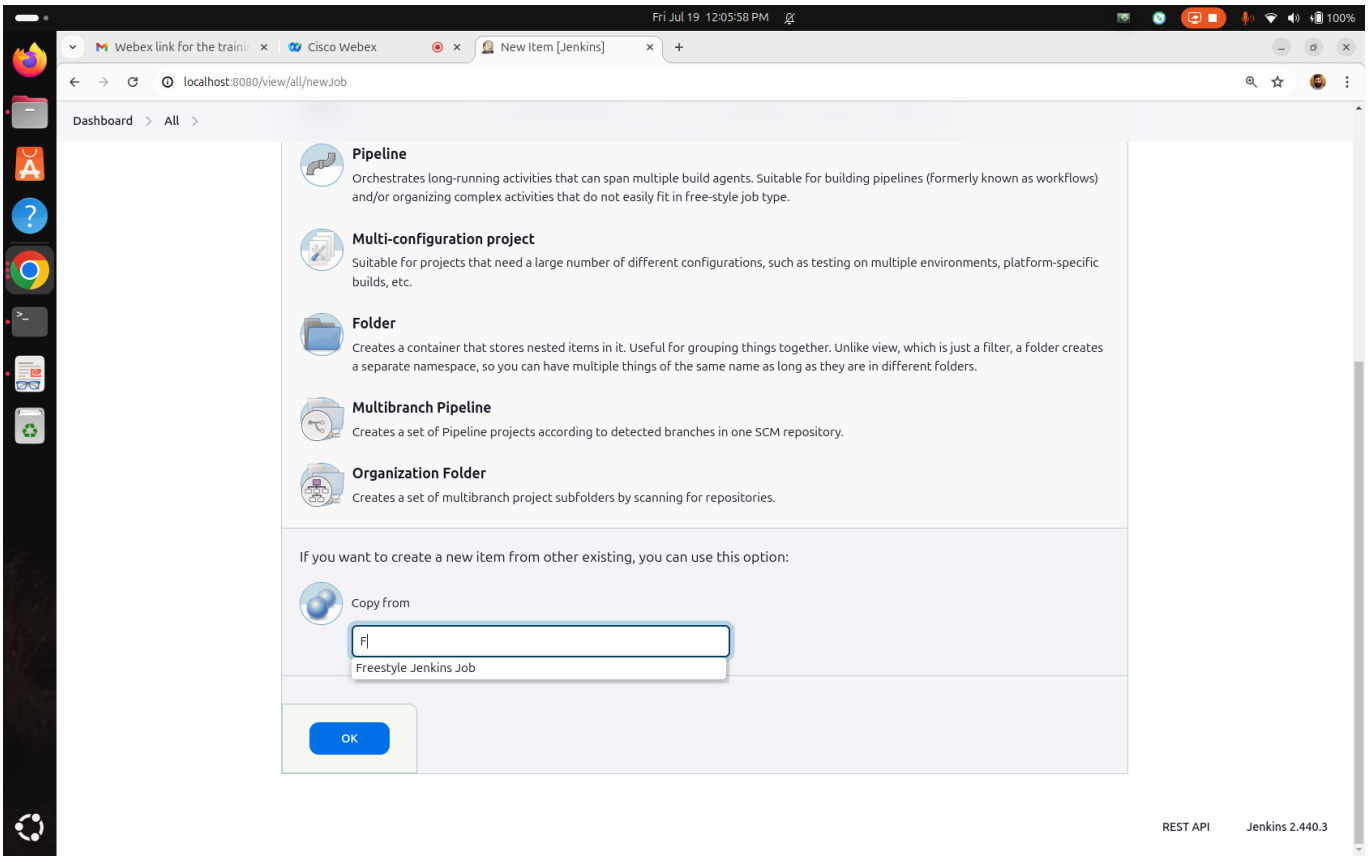
Create a file name ~/.become-password-file and type 'rps' without quotes, save and close the file.

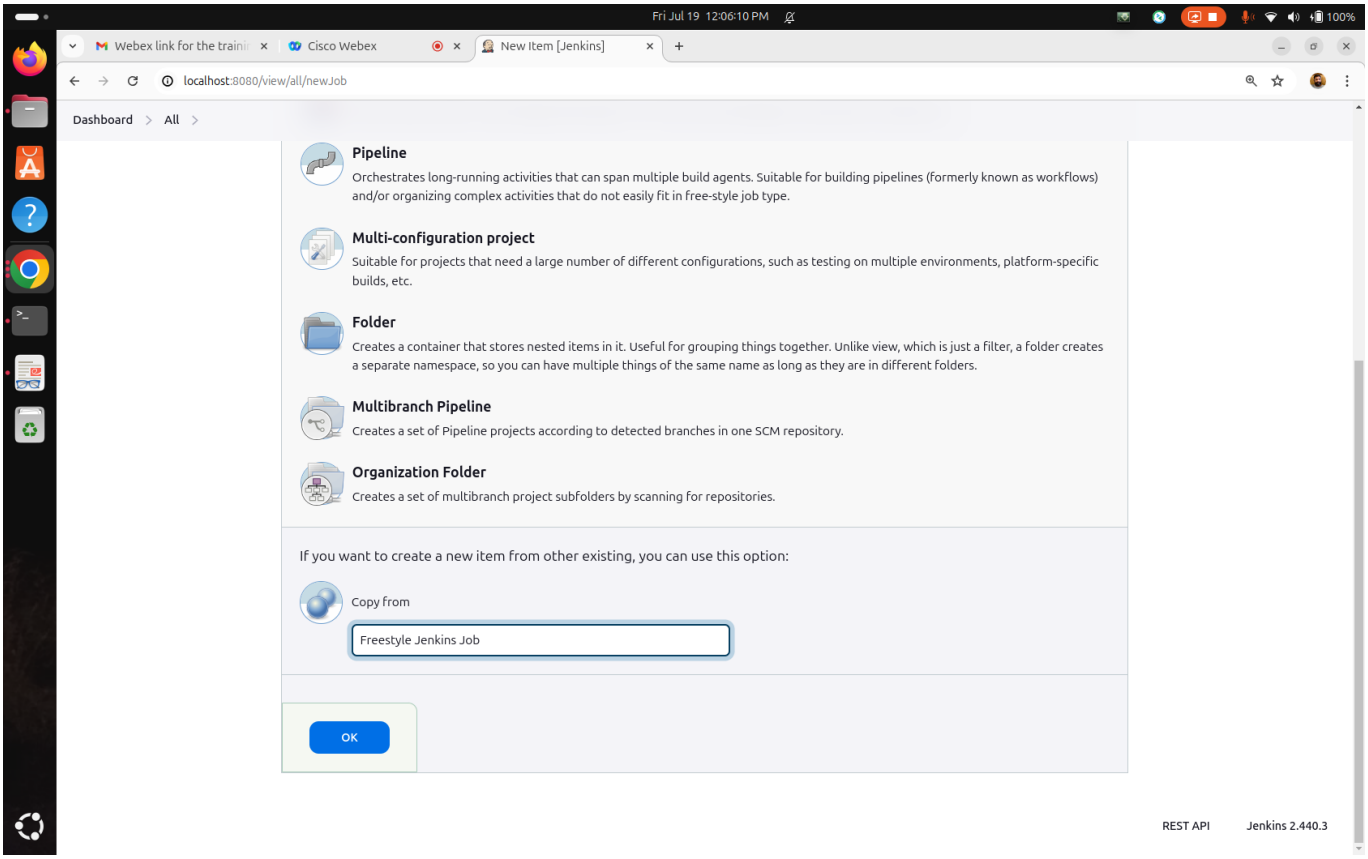


Click "New Item"



Type "Invoke Ansible Playbook" and Copy project from "Freestyle Jenkins Job"


Fri Jul 19 12:05:58 PM
Webex link for the traini
Cisco Webex
New Item [Jenkins]
localhost:8080/view/all/newJob
Dashboard
All
Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.
Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.
Folder
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.
Multibranch Pipeline
Creates a set of Pipeline projects according to detected branches in one SCM repository.
Organization Folder
Creates a set of multibranch project subfolders by scanning for repositories.
If you want to create a new item from other existing, you can use this option:
Copy from
Fr
Freestyle Jenkins Job
OK
REST API
Jenkins 2.440.3


Fri Jul 19 12:06:10 PM
Webex link for the traini
Cisco Webex
New Item [Jenkins]
localhost:8080/view/all/newJob
Dashboard
All
Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.
Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.
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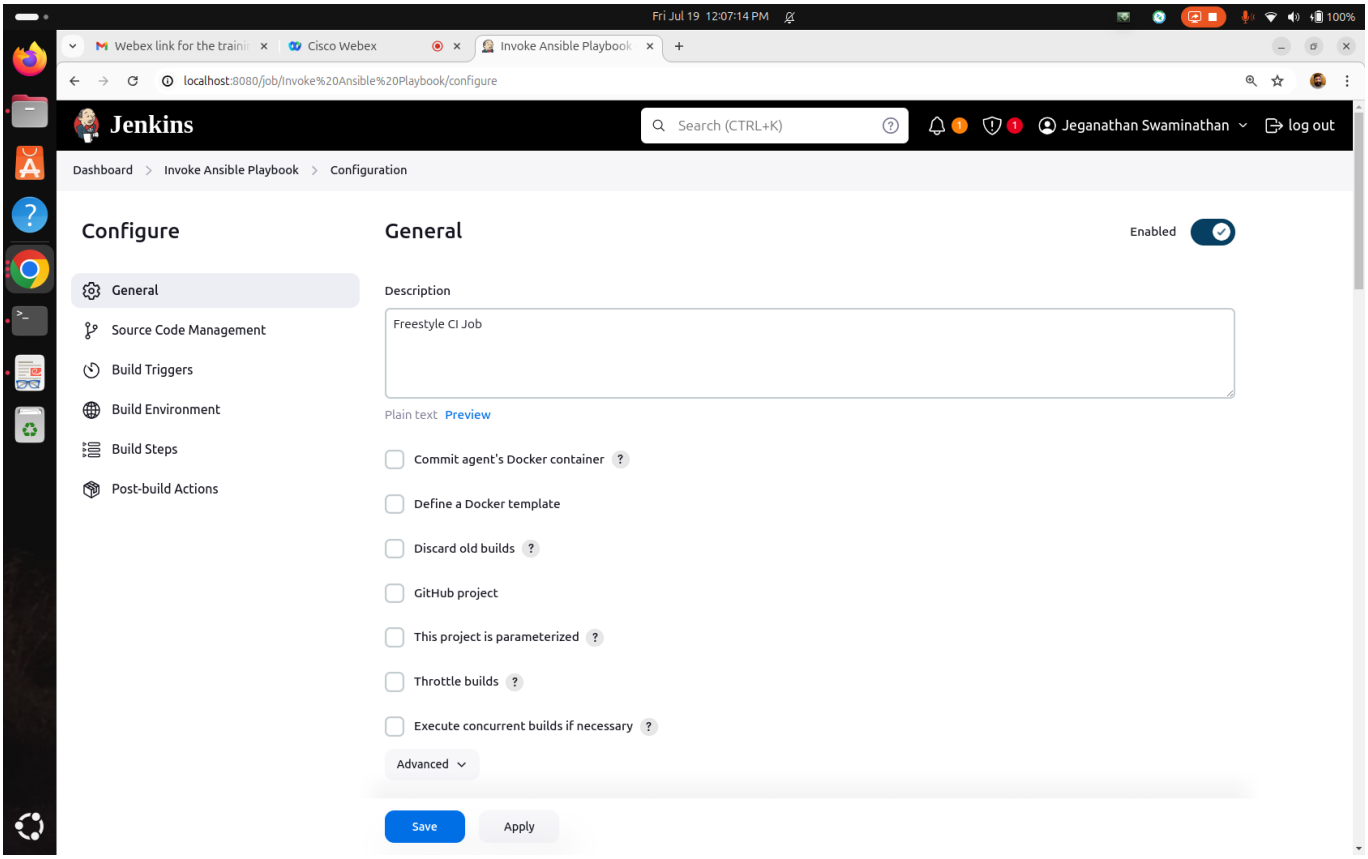
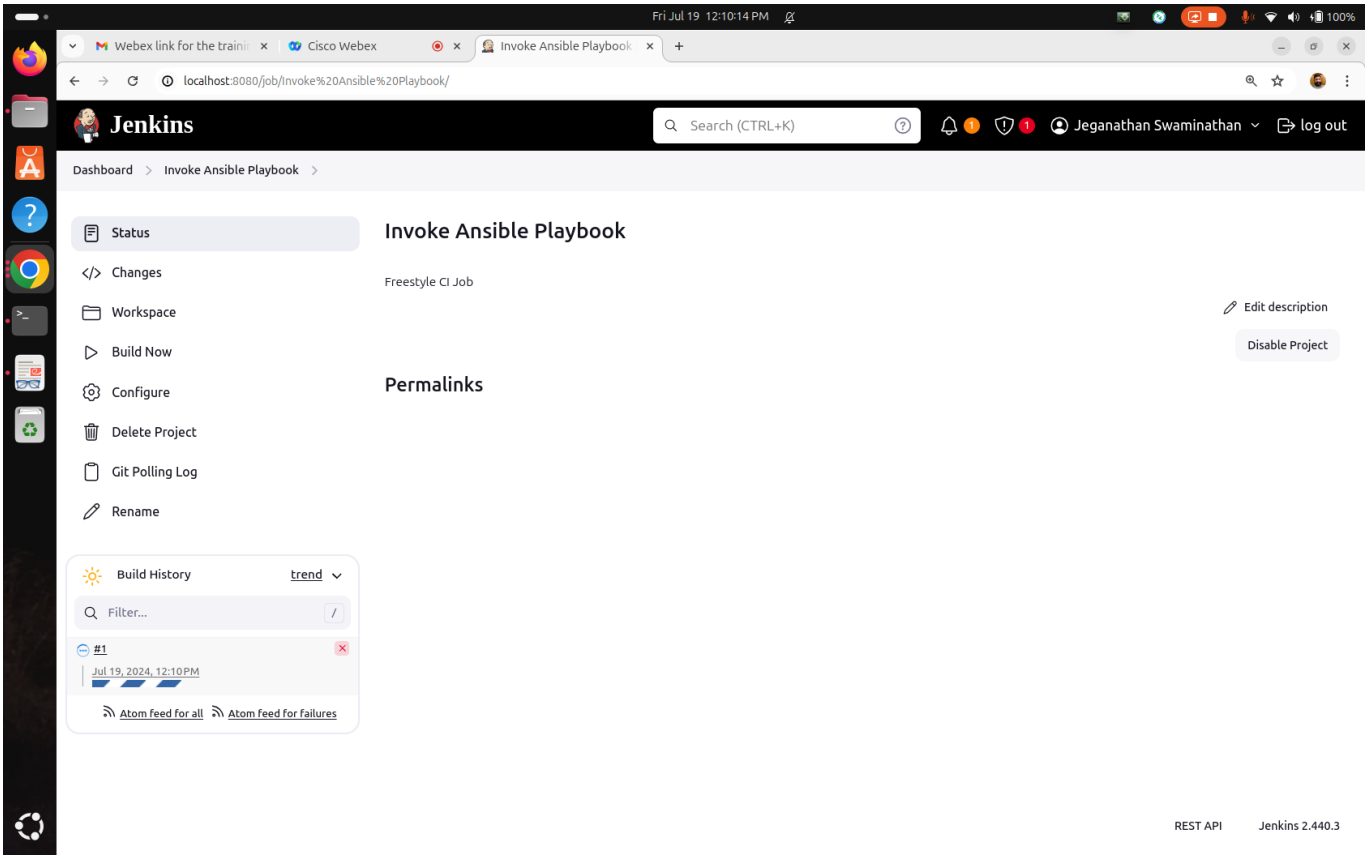
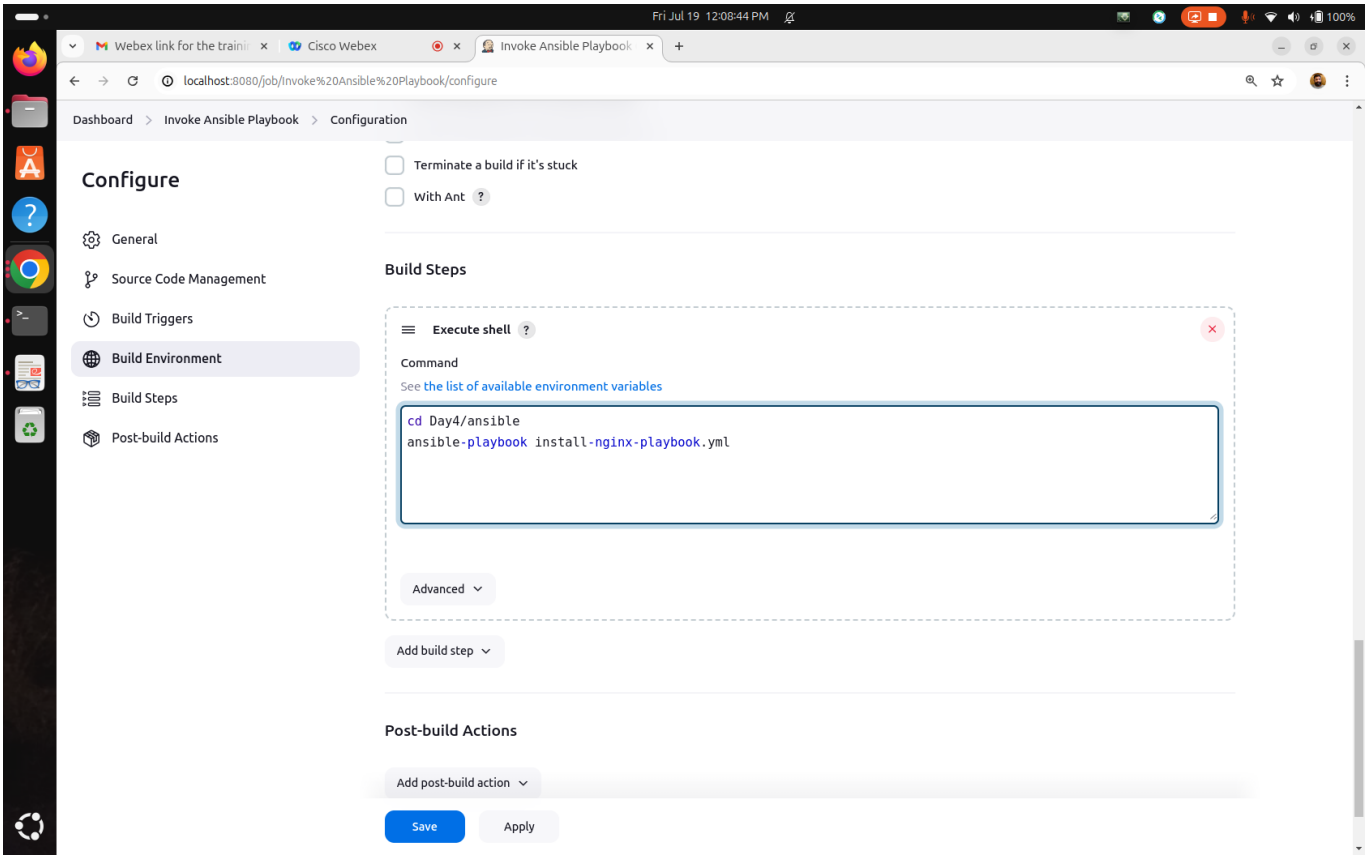
Multibranch Pipeline
Creates a set of Pipeline projects according to detected branches in one SCM repository.
Organization Folder
Creates a set of multibranch project subfolders by scanning for repositories.
If you want to create a new item from other existing, you can use this option:
Copy from
Freestyle Jenkins Job
OK
REST API
Jenkins 2.440.3

Click "ok" button

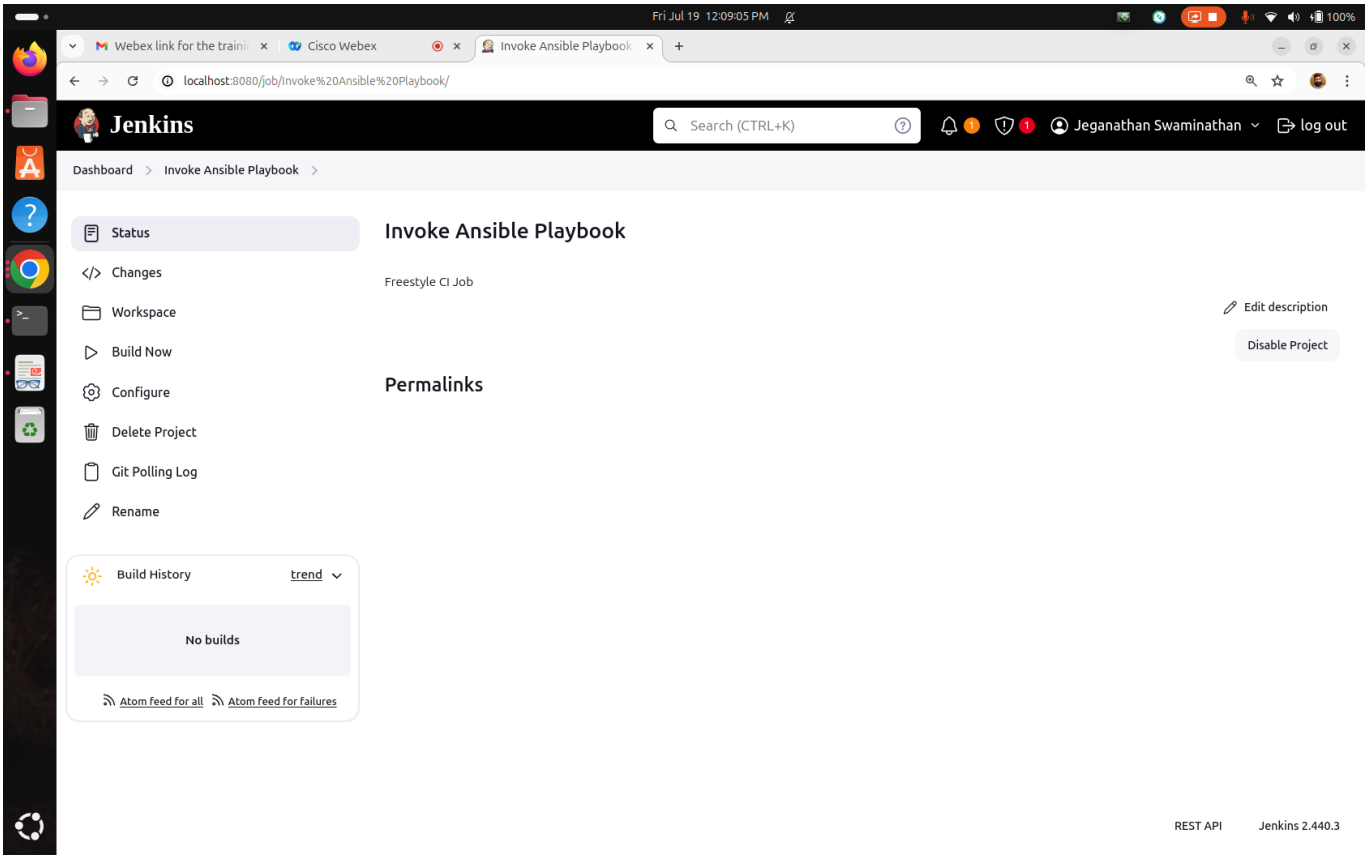


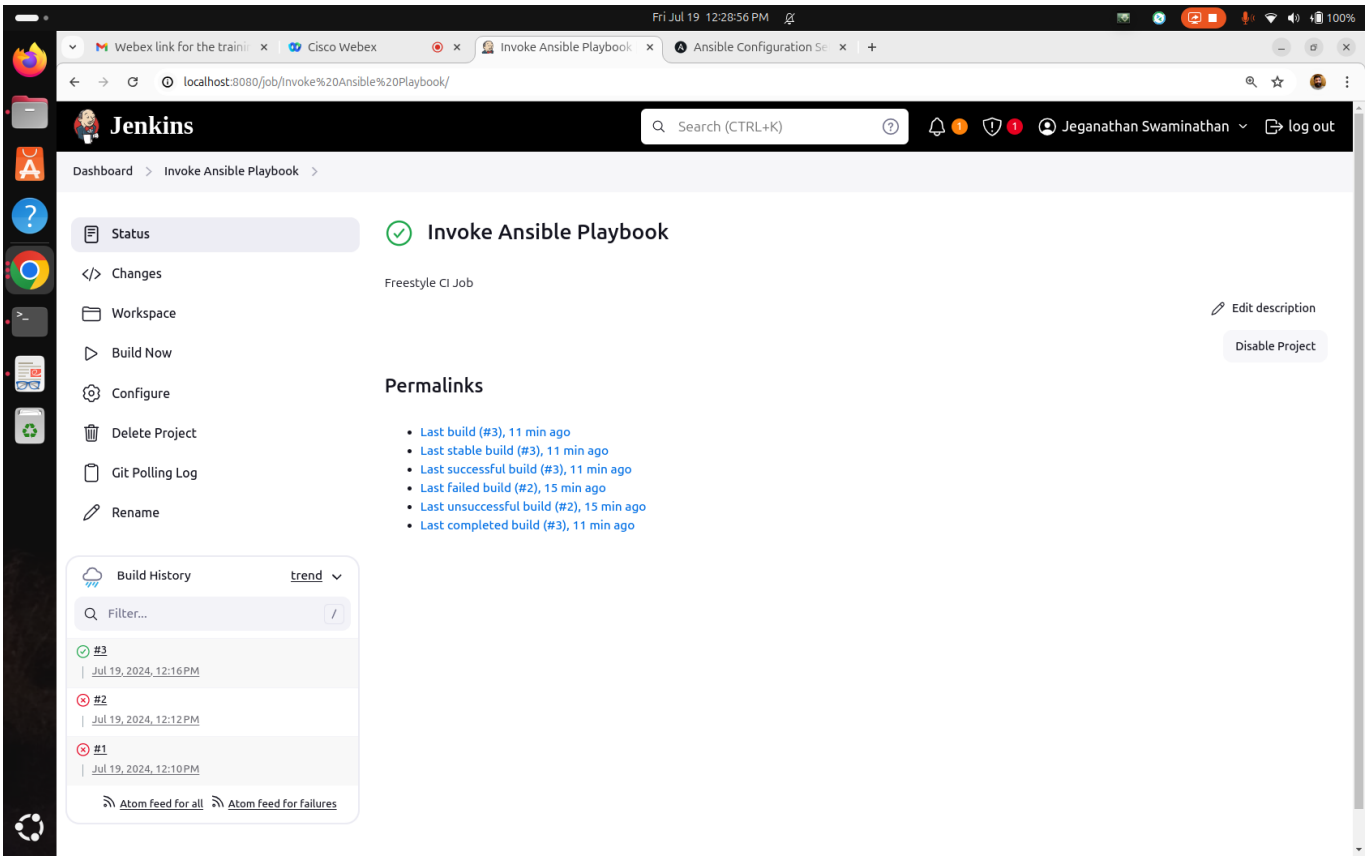


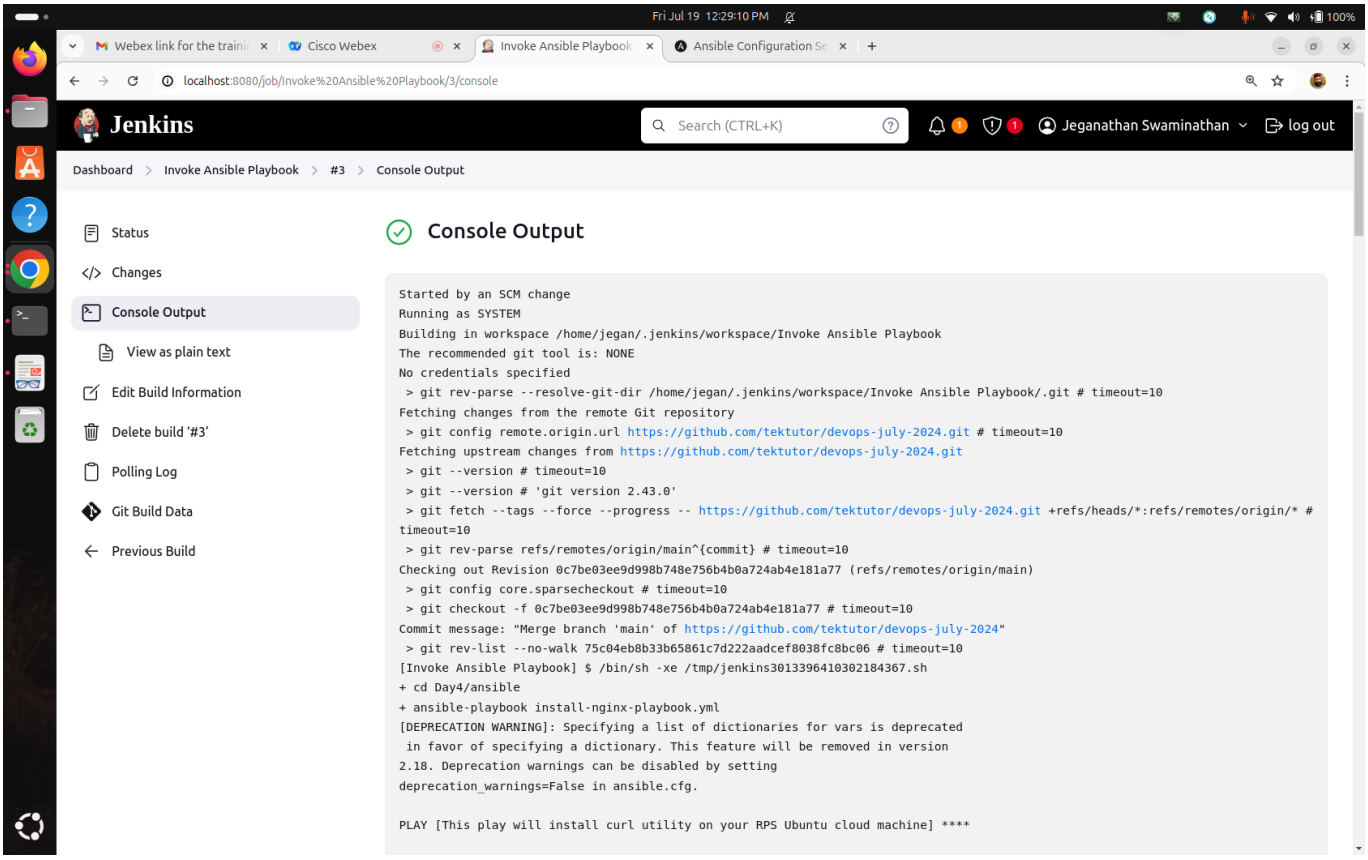
Build Steps

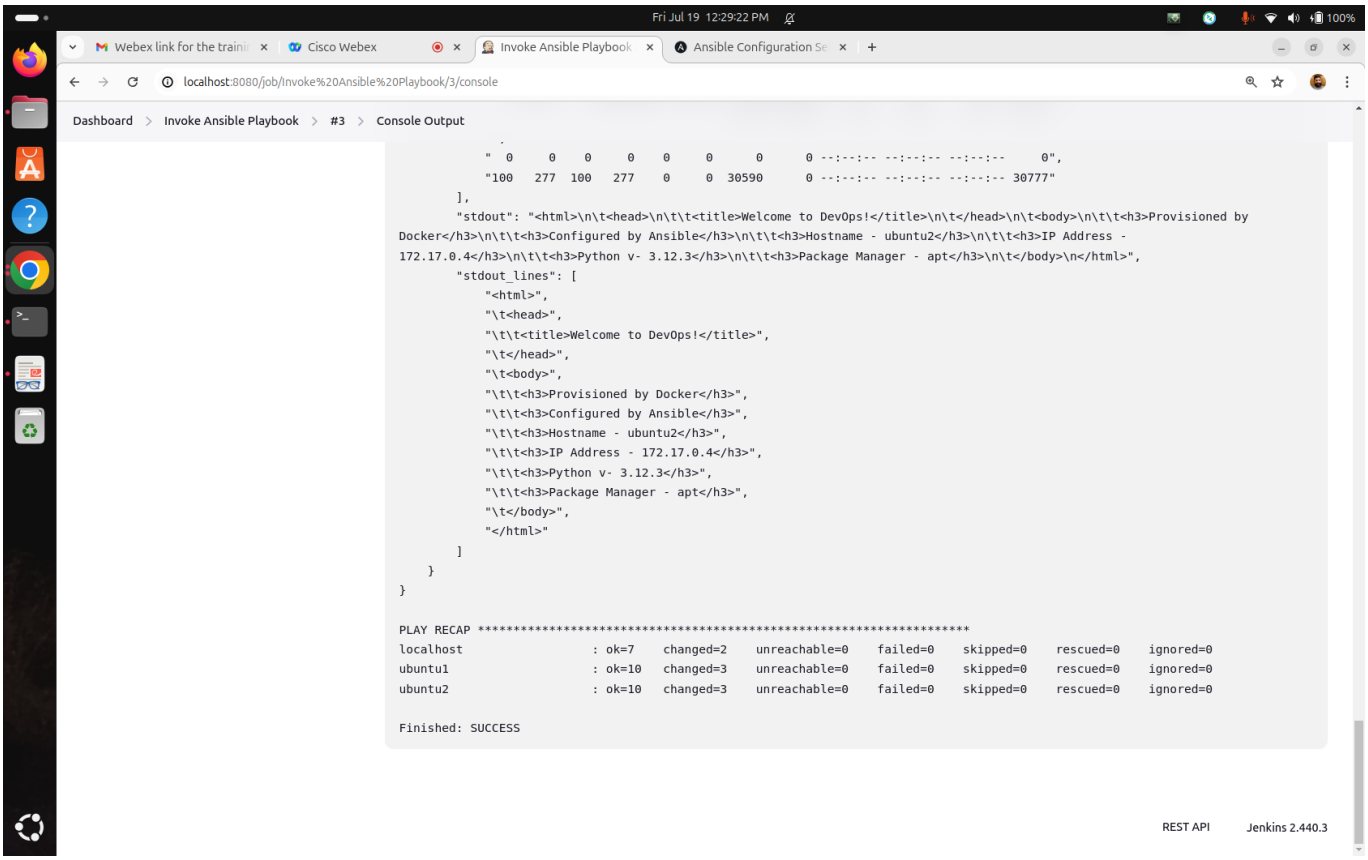


Click "save" button




Fri Jul 19 12:28:56 PM
Webex link for the traini
Cisco Webex
Invoke Ansible Playbook
Ansible Configuration Se
localhost:8080/job/Invoke%20Ansible%20Playbook/
Jenkins
Search (CTRL+K)
Jeganathan Swaminathan
log out
Dashboard
Invoke Ansible Playbook
Status
Changes
Workspace
Build Now
Configure
Delete Project
Git Polling Log
Rename
Build History
trend
Filter...
#3
Jul 19, 2024, 12:16 PM
#2
Jul 19, 2024, 12:12 PM
#1
Jul 19, 2024, 12:10 PM
Atom feed for all
Atom feed for failures
Invoke Ansible Playbook
Freestyle CI Job
Edit description
Disable Project
Permalinks
Last build (#3), 11 min ago
Last stable build (#3), 11 min ago
Last successful build (#3), 11 min ago
Last failed build (#2), 15 min ago
Last unsuccessful build (#2), 15 min ago
Last completed build (#3), 11 min ago


Fri Jul 19 12:29:10 PM
Webex link for the traini
Cisco Webex
Invoke Ansible Playbook
Ansible Configuration Se
localhost:8080/job/Invoke%20Ansible%20Playbook/3/console
Jenkins
Search (CTRL+K)
Jeganathan Swaminathan
log out
Dashboard
Invoke Ansible Playbook
#3
Console Output
Status
Changes
Console Output
View as plain text
Edit Build Information
Delete build '#3'
Polling Log
Git Build Data
Previous Build
Console Output
Started by an SCM change
Running as SYSTEM
Building in workspace /home/jegan/.jenkins/workspace/Invoke Ansible Playbook
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /home/jegan/.jenkins/workspace/Invoke Ansible Playbook/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/tektutor/devops-july-2024.git # timeout=10
Fetching upstream changes from https://github.com/tektutor/devops-july-2024.git
> git --version # timeout=10
> git --version # 'git version 2.43.0'
> git fetch --tags --force --progress -- https://github.com/tektutor/devops-july-2024.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/main^{commit} # timeout=10
Checking out Revision 0c7be03ee9d998b748e756b4b0a724ab4e181a77 (refs/remotes/origin/main)
> git config core.sparsecheckout # timeout=10
> git checkout -f 0c7be03ee9d998b748e756b4b0a724ab4e181a77 # timeout=10
Commit message: "Merge branch 'main' of https://github.com/tektutor/devops-july-2024"
> git rev-list --no-walk 75c04eb8b33b65861c7d222aadcef8038fc8bc06 # timeout=10
[Invoke Ansible Playbook] $ /bin/sh -xe /tmp/jenkins3013396410302184367.sh
+ cd Day4/ansible
+ ansible-playbook install-nginx-playbook.yml
[DEPRECATION WARNING]: Specifying a list of dictionaries for vars is deprecated
in favor of specifying a dictionary. This feature will be removed in version
2.18. Deprecation warnings can be disabled by setting
deprecation_warnings=False in ansible.cfg.
PLAY [This play will install curl utility on your RPS Ubuntu cloud machine] ****



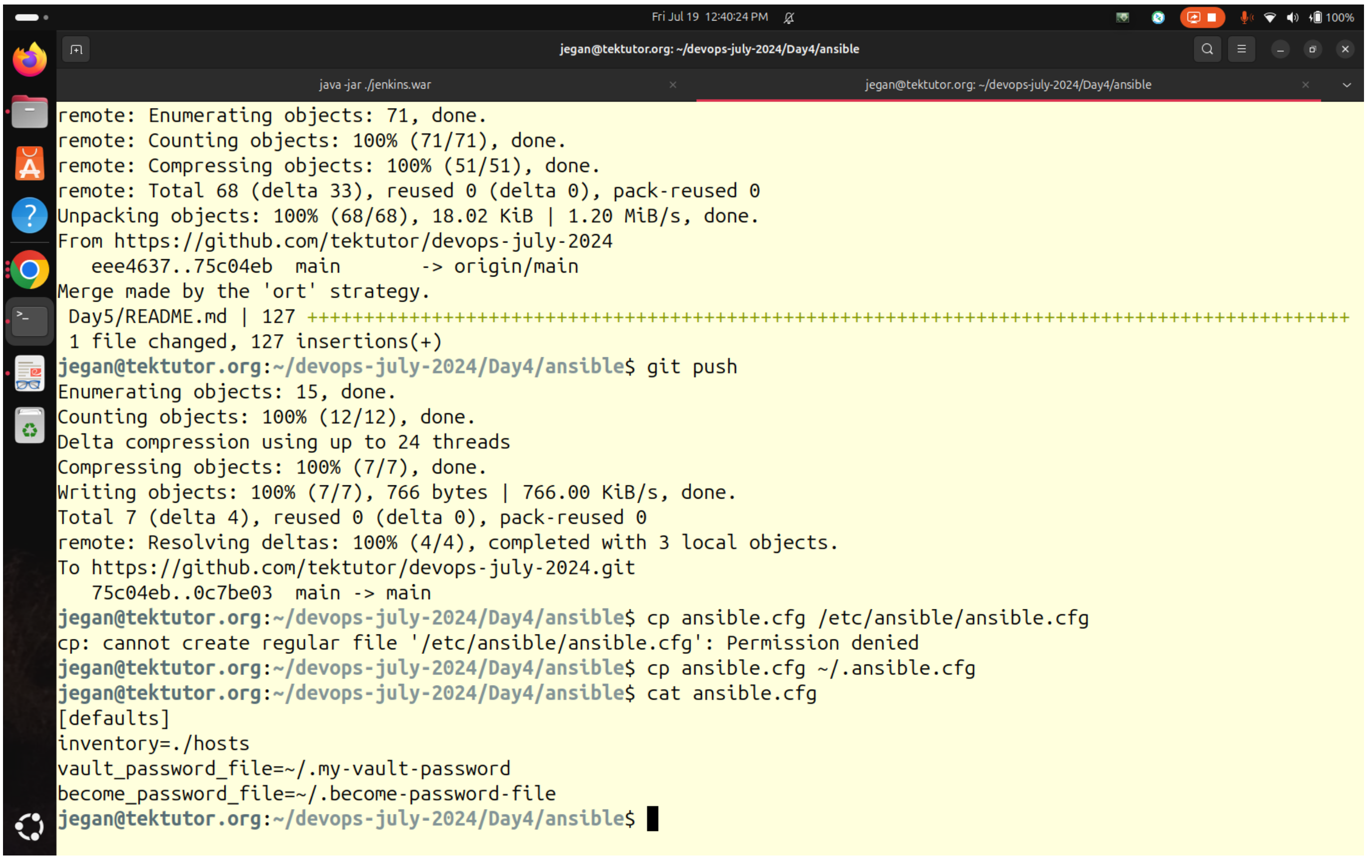
Lab - Invoking Ansible Playing using Ansible Jenkins plugin

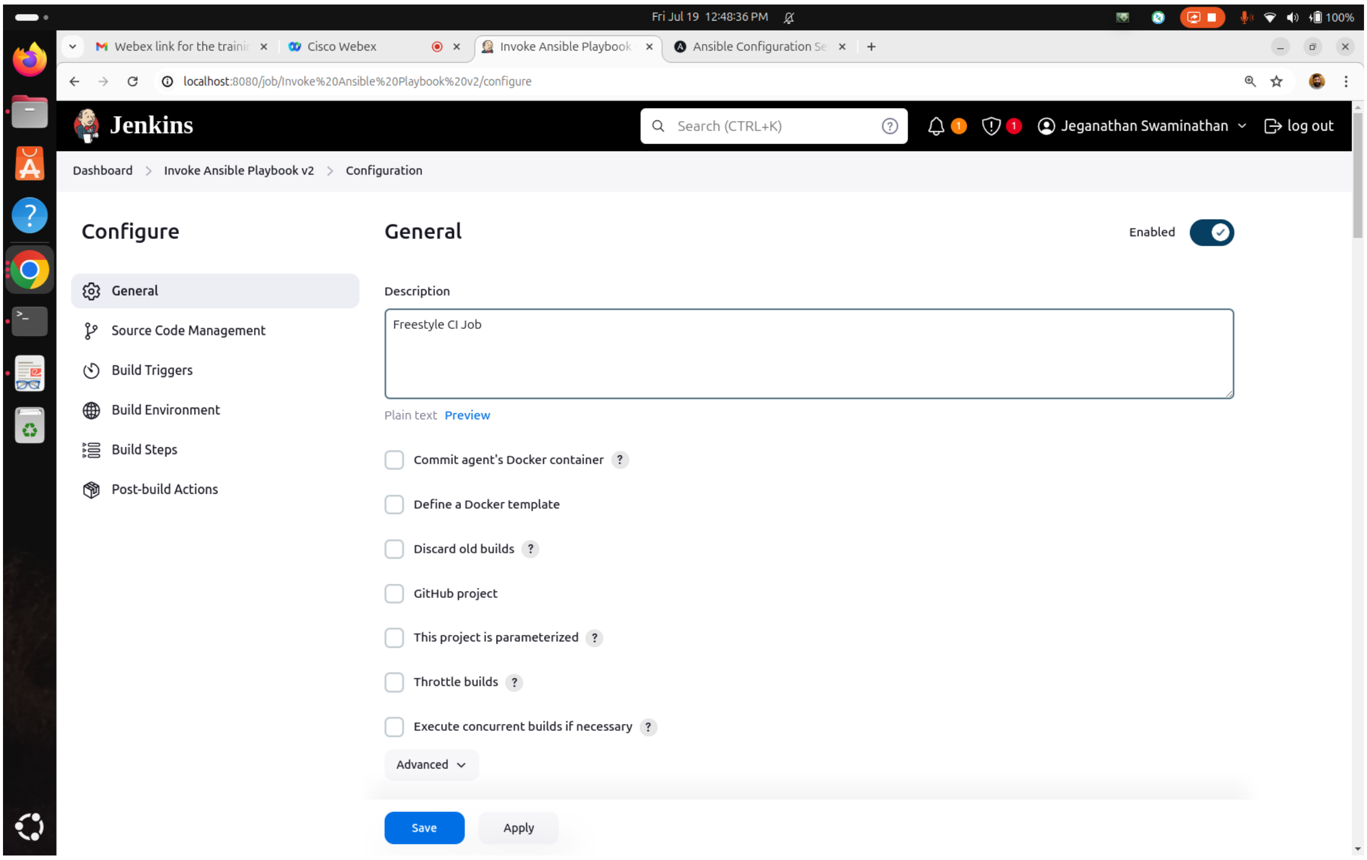
Things to remember

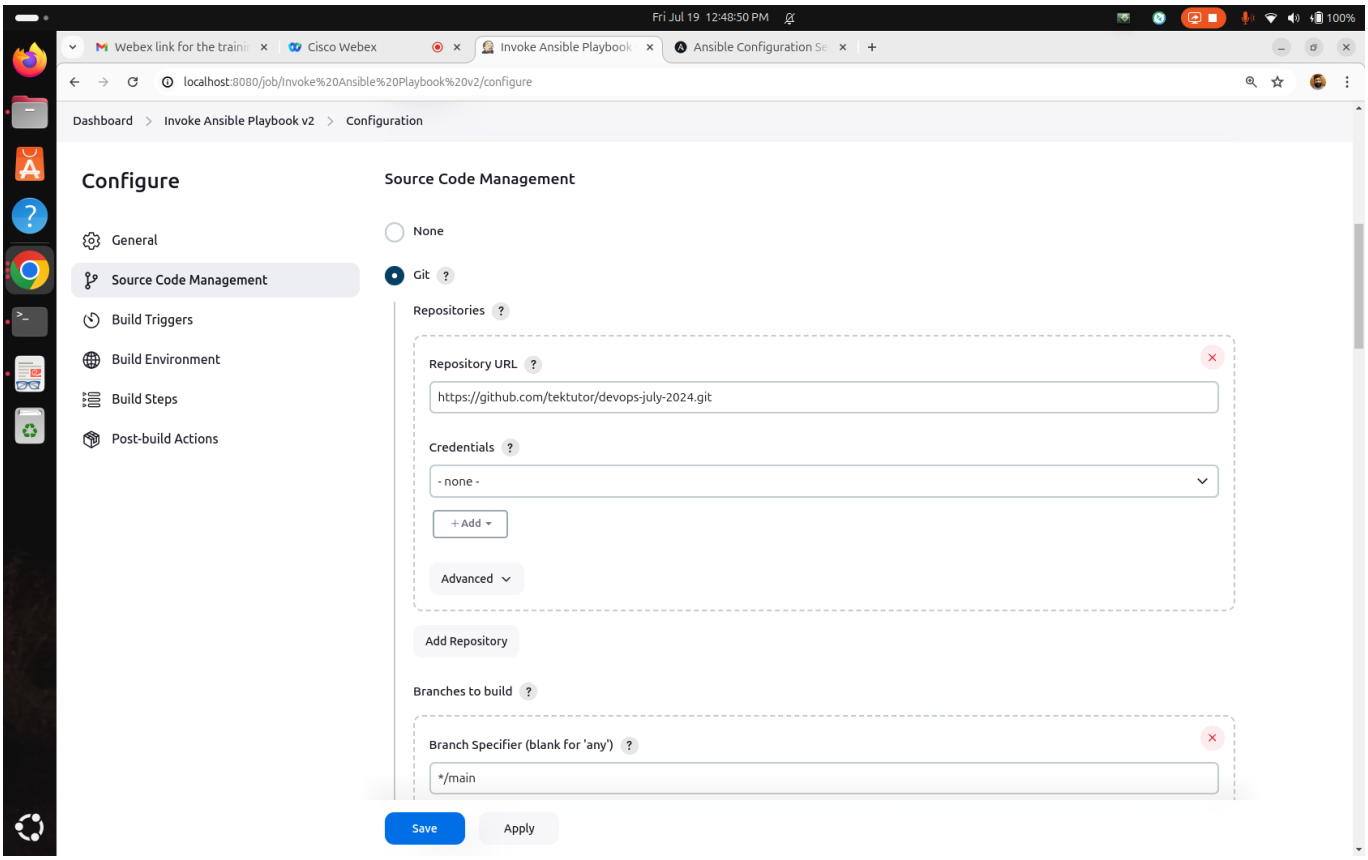
```
- Ansible searches for ansible.cfg as mentioned in the ANSIBLE_CONFIG
environment variable
- In case you have exported the ANSIBLE_CONFIG environment variable, then
ansible searches for ansible.cfg in the current directory
- In case, the ansible.cfg is not present in the current folder then
ansible searches for .ansible.cfg under your home directory
- In case, the ~/.ansible.cfg is not found then ansible finally searches
ansible.cfg under /etc/ansible/ansible.cfg folder
- In the above paths, wherever ansible finds the ansible.cfg first it picks
it and ignores the other options.
```

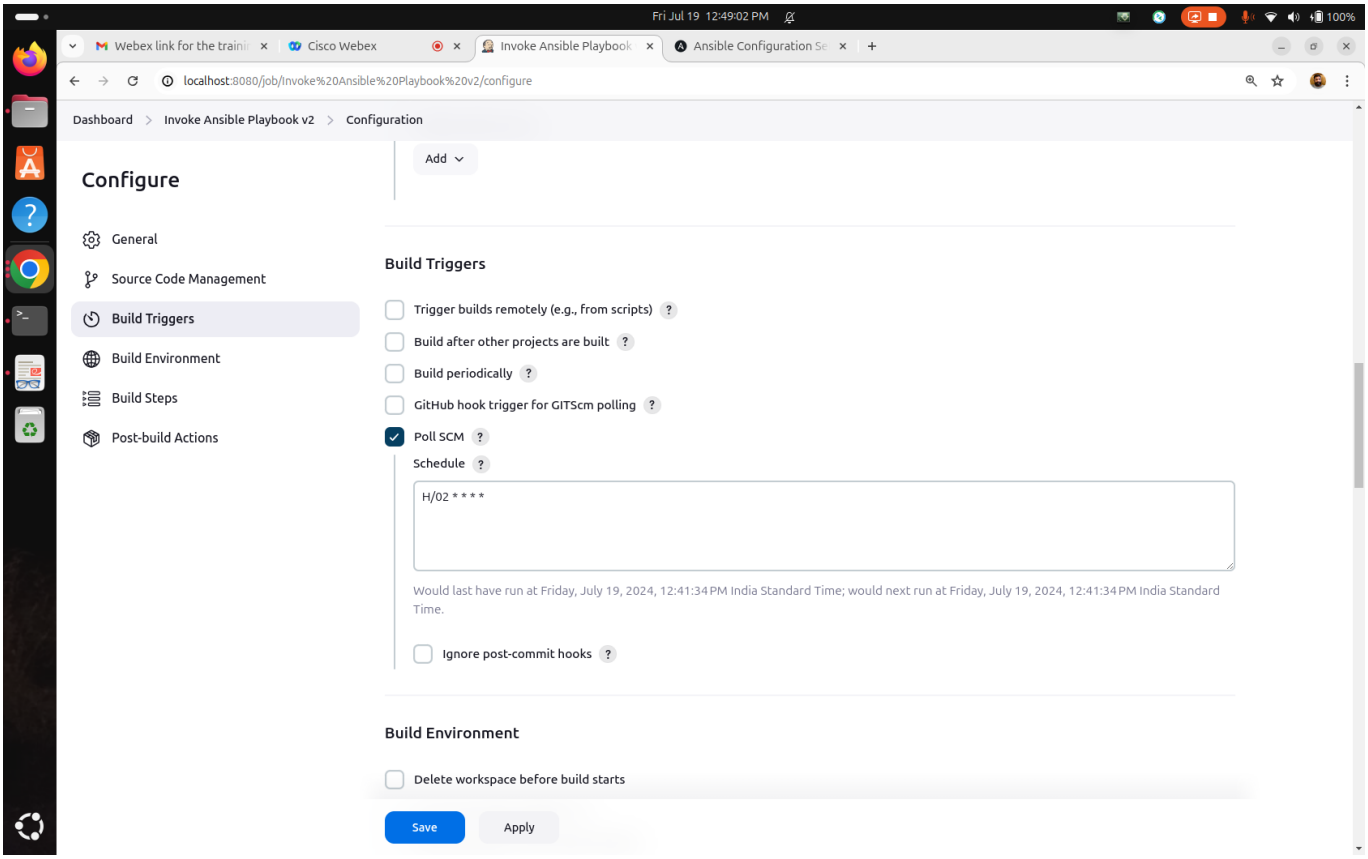
Copy the ansible.cfg from your Day4/ansible folder to your home directory

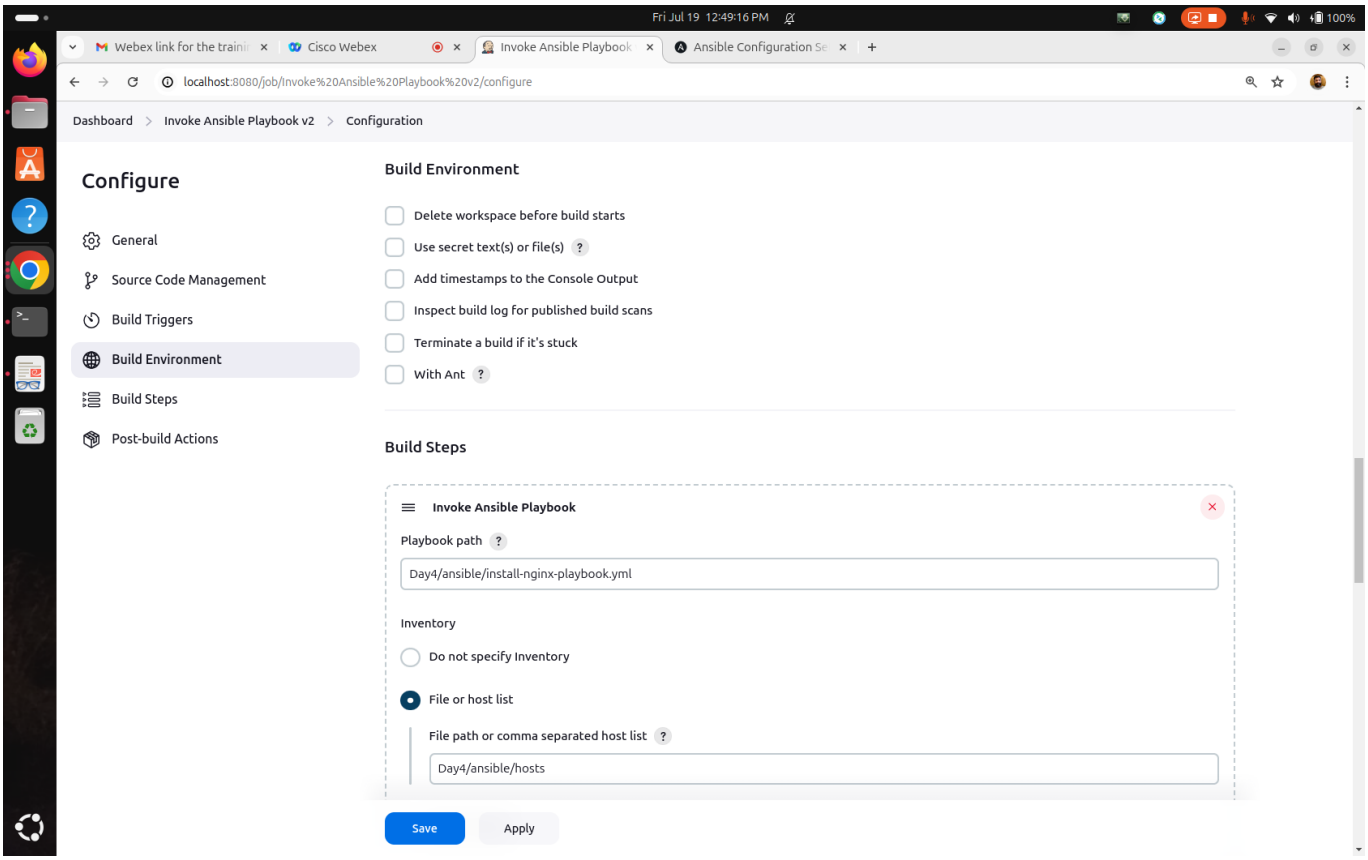
```
cd ~/devops-july-2024
git pull
cd Day4/ansible
cp ansible.cfg ~/.ansible.cfg
```

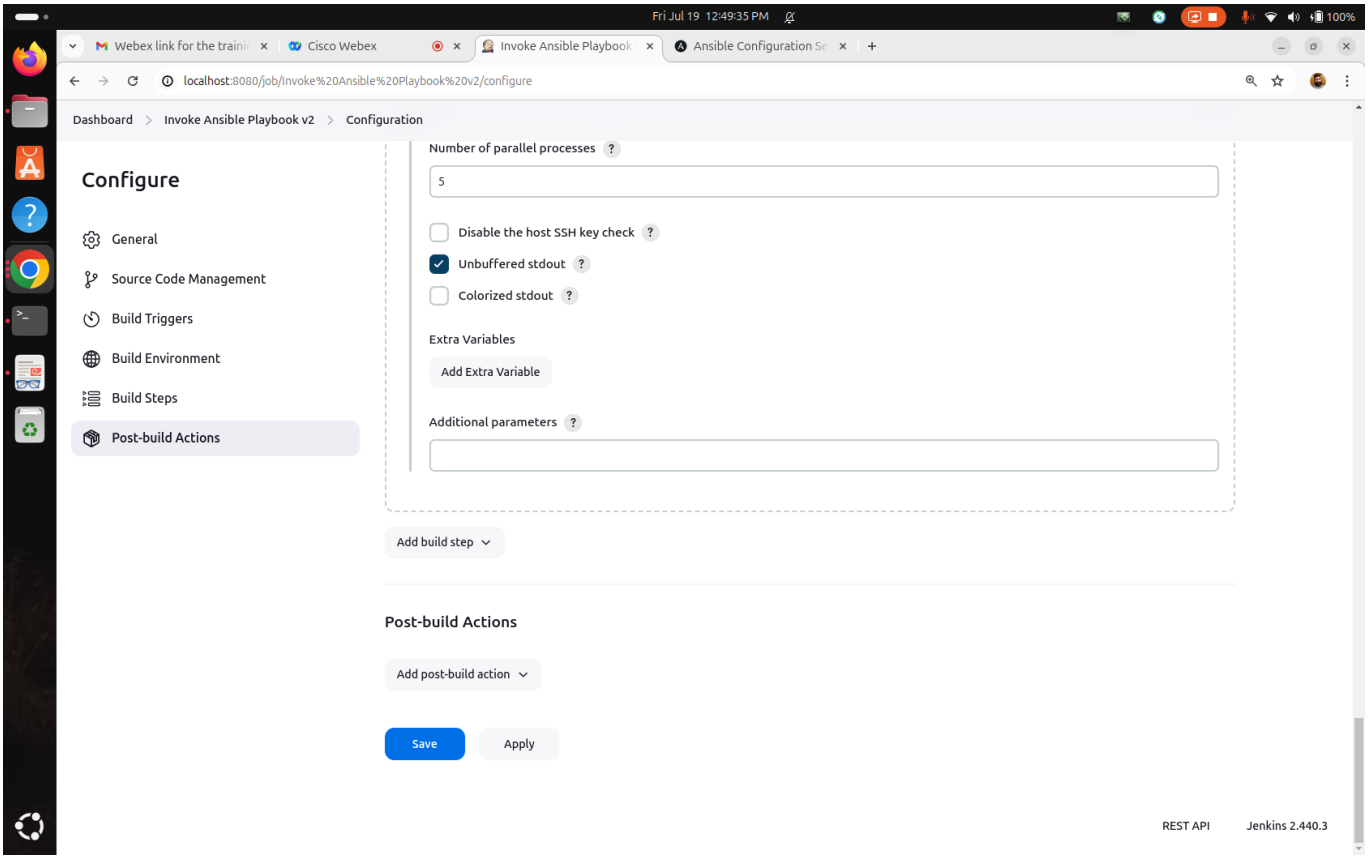

Fri Jul 19 12:40:24 PM
jegan@tektutor.org: ~/devops-july-2024/Day4/ansible
java -jar ./jenkins.war
jegan@tektutor.org: ~/devops-july-2024/Day4/ansible
remote: Enumerating objects: 71, done.
remote: Counting objects: 100% (71/71), done.
remote: Compressing objects: 100% (51/51), done.
remote: Total 68 (delta 33), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (68/68), 18.02 KiB | 1.20 MiB/s, done.
From https://github.com/tektutor/devops-july-2024
eee4637..75c04eb main -> origin/main
Merge made by the 'ort' strategy.
Day5/README.md | 127 +++
1 file changed, 127 insertions(+)
jegan@tektutor.org:~/devops-july-2024/Day4/ansible$ git push
Enumerating objects: 15, done.
Counting objects: 100% (12/12), done.
Delta compression using up to 24 threads
Compressing objects: 100% (7/7), done.
Writing objects: 100% (7/7), 766 bytes | 766.00 KiB/s, done.
Total 7 (delta 4), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (4/4), completed with 3 local objects.
To https://github.com/tektutor/devops-july-2024.git
75c04eb..0c7be03 main -> main
jegan@tektutor.org:~/devops-july-2024/Day4/ansible$ cp ansible.cfg /etc/ansible/ansible.cfg
cp: cannot create regular file '/etc/ansible/ansible.cfg': Permission denied
jegan@tektutor.org:~/devops-july-2024/Day4/ansible$ cp ansible.cfg ~/.ansible.cfg
jegan@tektutor.org:~/devops-july-2024/Day4/ansible$ cat ansible.cfg
[defaults]
inventory=./hosts
vault_password_file=~/.my-vault-password
become_password_file=~/.become-password-file
jegan@tektutor.org:~/devops-july-2024/Day4/ansible$

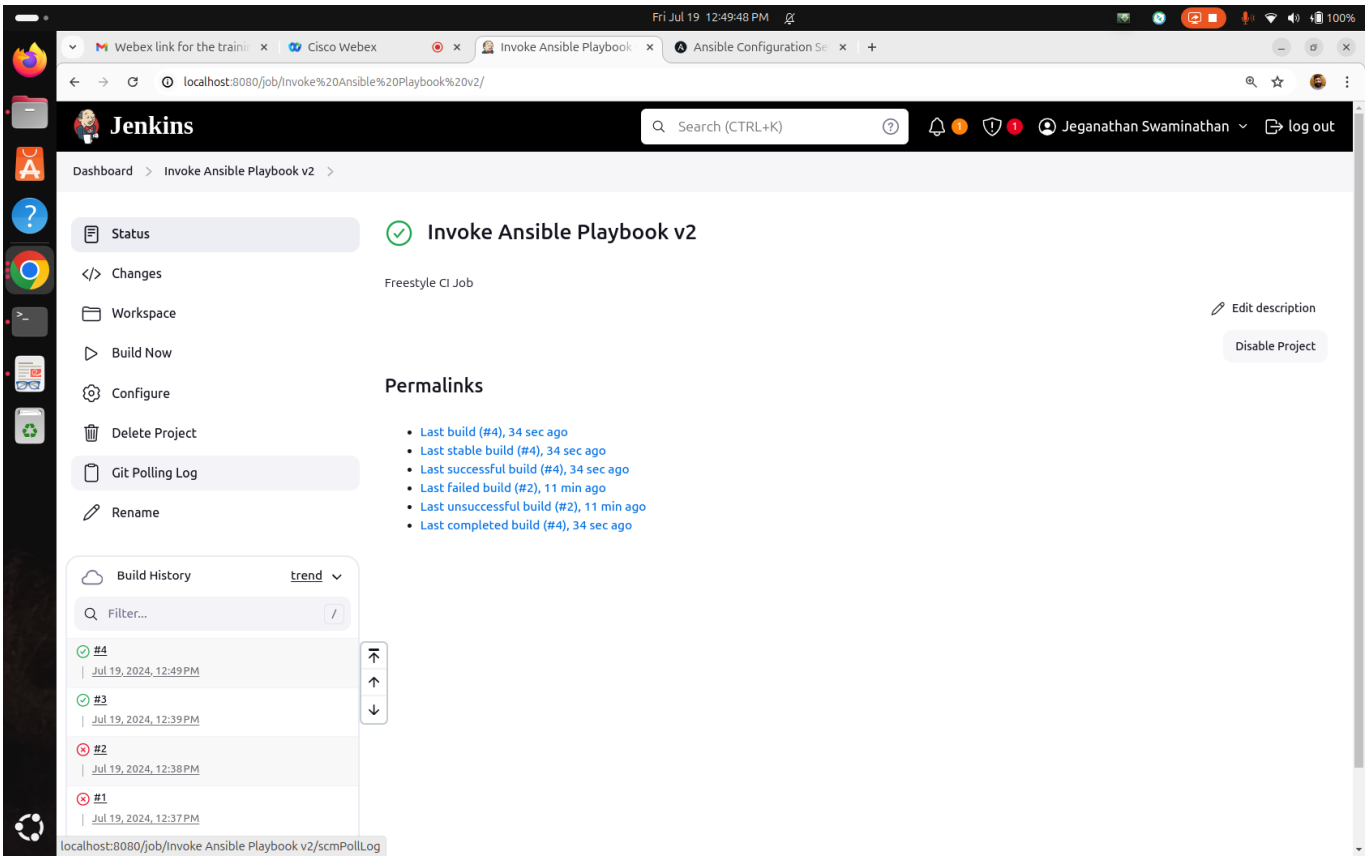

Fri Jul 19 12:48:36 PM
Webex link for the trainin
Cisco Webex
Invoke Ansible Playbook
Ansible Configuration Se
localhost:8080/job/Invoke%20Ansible%20Playbook%20v2/configure
Jenkins
Search (CTRL+K)
Jeganathan Swaminathan
log out
Dashboard > Invoke Ansible Playbook v2 > Configuration
Configure
General
Source Code Management
Build Triggers
Build Environment
Build Steps
Post-build Actions
General
Enabled
Description
Freestyle CI Job
Plain text Preview
Commit agent's Docker container
Define a Docker template
Discard old builds
GitHub project
This project is parameterized
Throttle builds
Execute concurrent builds if necessary
Advanced
Save
Apply

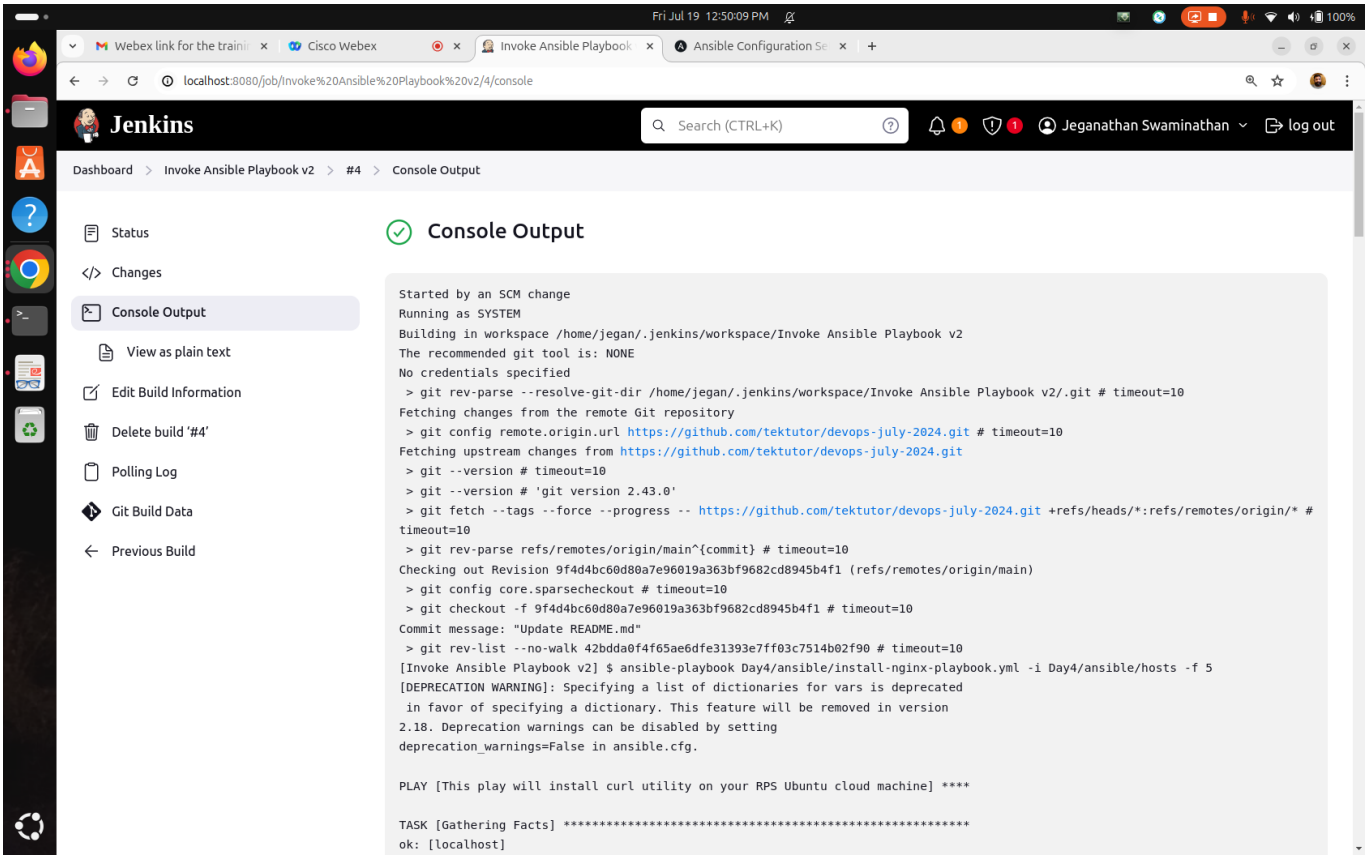

Fri Jul 19 12:48:50 PM
Webex link for the traini
Cisco Webex
Invoke Ansible Playbook
Ansible Configuration Se
localhost:8080/job/Invoke%20Ansible%20Playbook%20v2/configure
Dashboard
Invoke Ansible Playbook v2
Configuration
Configure
General
Source Code Management
Build Triggers
Build Environment
Build Steps
Post-build Actions
Source Code Management
None
Git
Repositories
Repository URL
https://github.com/tektutor/devops-july-2024.git
Credentials
- none -
+ Add
Advanced
Add Repository
Branches to build
Branch Specifier (blank for 'any')
*/main
Save
Apply

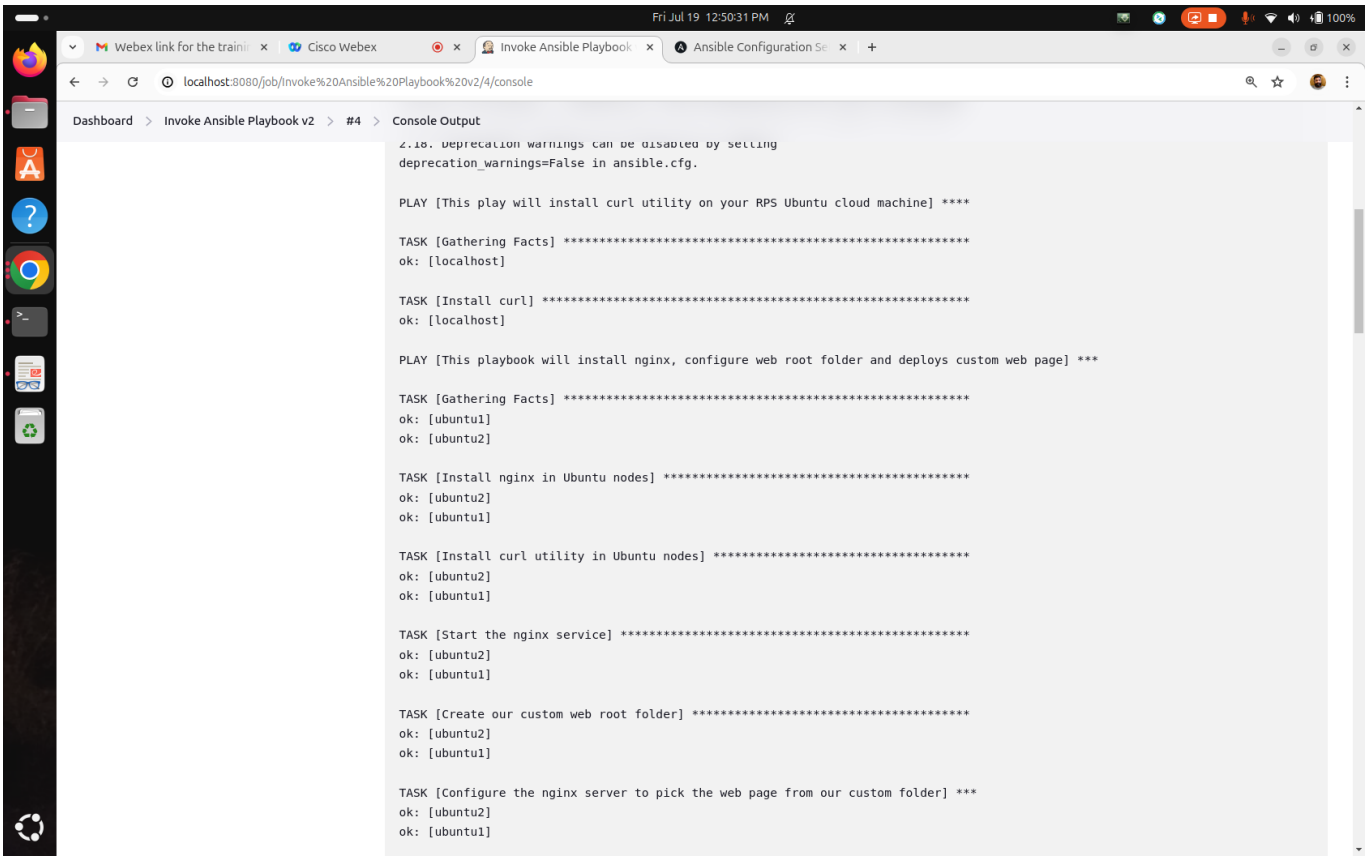

Fri Jul 19 12:49:02 PM
Webex link for the traini
Cisco Webex
Invoke Ansible Playbook
Ansible Configuration Se
localhost:8080/job/Invoke%20Ansible%20Playbook%20v2/configure
Dashboard
Invoke Ansible Playbook v2
Configuration
Add
Configure
General
Source Code Management
Build Triggers
Build Environment
Build Steps
Post-build Actions
Build Triggers
Trigger builds remotely (e.g., from scripts)
Build after other projects are built
Build periodically
GitHub hook trigger for GITScm polling
Poll SCM
Schedule
H/02 * * * *
Would last have run at Friday, July 19, 2024, 12:41:34 PM India Standard Time; would next run at Friday, July 19, 2024, 12:41:34 PM India Standard Time.
Ignore post-commit hooks
Build Environment
Delete workspace before build starts
Save
Apply

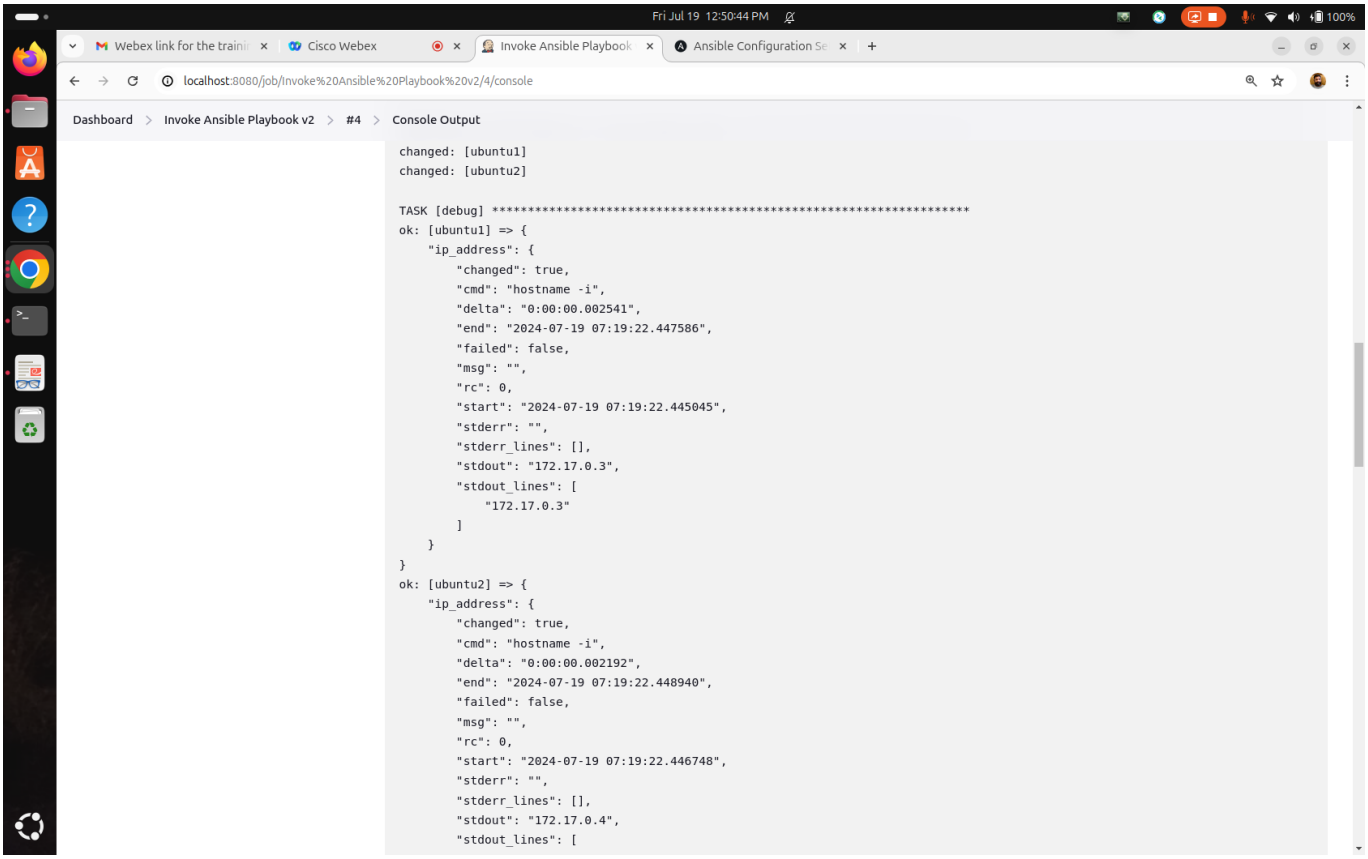

Fri Jul 19 12:49:16 PM
Webex link for the traini
Cisco Webex
Invoke Ansible Playbook
Ansible Configuration Se
localhost:8080/job/Invoke%20Ansible%20Playbook%20v2/configure
Dashboard
Invoke Ansible Playbook v2
Configuration
Configure
General
Source Code Management
Build Triggers
Build Environment
Build Steps
Post-build Actions
Build Environment
Delete workspace before build starts
Use secret text(s) or file(s)
Add timestamps to the Console Output
Inspect build log for published build scans
Terminate a build if it's stuck
With Ant
Build Steps
Invoke Ansible Playbook
Playbook path
Day4/ansible/install-nginx-playbook.yml
Inventory
Do not specify Inventory
File or host list
File path or comma separated host list
Day4/ansible/hosts
Save
Apply

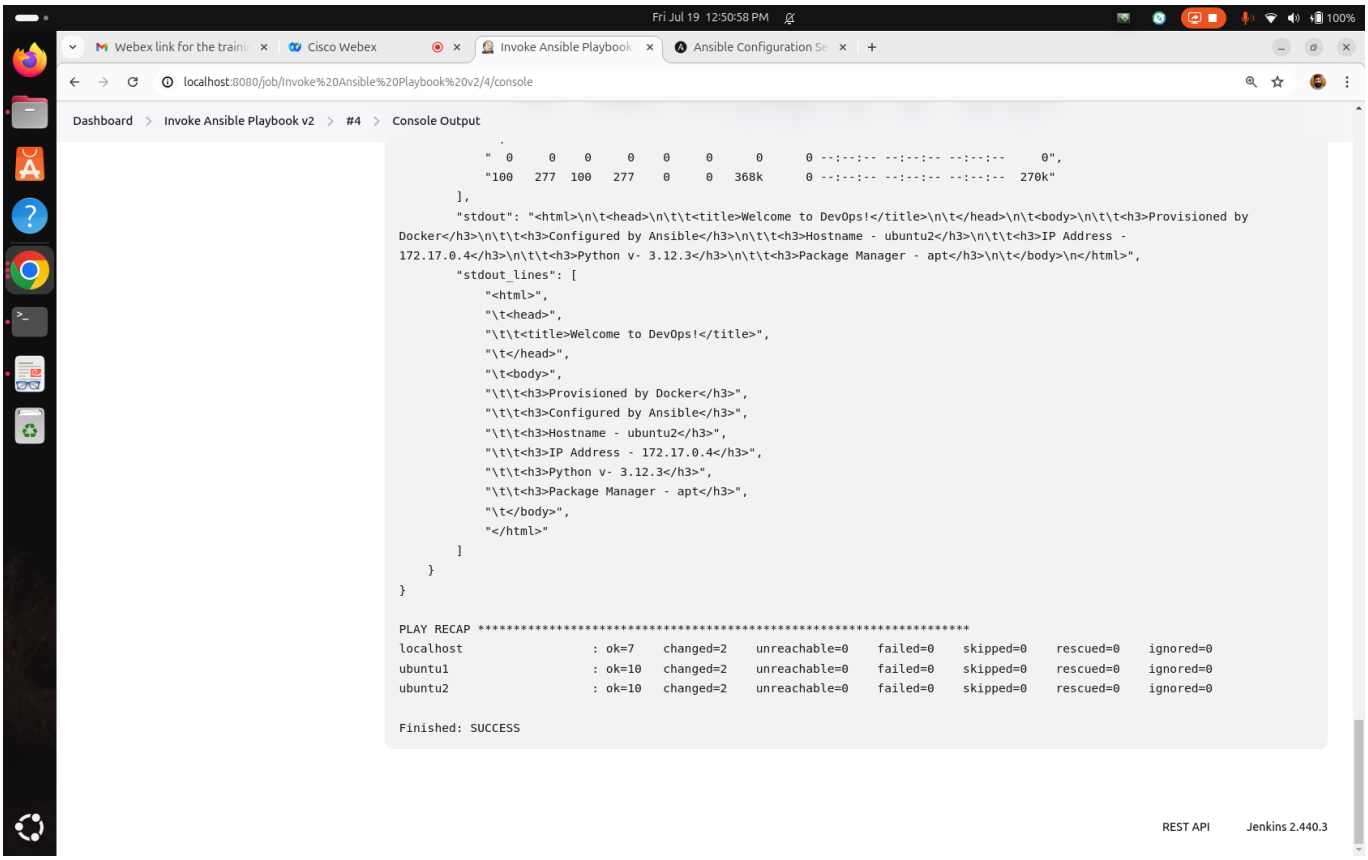

Fri Jul 19 12:49:35 PM
Webex link for the traini
Cisco Webex
Invoke Ansible Playbook
Ansible Configuration Se
localhost:8080/job/Invoke%20Ansible%20Playbook%20v2/configure
Dashboard
Invoke Ansible Playbook v2
Configuration
Configure
General
Source Code Management
Build Triggers
Build Environment
Build Steps
Post-build Actions
Number of parallel processes
5
Disable the host SSH key check
Unbuffered stdout
Colorized stdout
Extra Variables
Add Extra Variable
Additional parameters
Add build step
Post-build Actions
Add post-build action
Save
Apply
REST API
Jenkins 2.440.3


Fri Jul 19 12:49:48 PM
Webex link for the traini
Cisco Webex
Invoke Ansible Playbook
Ansible Configuration Se
localhost:8080/job/Invoke%20Ansible%20Playbook%20v2/
Jenkins
Search (CTRL+K)
Jeganathan Swaminathan
log out
Dashboard
Invoke Ansible Playbook v2
Status
Changes
Workspace
Build Now
Configure
Delete Project
Git Polling Log
Rename
Invoke Ansible Playbook v2
Freestyle CI Job
Edit description
Disable Project
Permalinks
Last build (#4), 34 sec ago
Last stable build (#4), 34 sec ago
Last successful build (#4), 34 sec ago
Last failed build (#2), 11 min ago
Last unsuccessful build (#2), 11 min ago
Last completed build (#4), 34 sec ago
Build History
trend
Filter...
#4
Jul 19, 2024, 12:49 PM
#3
Jul 19, 2024, 12:39 PM
#2
Jul 19, 2024, 12:38 PM
#1
Jul 19, 2024, 12:37 PM
localhost:8080/job/Invoke Ansible Playbook v2/scmPollLog


Fri Jul 19 12:50:09 PM
Webex link for the traini
Cisco Webex
Invoke Ansible Playbook
Ansible Configuration Se
localhost:8080/job/Invoke%20Ansible%20Playbook%20v2/4/console
Jenkins
Search (CTRL+K)
Jeganathan Swaminathan
log out
Dashboard
Invoke Ansible Playbook v2
#4
Console Output
Status
Changes
Console Output
View as plain text
Edit Build Information
Delete build '#4'
Polling Log
Git Build Data
Previous Build
Console Output
Started by an SCM change
Running as SYSTEM
Building in workspace /home/jegan/.jenkins/workspace/Invoke Ansible Playbook v2
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /home/jegan/.jenkins/workspace/Invoke Ansible Playbook v2/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/tektutor/devops-july-2024.git # timeout=10
Fetching upstream changes from https://github.com/tektutor/devops-july-2024.git
> git --version # timeout=10
> git --version # 'git version 2.43.0'
> git fetch --tags --force --progress -- https://github.com/tektutor/devops-july-2024.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/main^{commit} # timeout=10
Checking out Revision 9f4d4bc60d80a7e96019a363bf9682cd8945b4f1 (refs/remotes/origin/main)
> git config core.sparsecheckout # timeout=10
> git checkout -f 9f4d4bc60d80a7e96019a363bf9682cd8945b4f1 # timeout=10
Commit message: "Update README.md"
> git rev-list --no-walk 42bdda0f4f65ae6dfe31393e7ff03c7514b02f90 # timeout=10
[Invoke Ansible Playbook v2] $ ansible-playbook Day4/ansible/install-nginx-playbook.yml -i Day4/ansible/hosts -f 5
[DEPRECATION WARNING]: Specifying a list of dictionaries for vars is deprecated
in favor of specifying a dictionary. This feature will be removed in version
2.18. Deprecation warnings can be disabled by setting
deprecation_warnings=False in ansible.cfg.
PLAY [This play will install curl utility on your RPS Ubuntu cloud machine] ****
TASK [Gathering Facts] ****
ok: [localhost]


Fri Jul 19 12:50:31 PM
Webex link for the traini
Cisco Webex
Invoke Ansible Playbook
Ansible Configuration Se
localhost:8080/job/Invoke%20Ansible%20Playbook%20v2/4/console
Dashboard > Invoke Ansible Playbook v2 > #4 > Console Output
2.18. Deprecation warnings can be disabled by setting
deprecation_warnings=False in ansible.cfg.
PLAY [This play will install curl utility on your RPS Ubuntu cloud machine] ****
TASK [Gathering Facts] ****
ok: [localhost]
TASK [Install curl] ****
ok: [localhost]
PLAY [This playbook will install nginx, configure web root folder and deploys custom web page] ***
TASK [Gathering Facts] ****
ok: [ubuntu1]
ok: [ubuntu2]
TASK [Install nginx in Ubuntu nodes] ****
ok: [ubuntu2]
ok: [ubuntu1]
TASK [Install curl utility in Ubuntu nodes] ****
ok: [ubuntu2]
ok: [ubuntu1]
TASK [Start the nginx service] ****
ok: [ubuntu2]
ok: [ubuntu1]
TASK [Create our custom web root folder] ****
ok: [ubuntu2]
ok: [ubuntu1]
TASK [Configure the nginx server to pick the web page from our custom folder] ***
ok: [ubuntu2]
ok: [ubuntu1]


Fri Jul 19 12:50:44 PM
Webex link for the traini
Cisco Webex
Invoke Ansible Playbook
Ansible Configuration Se
localhost:8080/job/Invoke%20Ansible%20Playbook%20v2/4/console
Dashboard > Invoke Ansible Playbook v2 > #4 > Console Output
changed: [ubuntu1]
changed: [ubuntu2]
TASK [debug] ****
ok: [ubuntu1] => {
"ip_address": {
"changed": true,
"cmd": "hostname -i",
"delta": "0:00:00.002541",
"end": "2024-07-19 07:19:22.447586",
"failed": false,
"msg": "",
"rc": 0,
"start": "2024-07-19 07:19:22.445045",
"stderr": "",
"stderr_lines": [],
"stdout": "172.17.0.3",
"stdout_lines": [
"172.17.0.3"
]
}
}
ok: [ubuntu2] => {
"ip_address": {
"changed": true,
"cmd": "hostname -i",
"delta": "0:00:00.002192",
"end": "2024-07-19 07:19:22.448940",
"failed": false,
"msg": "",
"rc": 0,
"start": "2024-07-19 07:19:22.446748",
"stderr": "",
"stderr_lines": [],
"stdout": "172.17.0.4",
"stdout_lines": [



Info - Jenkins Master-Slave Node Setup usecases

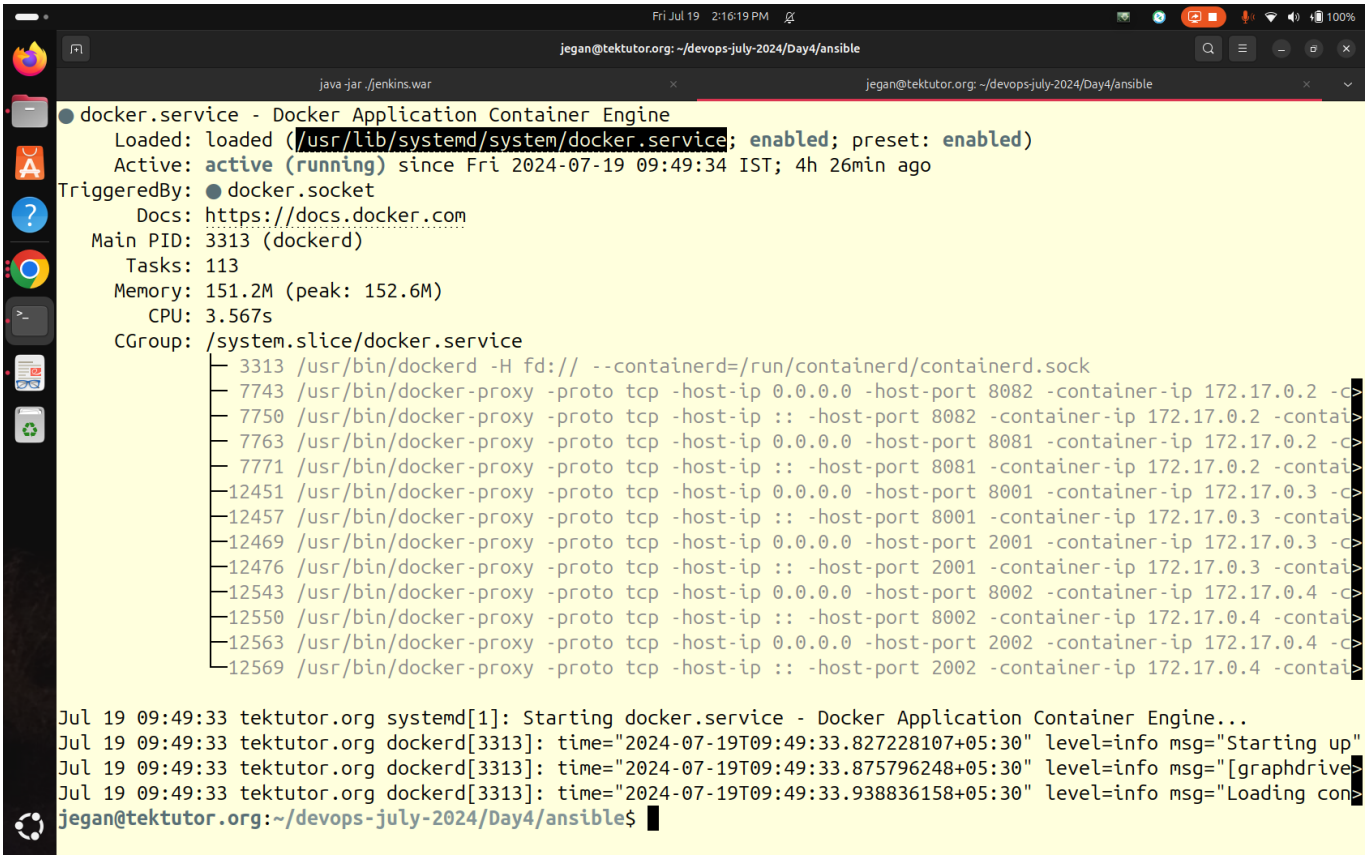
```
- Currently used Jenkins is the Master Jenkins that comes with Web GUI
- We could add many slave Jenkins which are headless, they only
instructions from Jenkins Master
- end-users will not able to give instructions or interact with Jenkins
slave instances
- the main usecase of master-slave node setup is
  - to support executing parallel builds
  - to support running builds and testing in different OS environments
- the slave nodes can be ec2 instance running in aws, azure vm instances,
or could on-prem virtual machine or physical machine or docker containers
- in our case, we are going to use docker containers as Jenkins slave nodes
```

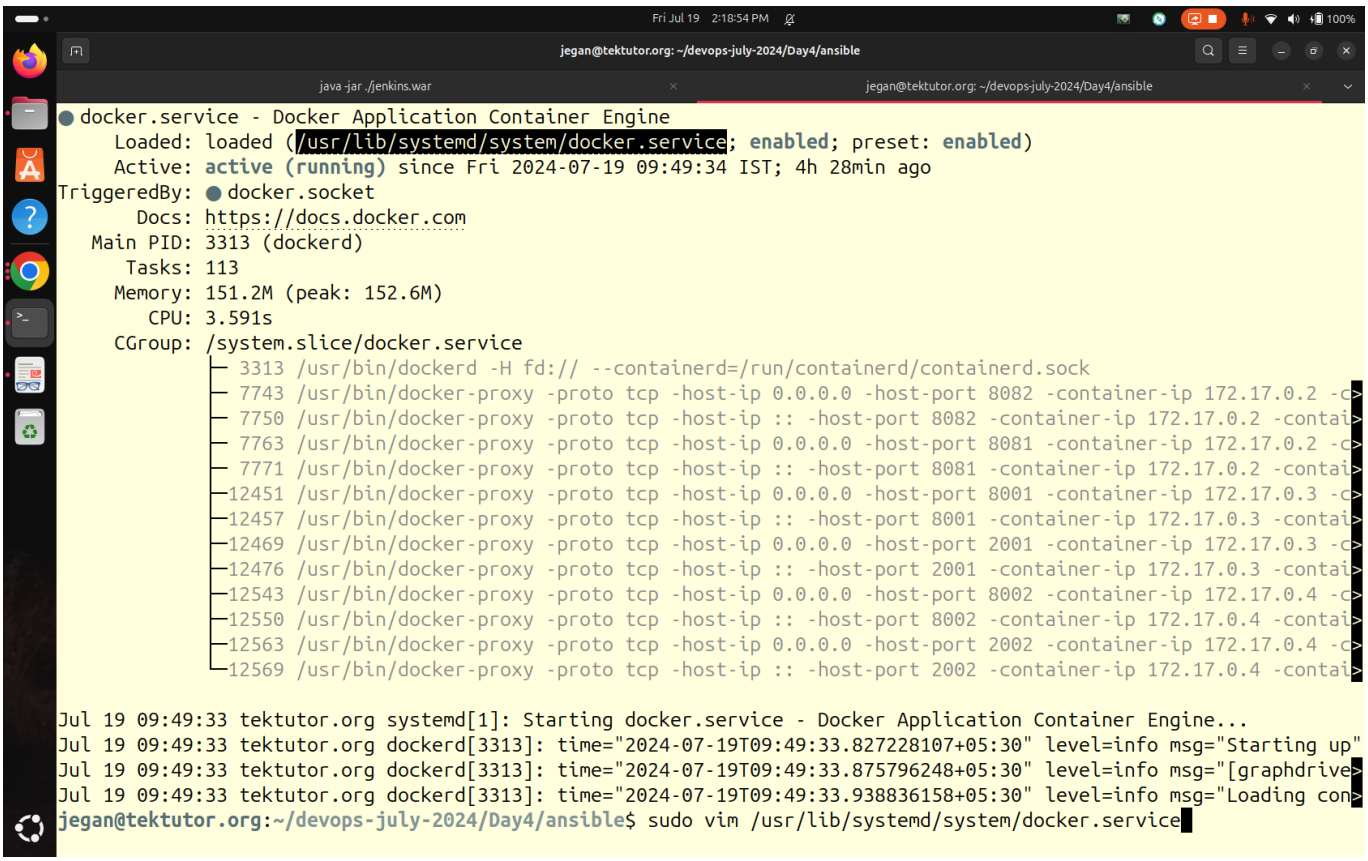
Lab - Configuring Docker containers as Jenkins slave nodes

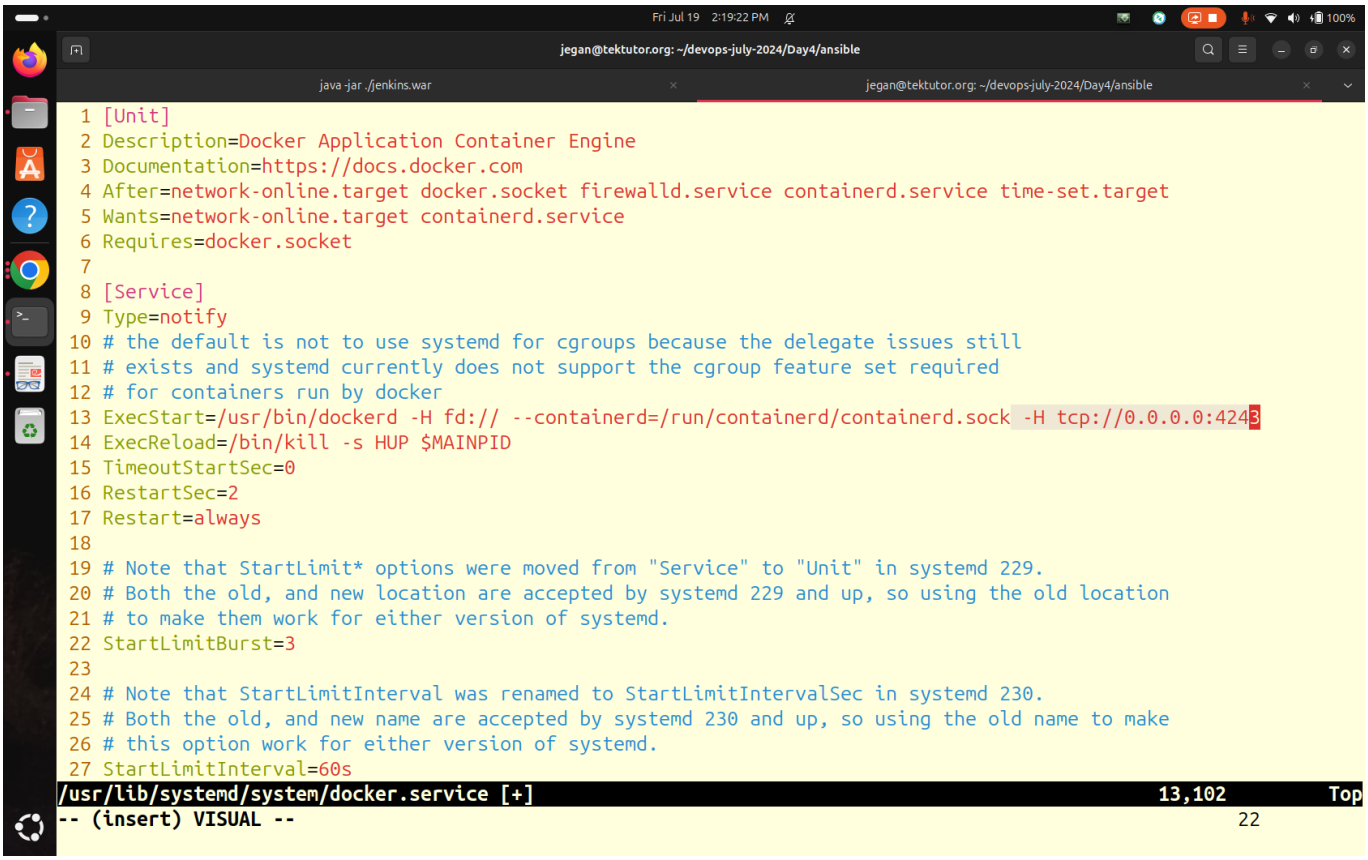
We need to configure the Docker Service (Service) - Do this in the terminal

```
sudo systemctl status docker
sudo gedit /usr/lib/systemd/system/docker.service
sudo systemctl daemon-reload
sudo systemctl restart docker
sudo systemctl status docker
```

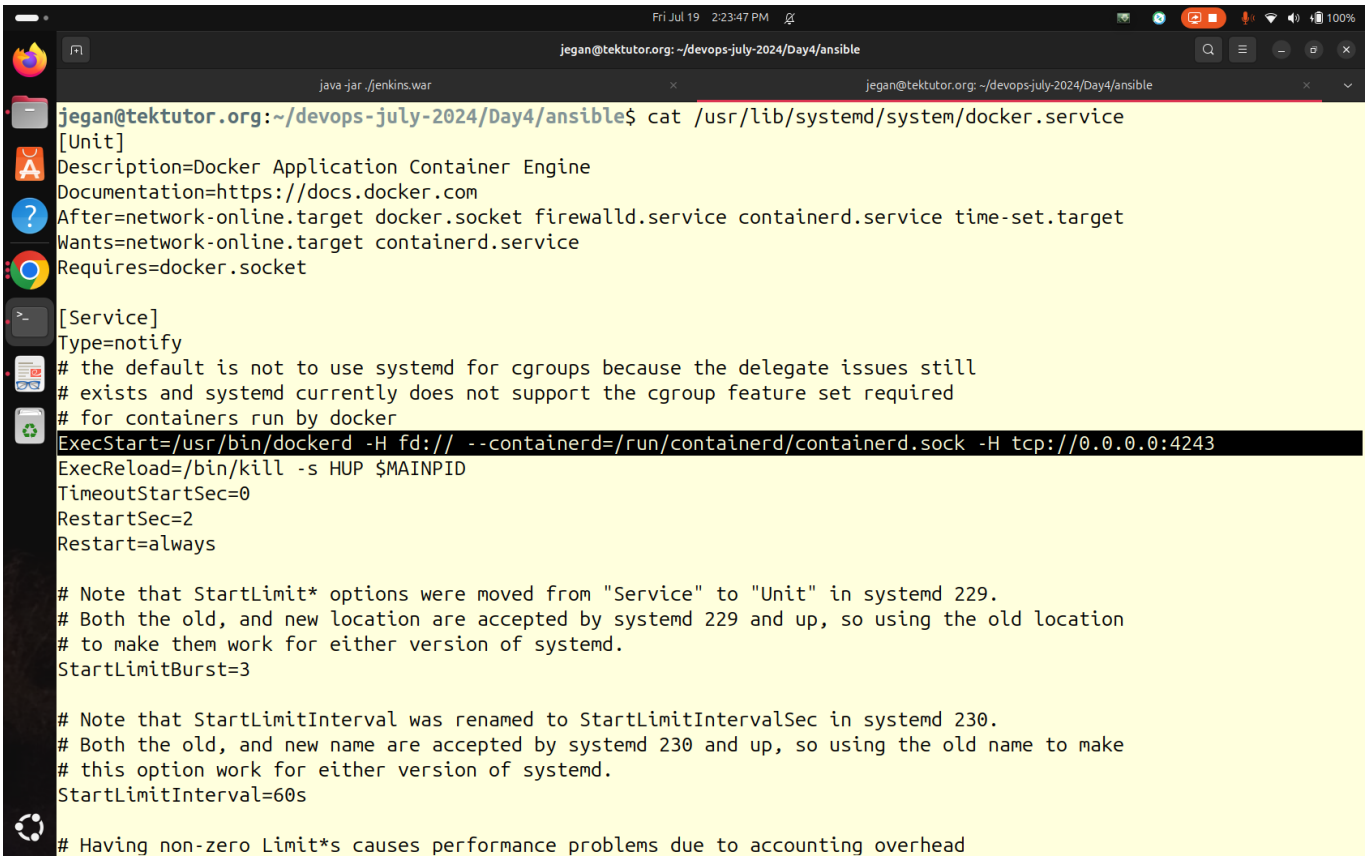
Expected output

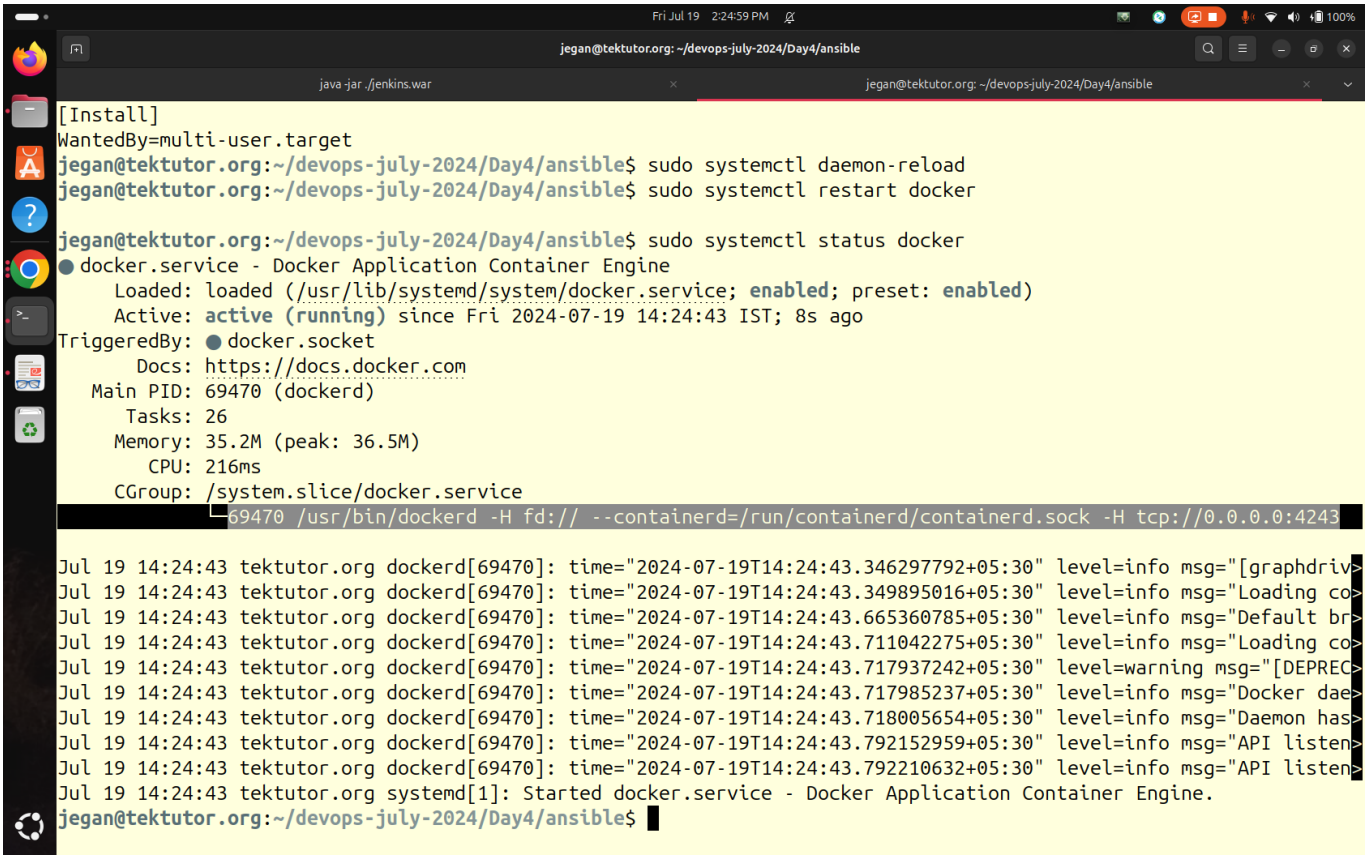


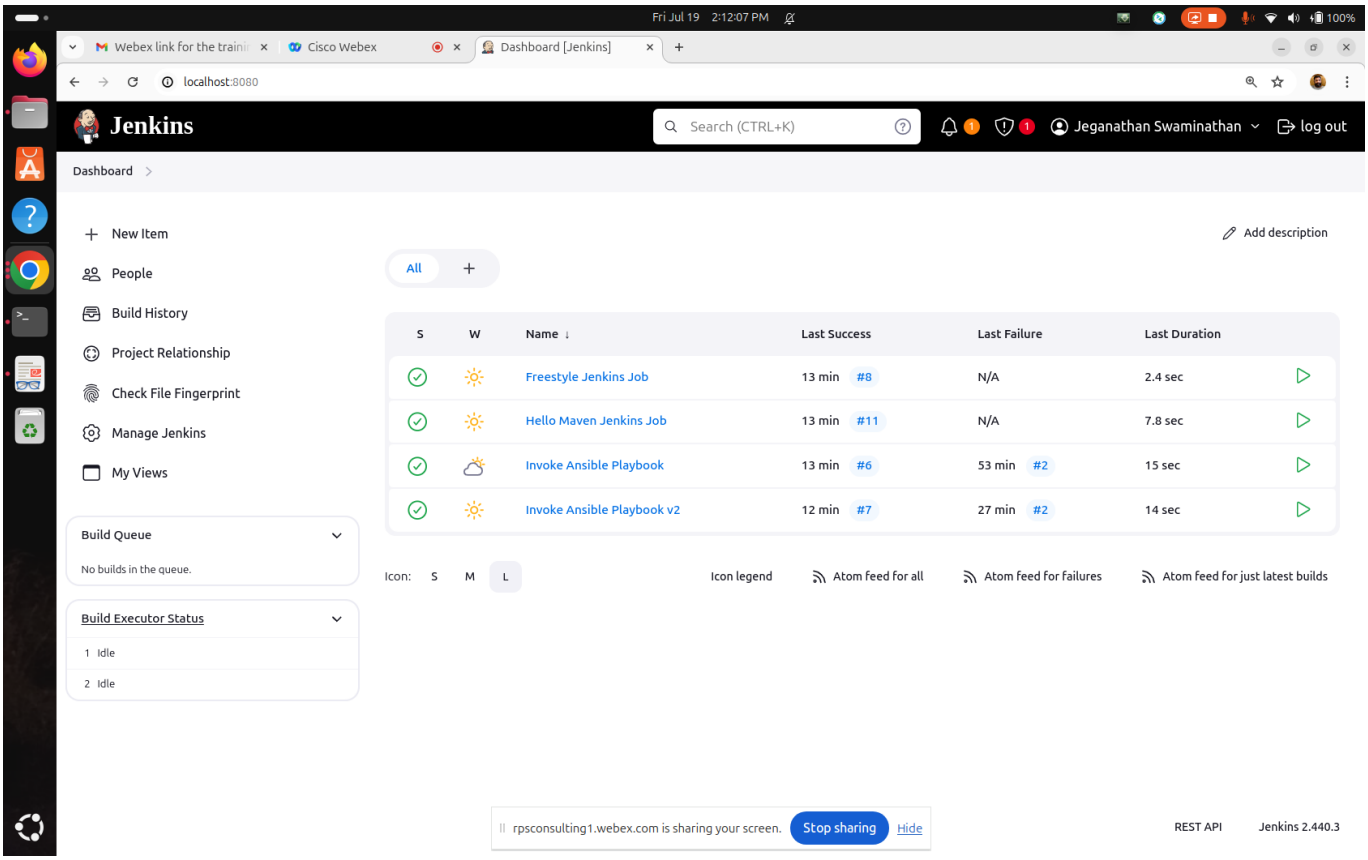




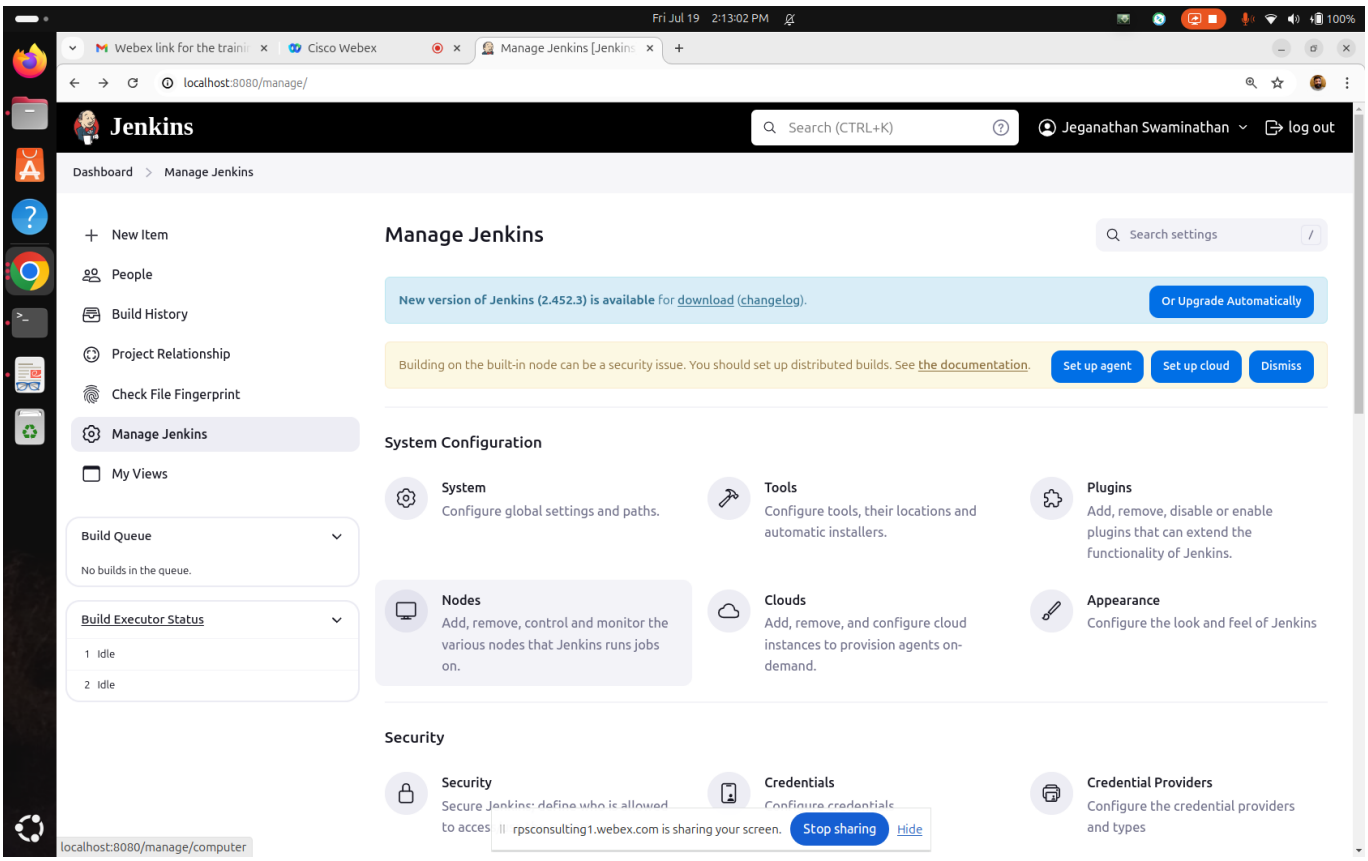
Save and exit


Fri Jul 19 2:23:47 PM
jegan@tektutor.org: ~/devops-july-2024/Day4/ansible
java -jar ./jenkins.war
jegan@tektutor.org: ~/devops-july-2024/Day4/ansible
jegan@tektutor.org:~/devops-july-2024/Day4/ansible$ cat /usr/lib/systemd/system/docker.service
[Unit]
Description=Docker Application Container Engine
Documentation=https://docs.docker.com
After=network-online.target docker.socket firewalld.service containerd.service time-set.target
Wants=network-online.target containerd.service
Requires=docker.socket
[Service]
Type=notify
# the default is not to use systemd for cgroups because the delegate issues still
# exists and systemd currently does not support the cgroup feature set required
# for containers run by docker
ExecStart=/usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock -H tcp://0.0.0.0:4243
ExecReload=/bin/kill -s HUP $MAINPID
TimeoutStartSec=0
RestartSec=2
Restart=always
# Note that StartLimit* options were moved from "Service" to "Unit" in systemd 229.
# Both the old, and new location are accepted by systemd 229 and up, so using the old location
# to make them work for either version of systemd.
StartLimitBurst=3
# Note that StartLimitInterval was renamed to StartLimitIntervalSec in systemd 230.
# Both the old, and new name are accepted by systemd 230 and up, so using the old name to make
# this option work for either version of systemd.
StartLimitInterval=60s
# Having non-zero Limit*s causes performance problems due to accounting overhead

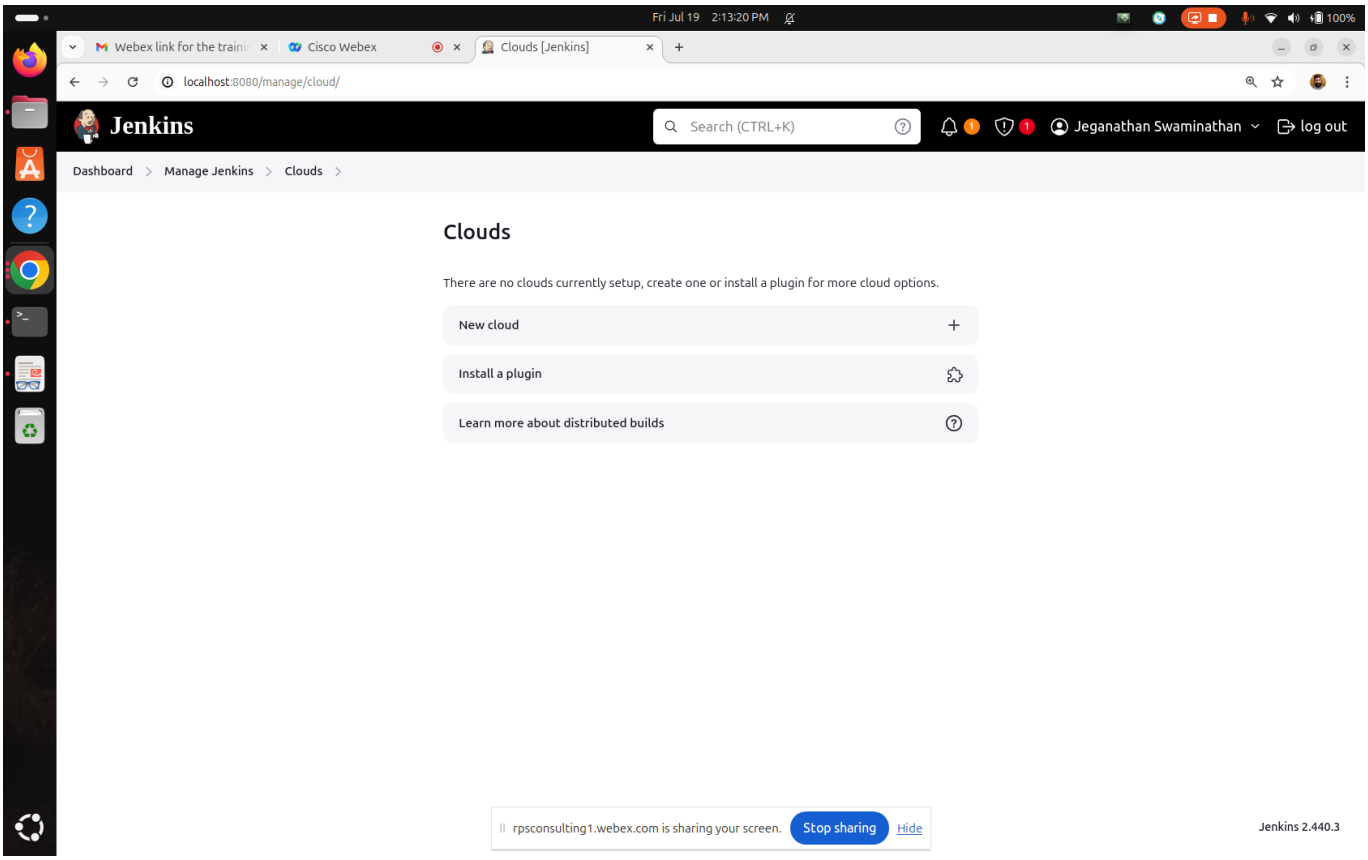

Fri Jul 19 2:24:59 PM
jegan@tektutor.org: ~/devops-july-2024/Day4/ansible
java -jar ./jenkins.war
jegan@tektutor.org: ~/devops-july-2024/Day4/ansible
[Install]
WantedBy=multi-user.target
jegan@tektutor.org:~/devops-july-2024/Day4/ansible$ sudo systemctl daemon-reload
jegan@tektutor.org:~/devops-july-2024/Day4/ansible$ sudo systemctl restart docker
jegan@tektutor.org:~/devops-july-2024/Day4/ansible$ sudo systemctl status docker
● docker.service - Docker Application Container Engine
Loaded: loaded (/usr/lib/systemd/system/docker.service; enabled; preset: enabled)
Active: active (running) since Fri 2024-07-19 14:24:43 IST; 8s ago
TriggeredBy: ● docker.socket
Docs: https://docs.docker.com
Main PID: 69470 (dockerd)
Tasks: 26
Memory: 35.2M (peak: 36.5M)
CPU: 216ms
CGroup: /system.slice/docker.service
└─69470 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock -H tcp://0.0.0.0:4243
Jul 19 14:24:43 tektutor.org dockerd[69470]: time="2024-07-19T14:24:43.346297792+05:30" level=info msg="[graphdriv
Jul 19 14:24:43 tektutor.org dockerd[69470]: time="2024-07-19T14:24:43.349895016+05:30" level=info msg="Loading co
Jul 19 14:24:43 tektutor.org dockerd[69470]: time="2024-07-19T14:24:43.665360785+05:30" level=info msg="Default br
Jul 19 14:24:43 tektutor.org dockerd[69470]: time="2024-07-19T14:24:43.711042275+05:30" level=info msg="Loading co
Jul 19 14:24:43 tektutor.org dockerd[69470]: time="2024-07-19T14:24:43.717937242+05:30" level=warning msg="[DEPREC
Jul 19 14:24:43 tektutor.org dockerd[69470]: time="2024-07-19T14:24:43.717985237+05:30" level=info msg="Docker dae
Jul 19 14:24:43 tektutor.org dockerd[69470]: time="2024-07-19T14:24:43.718005654+05:30" level=info msg="Daemon has
Jul 19 14:24:43 tektutor.org dockerd[69470]: time="2024-07-19T14:24:43.792152959+05:30" level=info msg="API listen
Jul 19 14:24:43 tektutor.org dockerd[69470]: time="2024-07-19T14:24:43.792210632+05:30" level=info msg="API listen
Jul 19 14:24:43 tektutor.org systemd[1]: Started docker.service - Docker Application Container Engine.
jegan@tektutor.org:~/devops-july-2024/Day4/ansible$



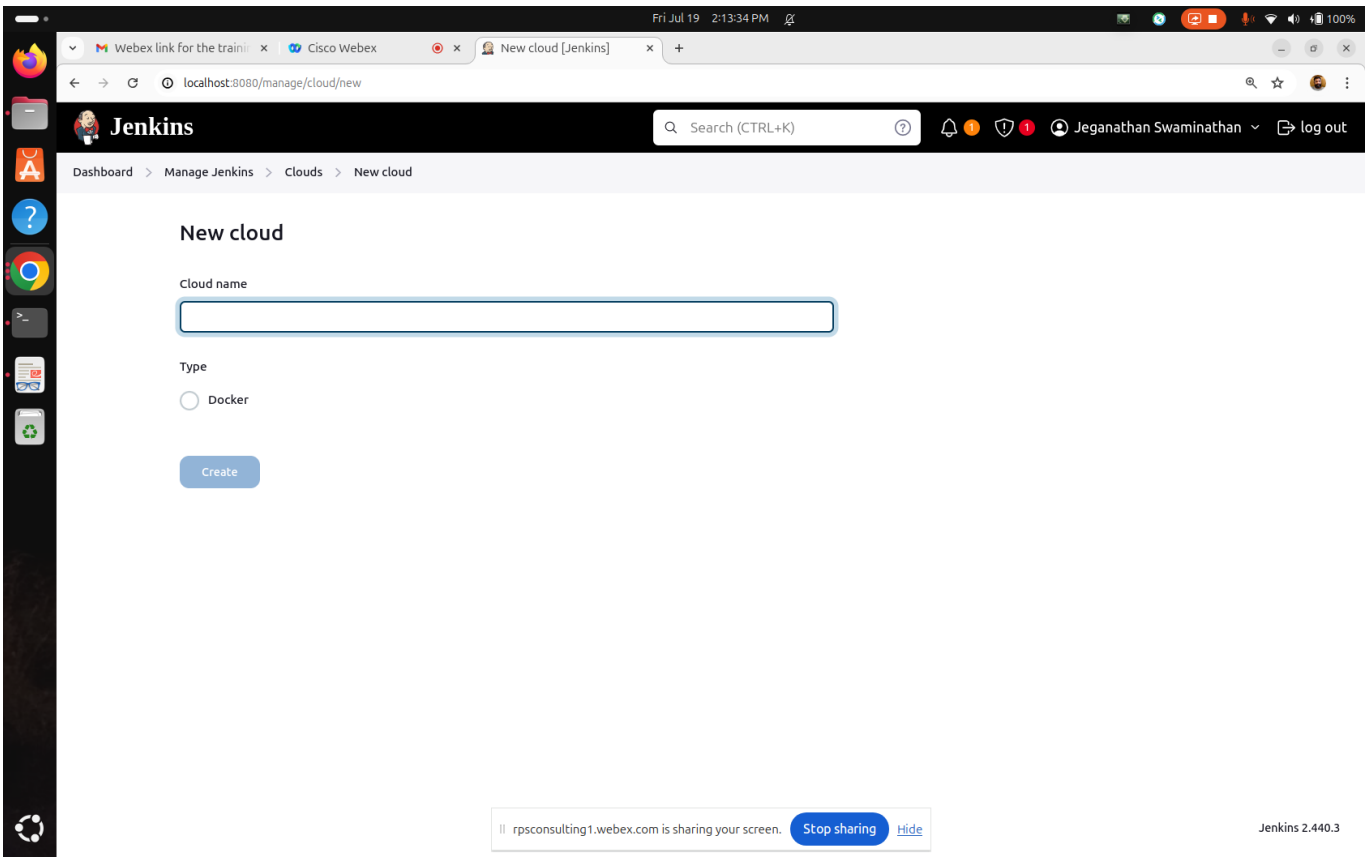
Manage Jenkins

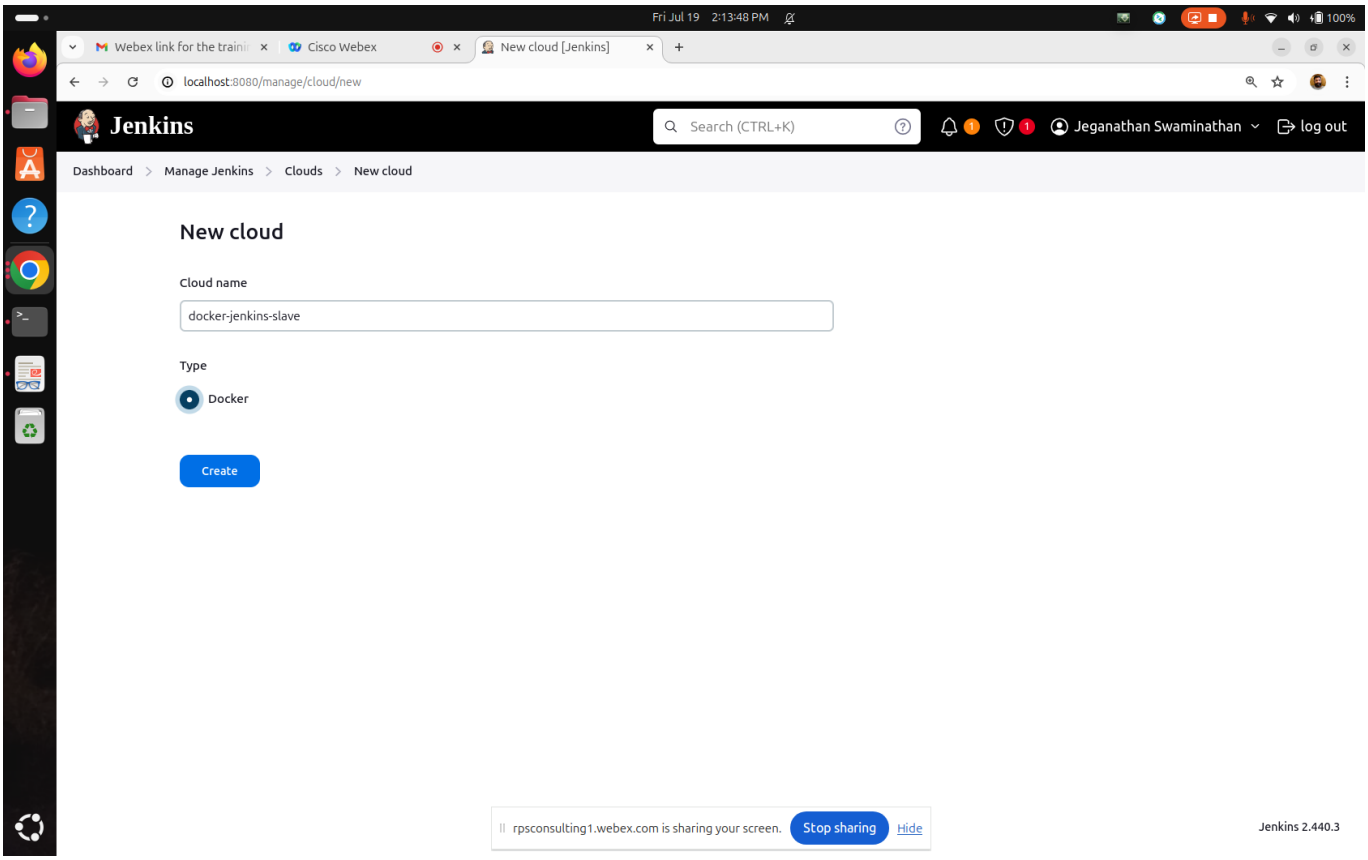


Click on "Clouds"

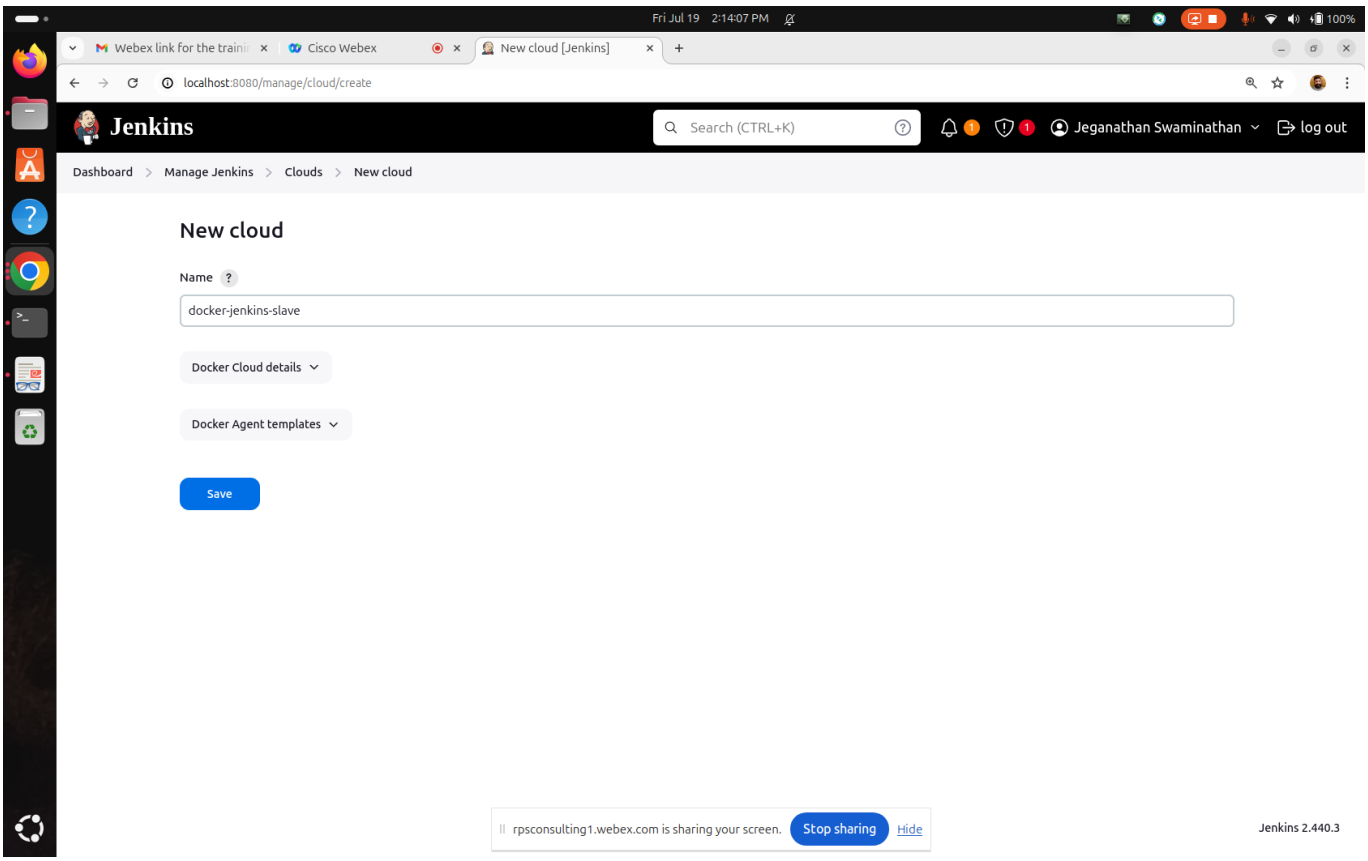

Fri Jul 19 2:13:20 PM
Webex link for the traini
Cisco Webex
Clouds [Jenkins]
localhost:8080/manage/cloud/
Jenkins
Search (CTRL+K)
Jeganathan Swaminathan
log out
Dashboard
Manage Jenkins
Clouds
Clouds
There are no clouds currently setup, create one or install a plugin for more cloud options.
New cloud
Install a plugin
Learn more about distributed builds
rpsconsulting1.webex.com is sharing your screen.
Stop sharing
Hide
Jenkins 2.440.3

New Cloud

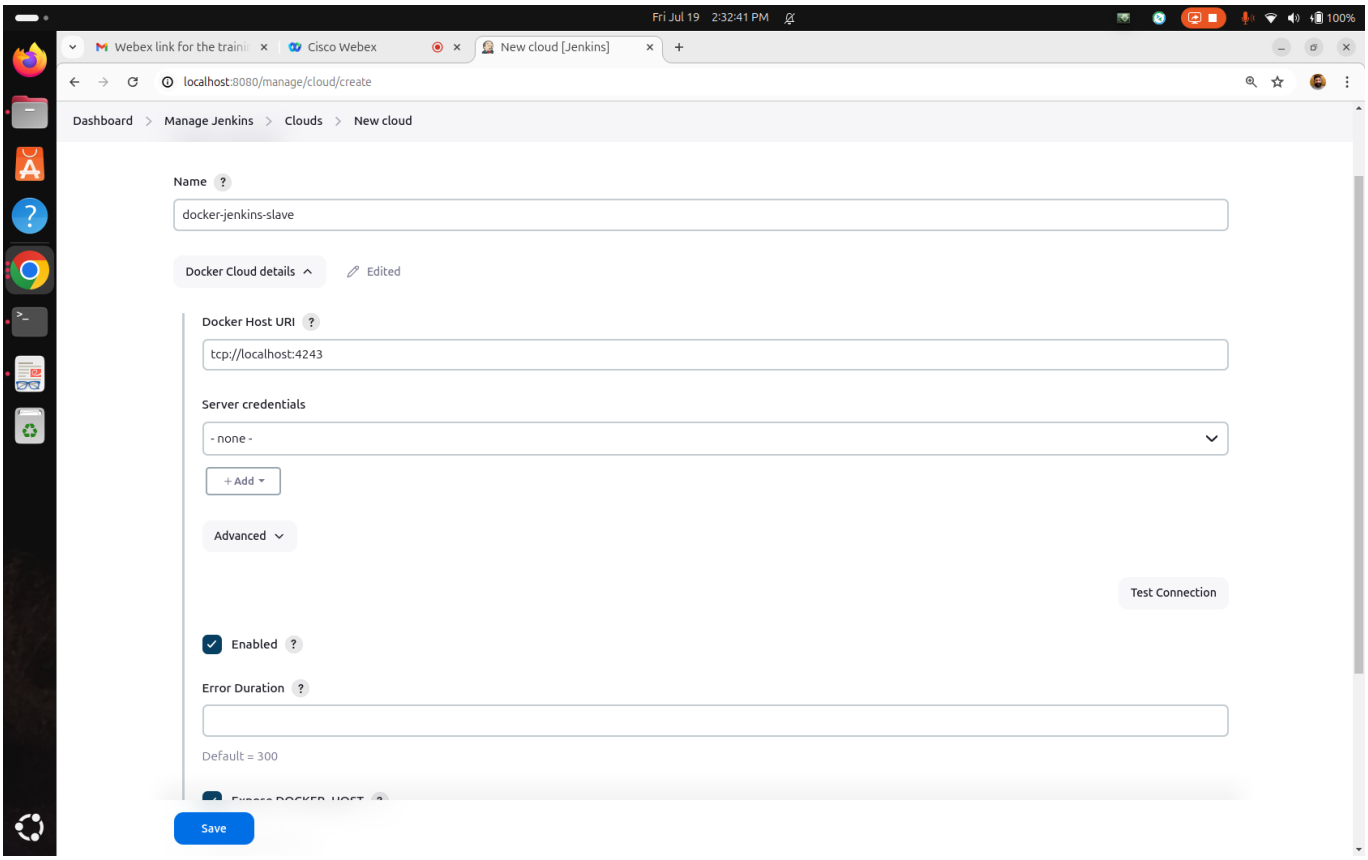

Fri Jul 19 2:13:34 PM
Webex link for the traini
Cisco Webex
New cloud [Jenkins]
localhost:8080/manage/cloud/new
Jenkins
Search (CTRL+K)
Jeganathan Swaminathan
log out
Dashboard
Manage Jenkins
Clouds
New cloud
New cloud
Cloud name
Type
Docker
Create
rpsconsulting1.webex.com is sharing your screen.
Stop sharing
Hide
Jenkins 2.440.3

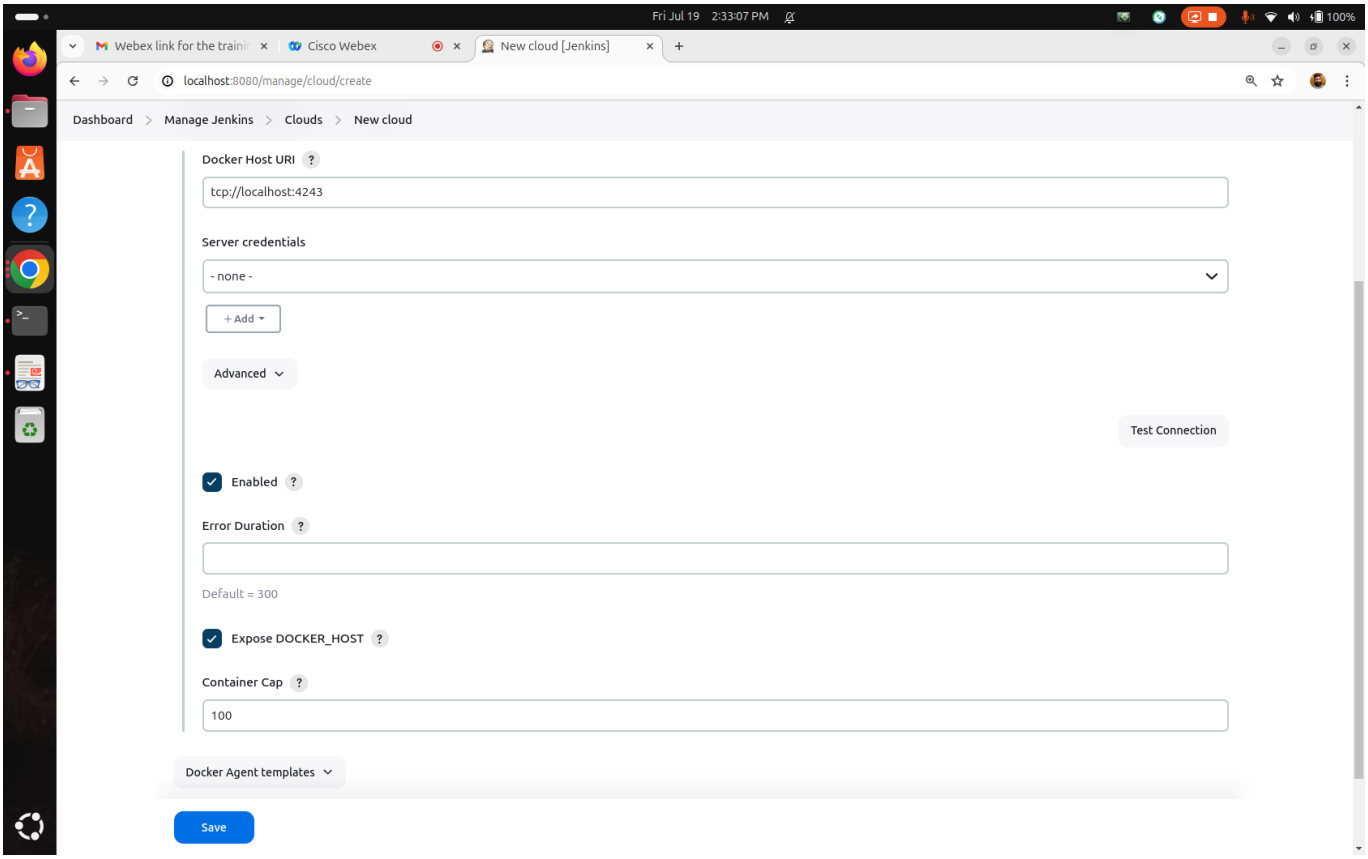


Click "Create"

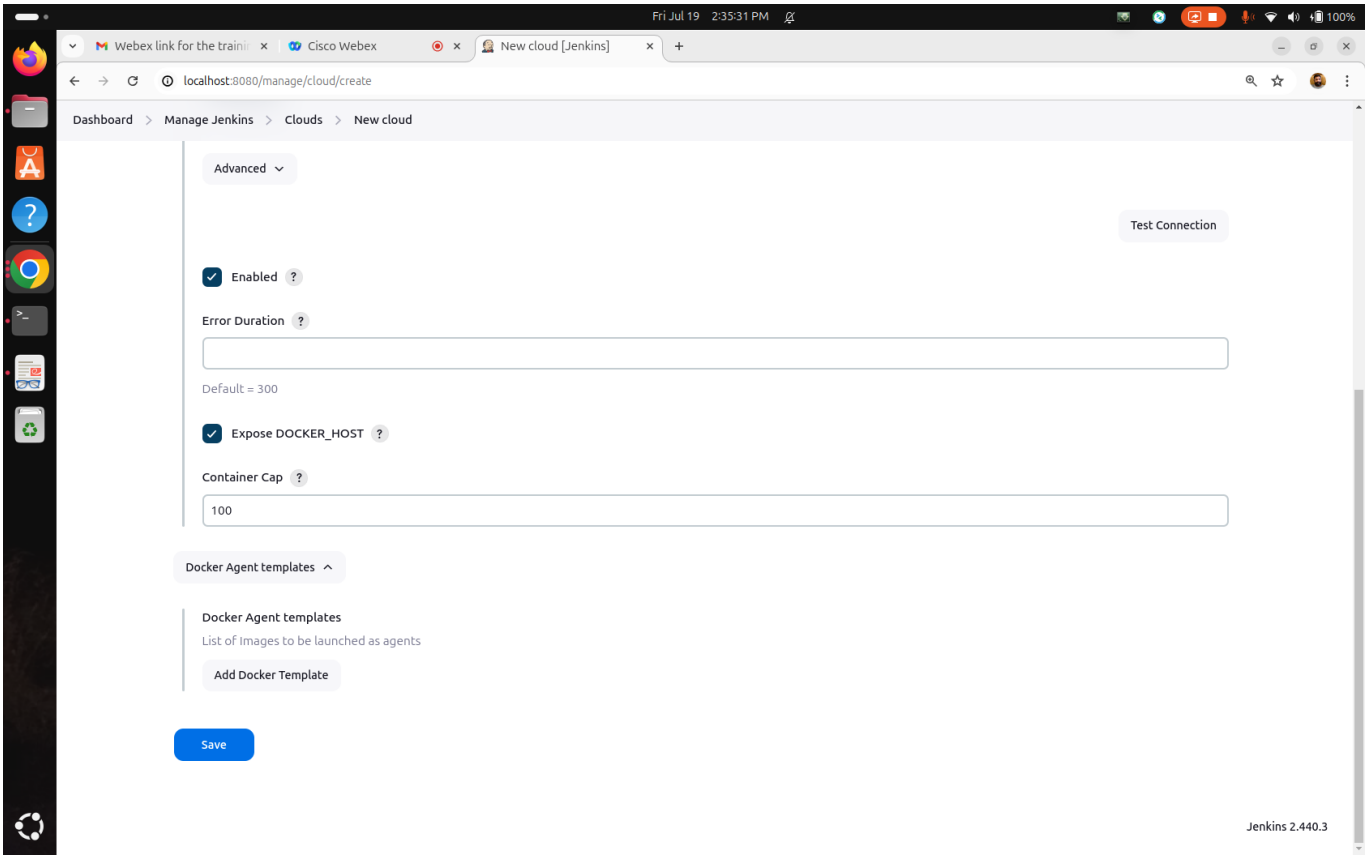


Expand "Docker Cloud details"

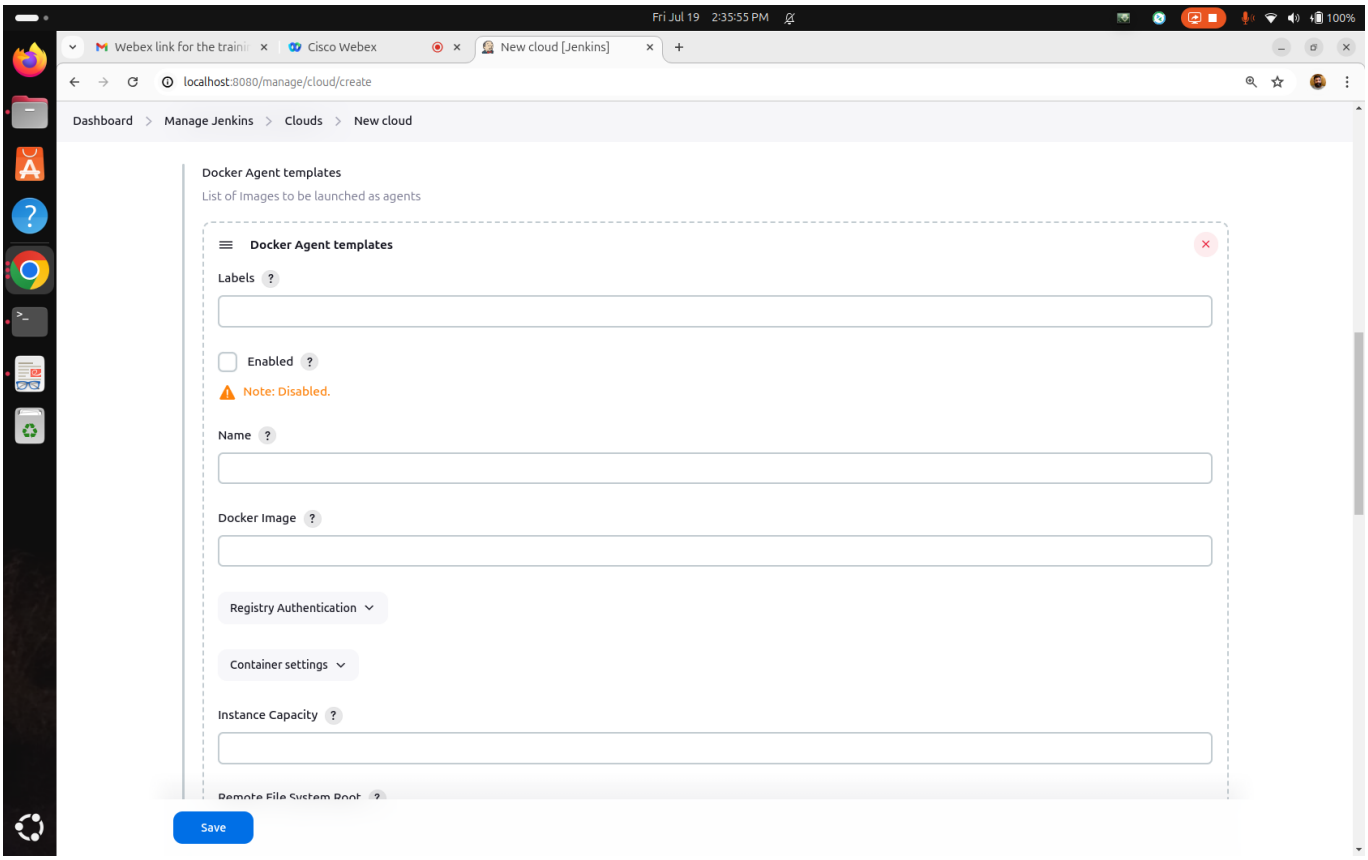

Fri Jul 19 2:32:41 PM
Webex link for the traini
Cisco Webex
New cloud [Jenkins]
localhost:8080/manage/cloud/create
Dashboard > Manage Jenkins > Clouds > New cloud
Name
docker-jenkins-slave
Docker Cloud details
Edited
Docker Host URI
tcp://localhost:4243
Server credentials
- none -
+ Add
Advanced
Test Connection
Enabled
Error Duration
Default = 300
Save

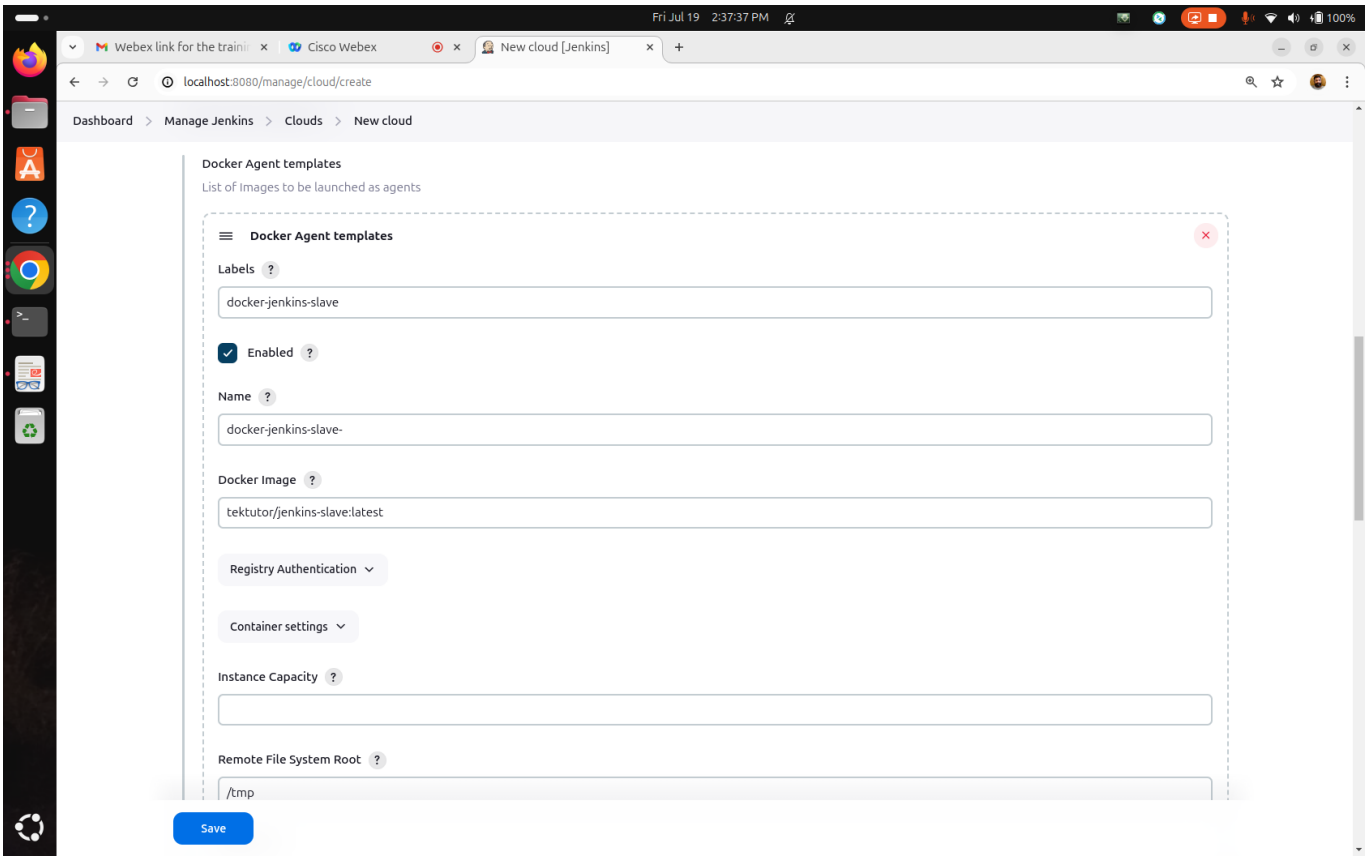

Fri Jul 19 2:33:07 PM
Webex link for the traini
Cisco Webex
New cloud [Jenkins]
localhost:8080/manage/cloud/create
Dashboard > Manage Jenkins > Clouds > New cloud
Docker Host URI
tcp://localhost:4243
Server credentials
- none -
+ Add
Advanced
Test Connection
Enabled
Error Duration
Default = 300
Expose DOCKER_HOST
Container Cap
100
Docker Agent templates
Save

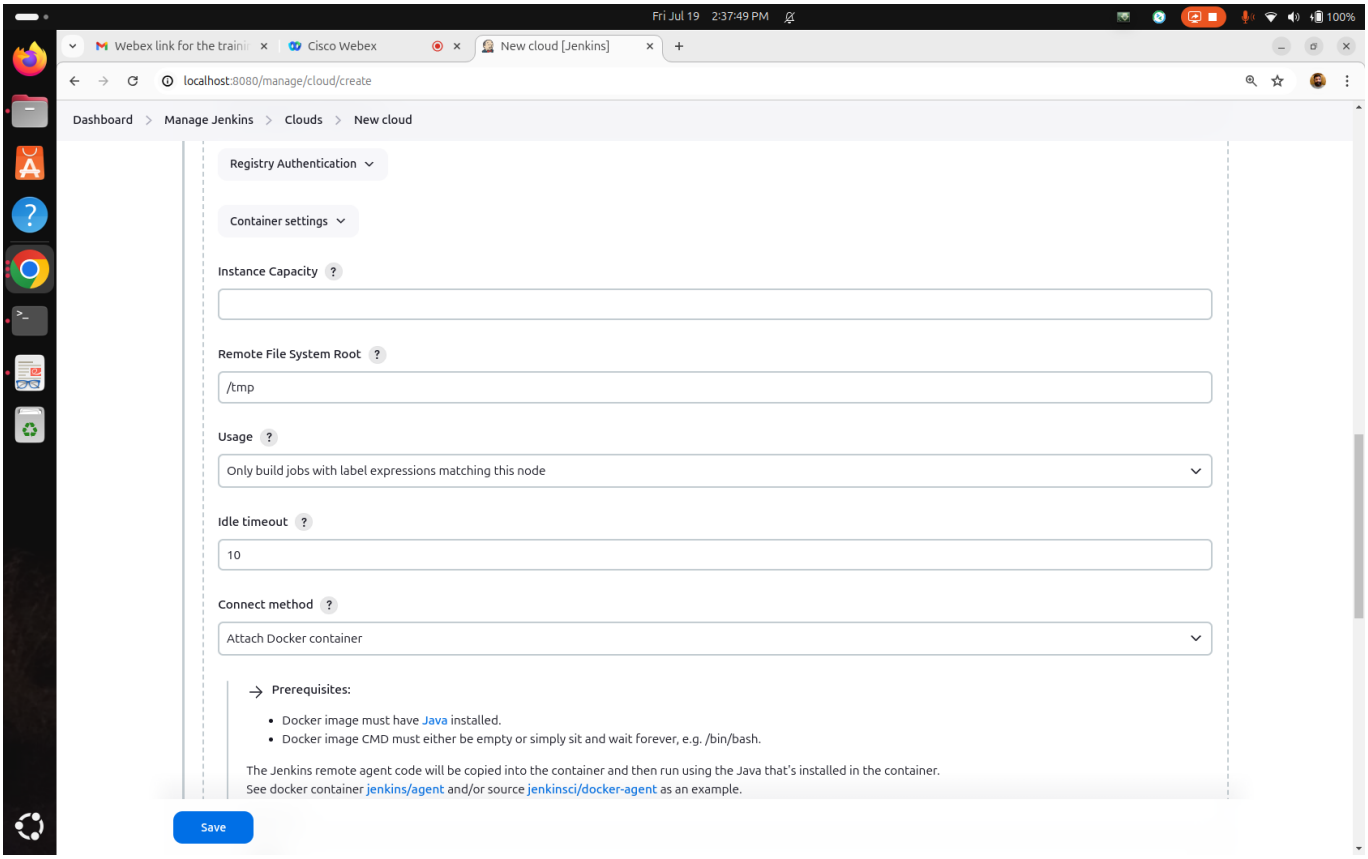
Scroll Down to see "Docker Agent Templates"

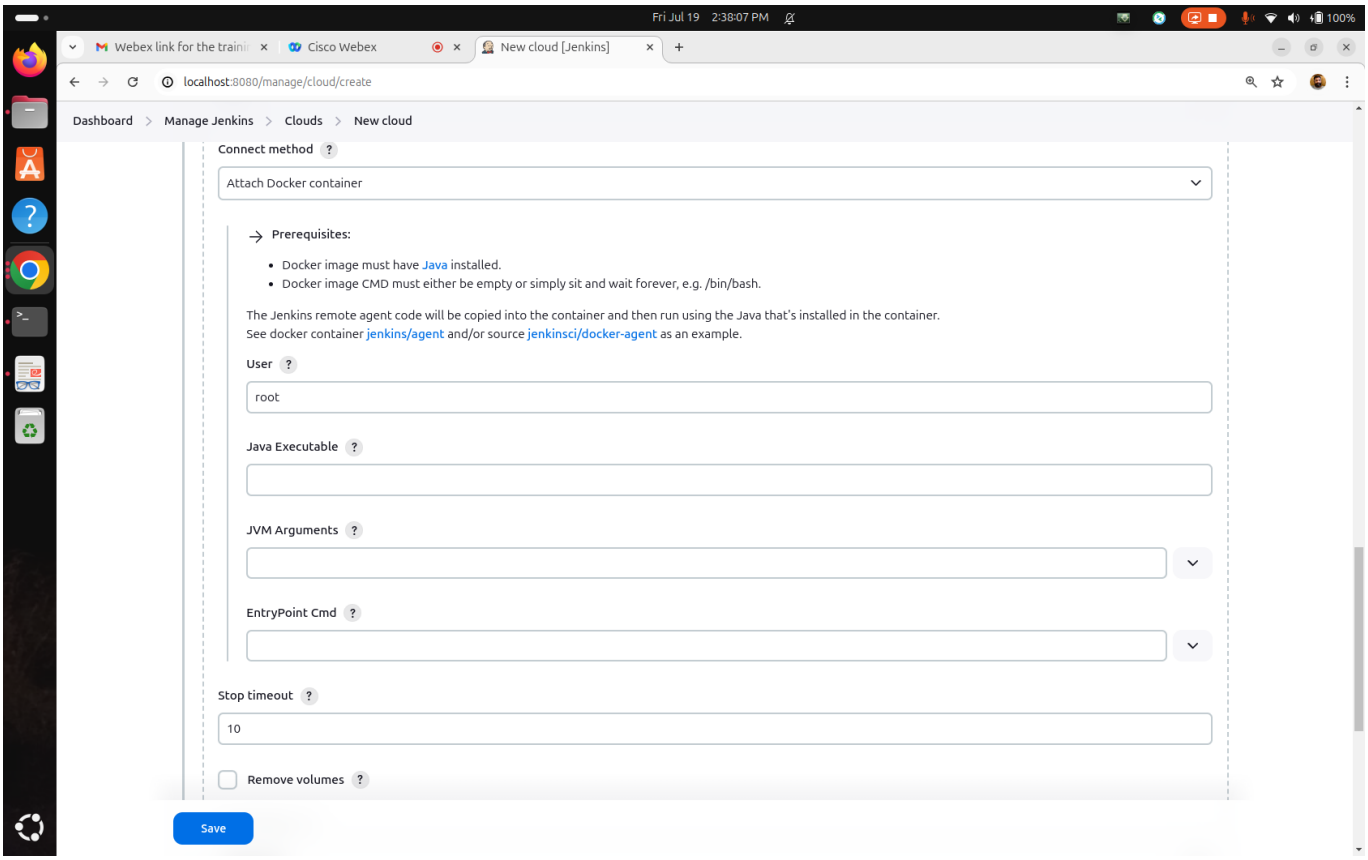


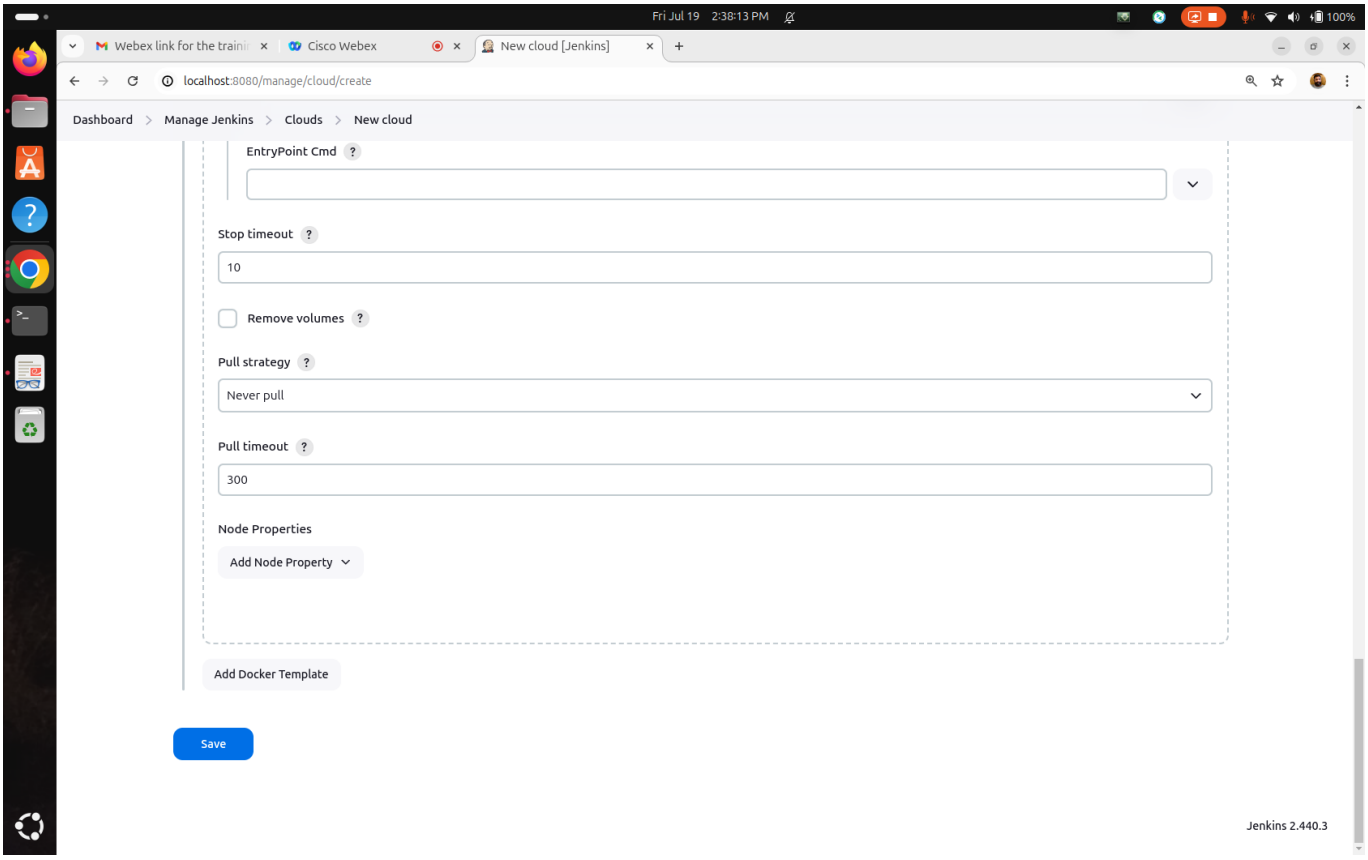
Add Docker Template



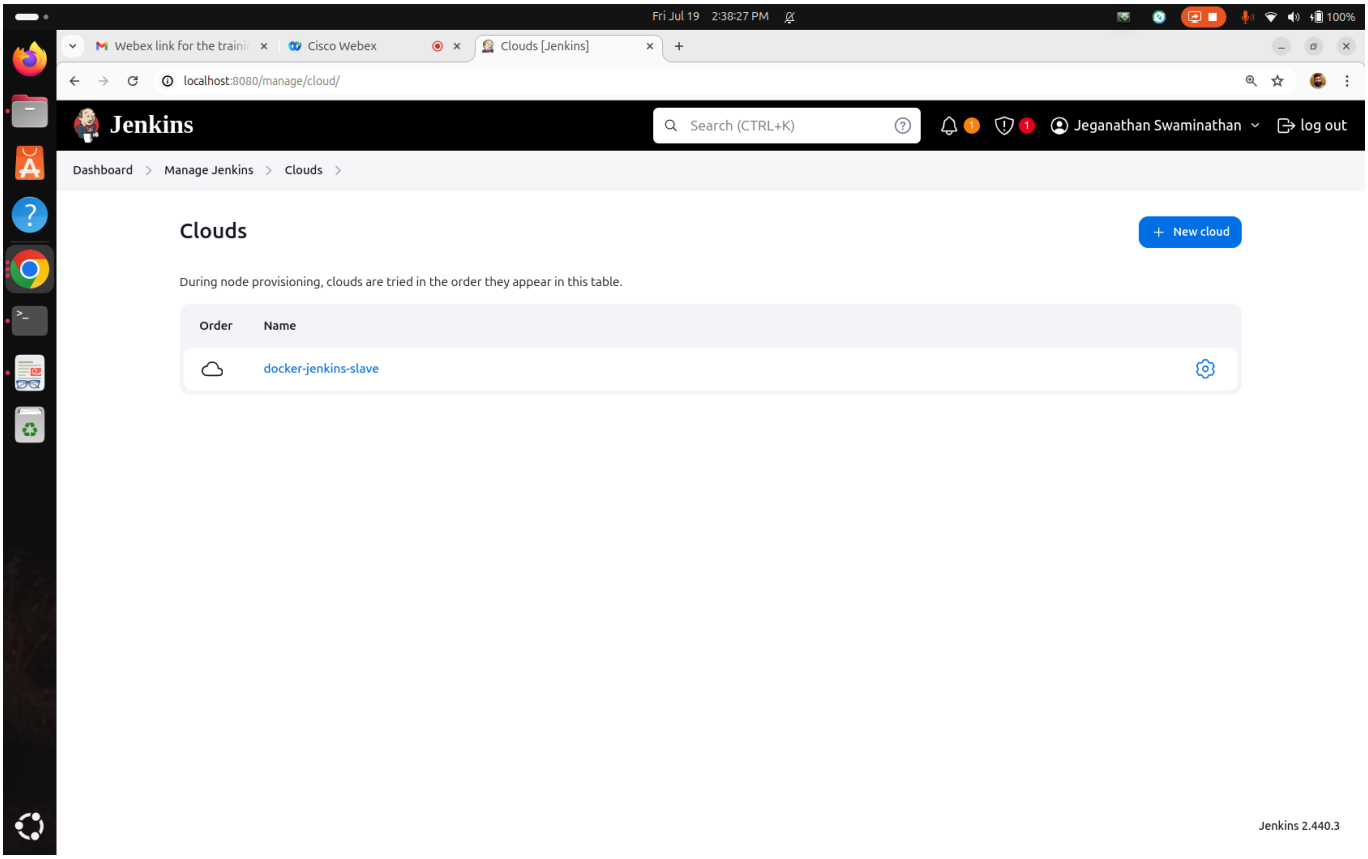

Fri Jul 19 2:37:37 PM
Webex link for the traini
Cisco Webex
New cloud [Jenkins]
localhost:8080/manage/cloud/create
Dashboard > Manage Jenkins > Clouds > New cloud
Docker Agent templates
List of Images to be launched as agents
Docker Agent templates
Labels
docker-jenkins-slave
Enabled
Name
docker-jenkins-slave-
Docker Image
tektutor/jenkins-slave:latest
Registry Authentication
Container settings
Instance Capacity
Remote File System Root
/tmp
Save


Fri Jul 19 2:37:49 PM
Webex link for the traini
Cisco Webex
New cloud [Jenkins]
localhost:8080/manage/cloud/create
Dashboard > Manage Jenkins > Clouds > New cloud
Registry Authentication
Container settings
Instance Capacity
Remote File System Root
/tmp
Usage
Only build jobs with label expressions matching this node
Idle timeout
10
Connect method
Attach Docker container
Prerequisites:
Docker image must have Java installed.
Docker image CMD must either be empty or simply sit and wait forever, e.g. /bin/bash.
The Jenkins remote agent code will be copied into the container and then run using the Java that's installed in the container.
See docker container jenkins/agent and/or source jenkinsci/docker-agent as an example.
Save

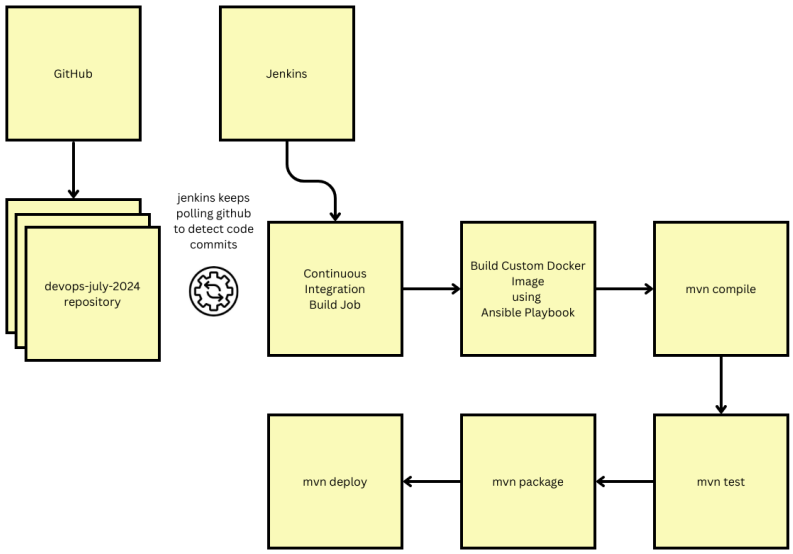

Fri Jul 19 2:38:07 PM
Webex link for the traini
Cisco Webex
New cloud [Jenkins]
localhost:8080/manage/cloud/create
Dashboard > Manage Jenkins > Clouds > New cloud
Connect method
Attach Docker container
Prerequisites:
Docker image must have Java installed.
Docker image CMD must either be empty or simply sit and wait forever, e.g. /bin/bash.
The Jenkins remote agent code will be copied into the container and then run using the Java that's installed in the container.
See docker container jenkins/agent and/or source jenkinsci/docker-agent as an example.
User
root
Java Executable
JVM Arguments
EntryPoint Cmd
Stop timeout
10
Remove volumes
Save


Fri Jul 19 2:38:13 PM
Webex link for the traini
Cisco Webex
New cloud [Jenkins]
localhost:8080/manage/cloud/create
Dashboard > Manage Jenkins > Clouds > New cloud
EntryPoint Cmd
Stop timeout
10
Remove volumes
Pull strategy
Never pull
Pull timeout
300
Node Properties
Add Node Property
Add Docker Template
Save
Jenkins 2.440.3

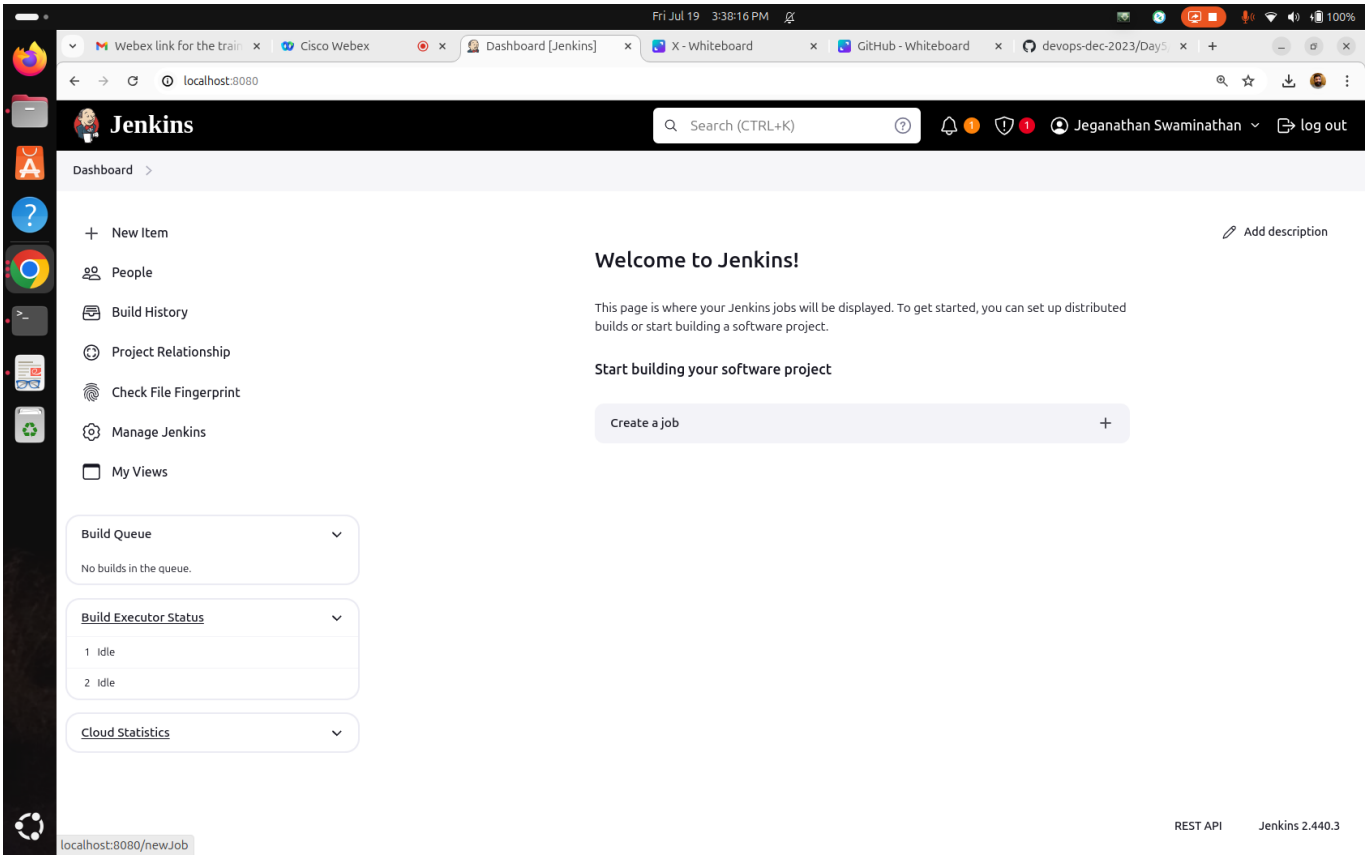
Click "Save" button



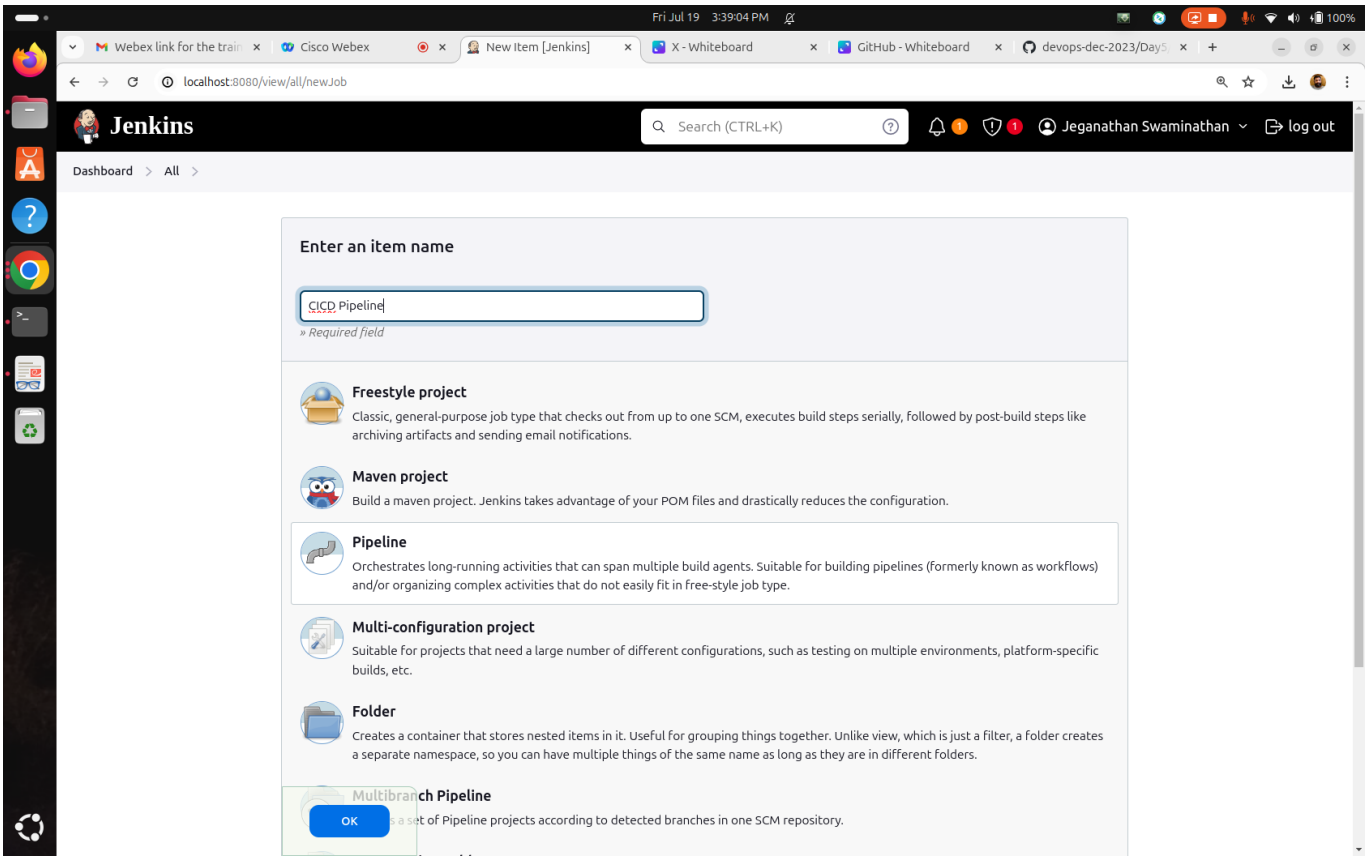
Lab - Creating a CICD Pipeline



Let's create a declarative pipeline using Jenkinsfile

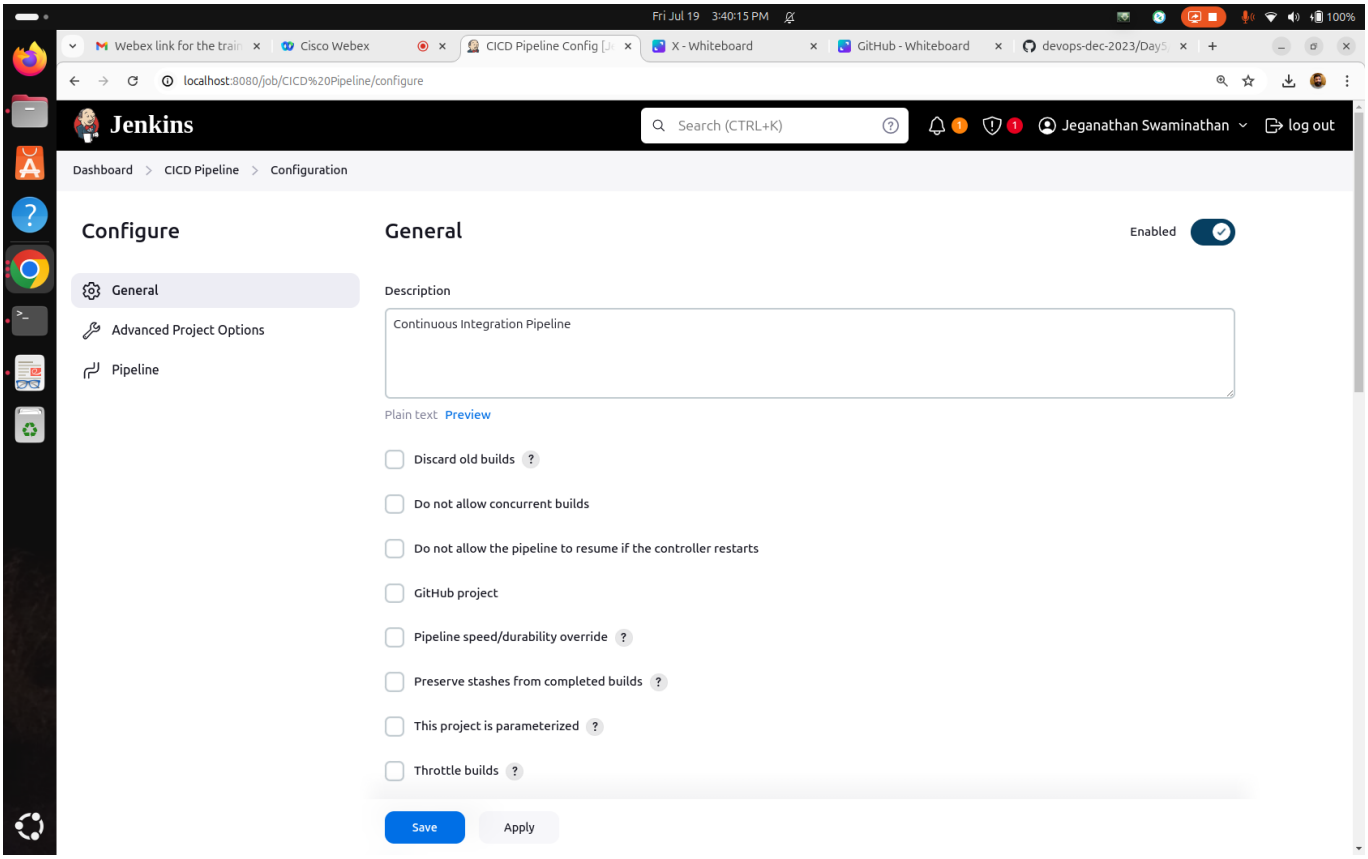


Click "New Item", let's create a Pipeline project and give it a name "CICD Pipeline"

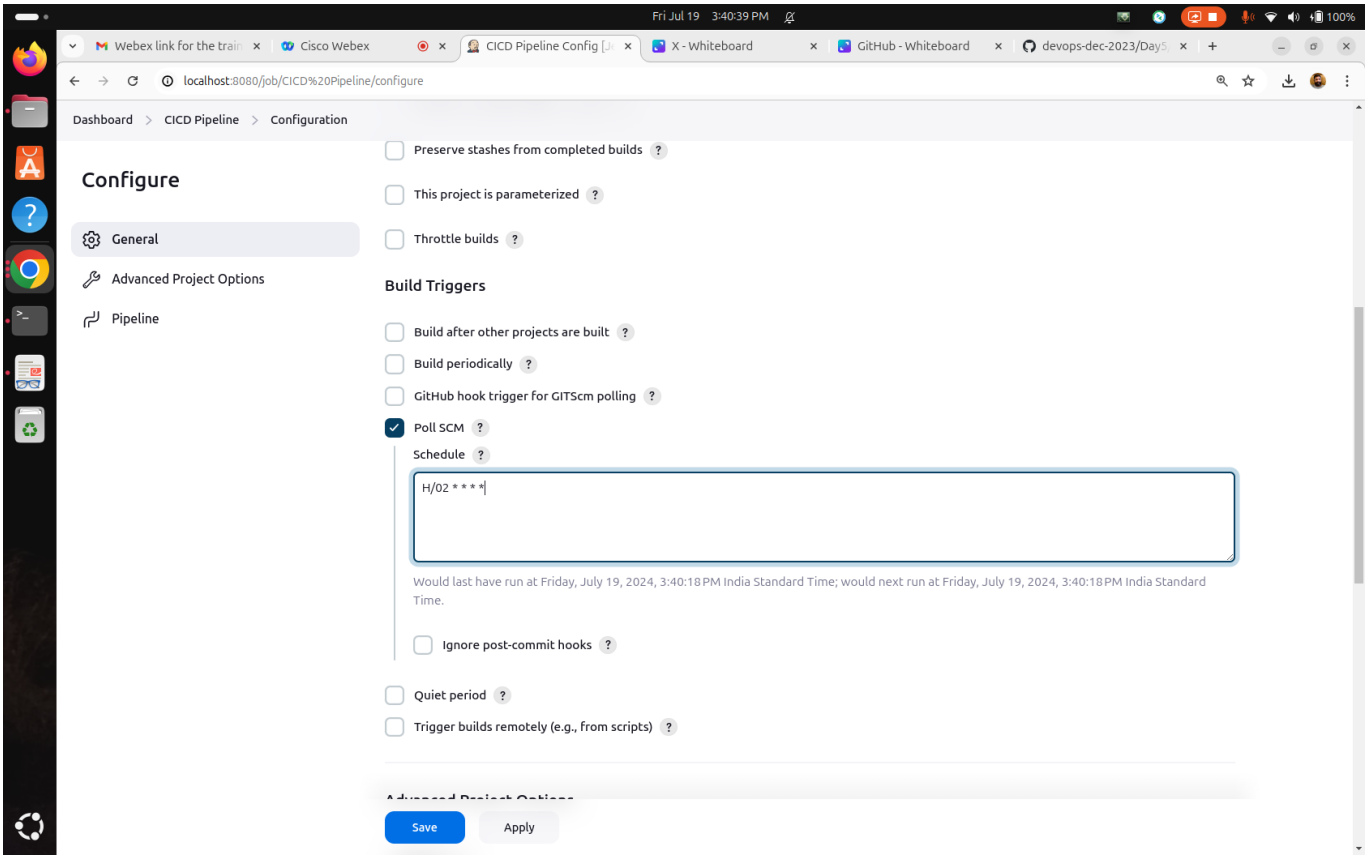


Click "Ok" button

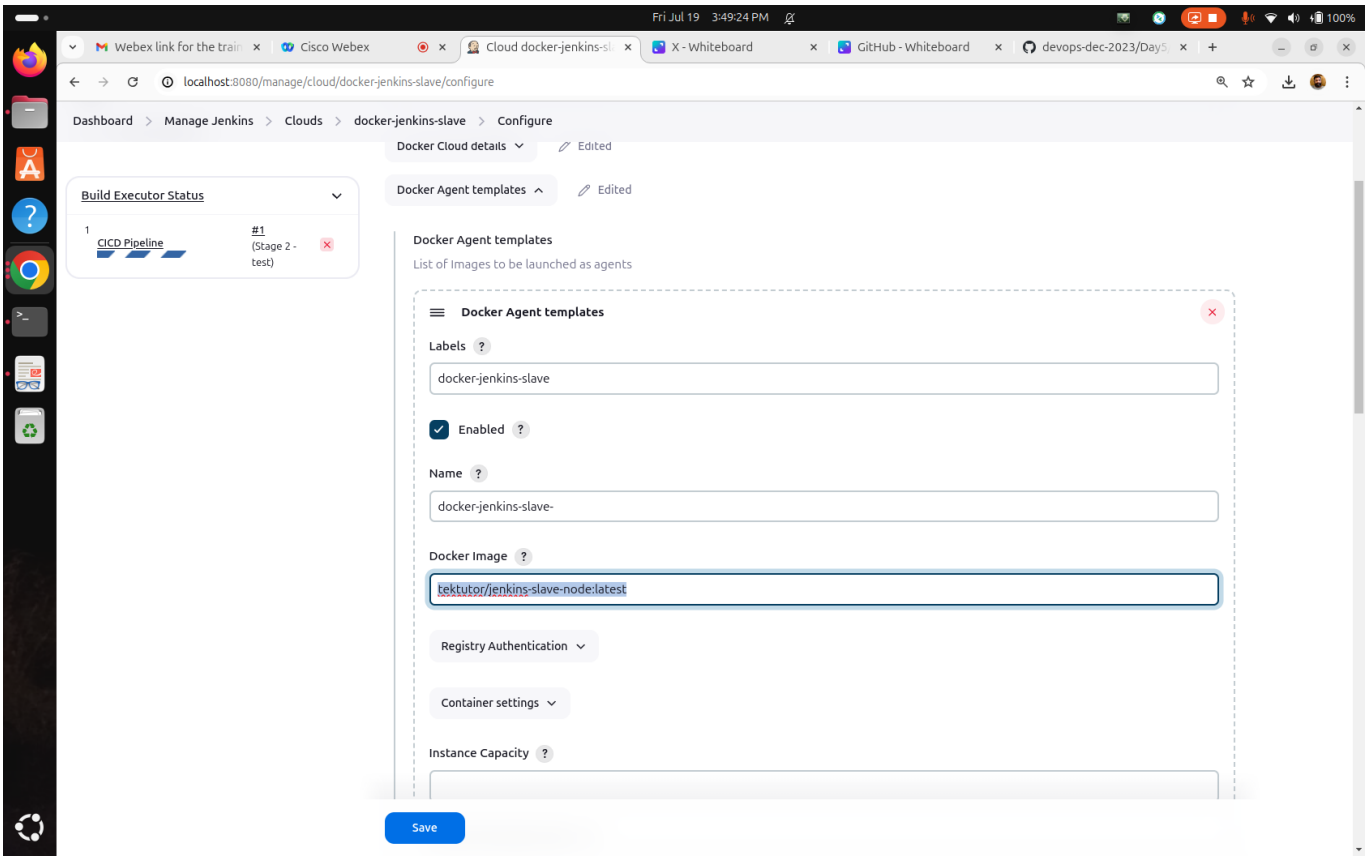
General



Build Triggers

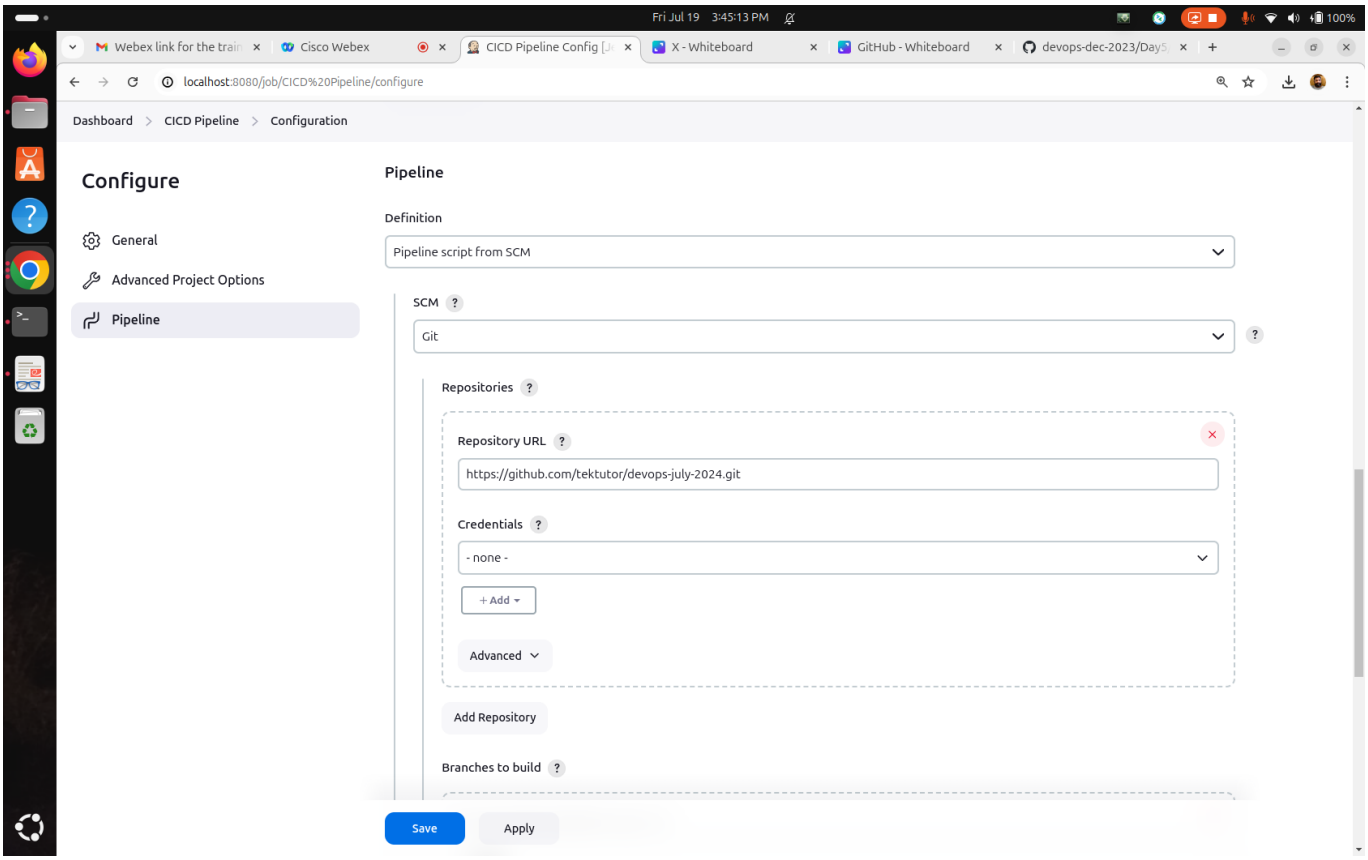


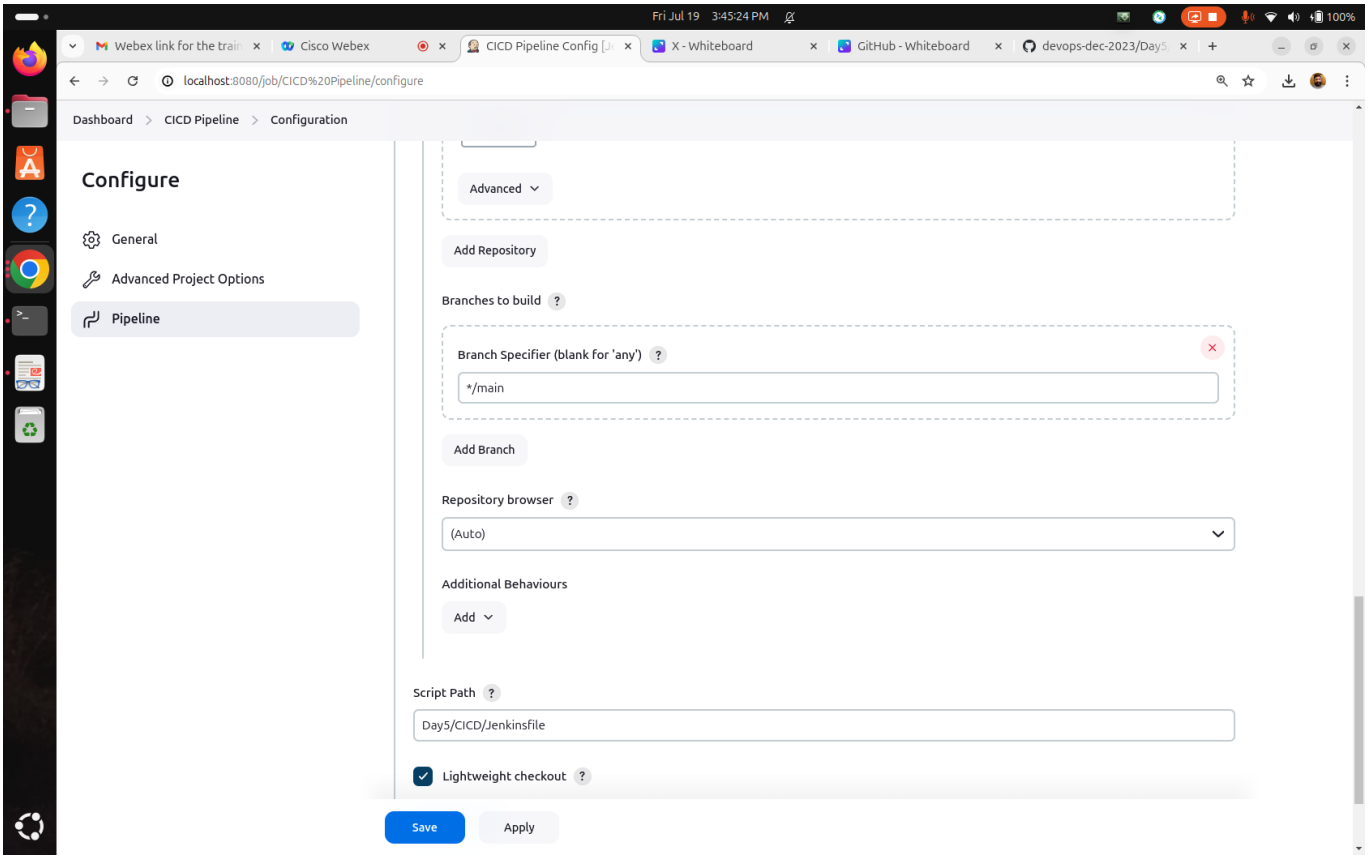
Make sure you update the dockerimage as shown below Under Manage Jenkins --> Clouds --> docker-jenkins-slave --> Docker Agent Templates --> Docker Image



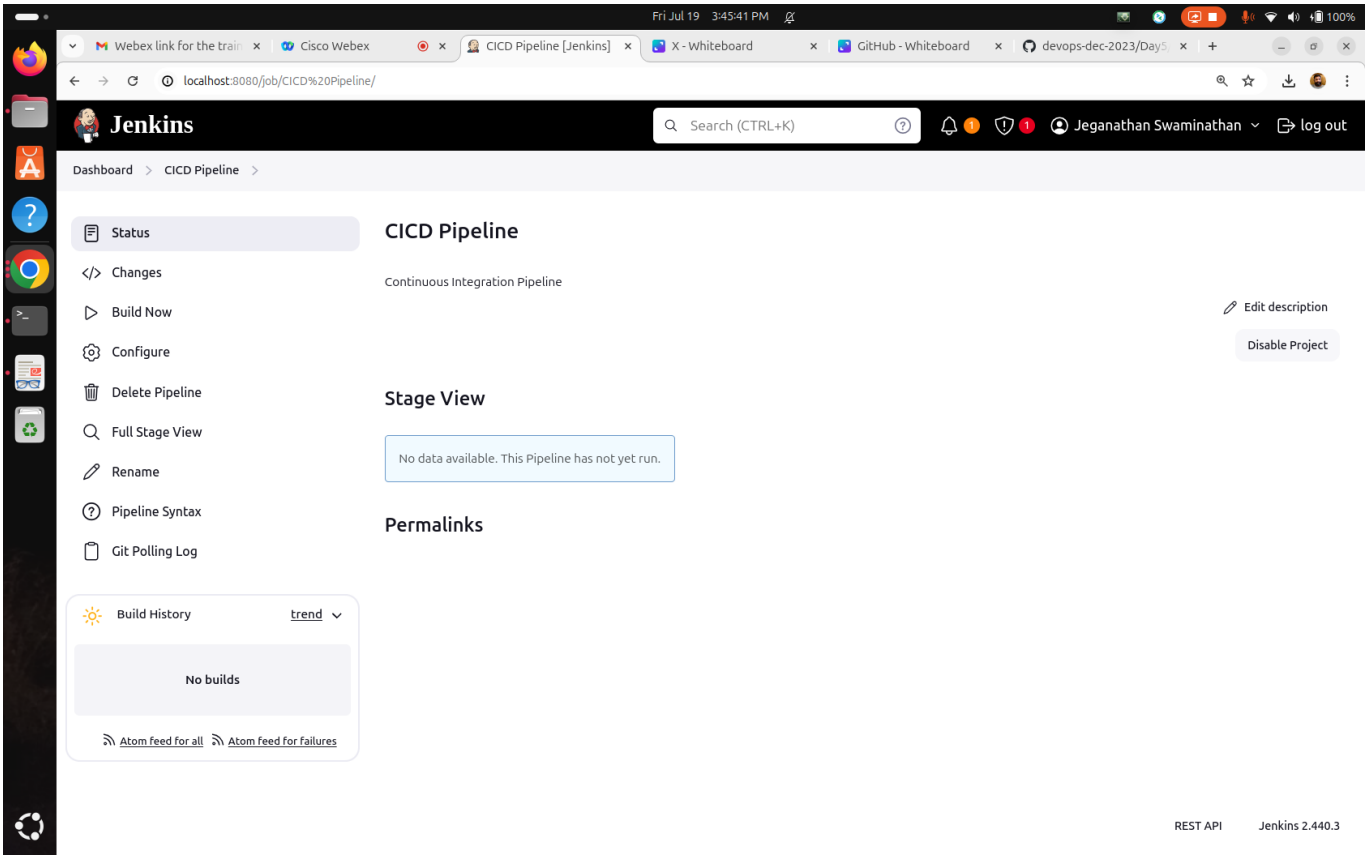
Pipeline

```
1. Pipeline --> Definition --> Select "Pipeline Script from SCM"
2. Under SCM --> Select Git
3. Repository URL - https://github.com/tektutor/devops-july-2024.git
4. Under Branch Specifier replace "*/master" with "*/main"
5. Under Script Path, change Jenkinsfile to Day5/CICD/Jenkinsfile
```

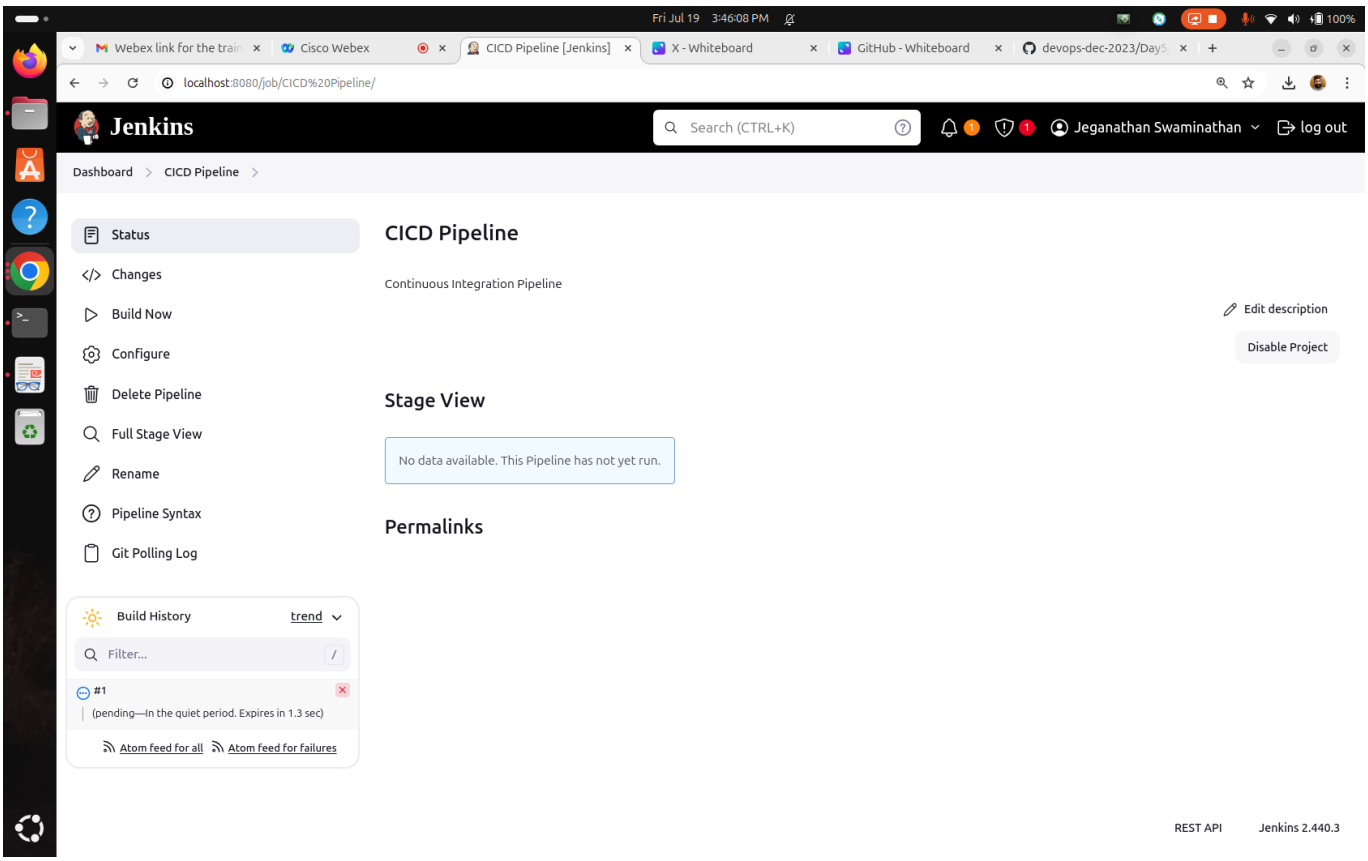

Fri Jul 19 3:45:13 PM
Webex link for the train
Cisco Webex
CICD Pipeline Config [J
X - Whiteboard
GitHub - Whiteboard
devops-dec-2023/Day5
localhost:8080/job/CICD%20Pipeline/configure
Dashboard > CICD Pipeline > Configuration
Configure
General
Advanced Project Options
Pipeline
Pipeline
Definition
Pipeline script from SCM
SCM
Git
Repositories
Repository URL
https://github.com/tektutor/devops-july-2024.git
Credentials
- none -
+ Add
Advanced
Add Repository
Branches to build
Save
Apply

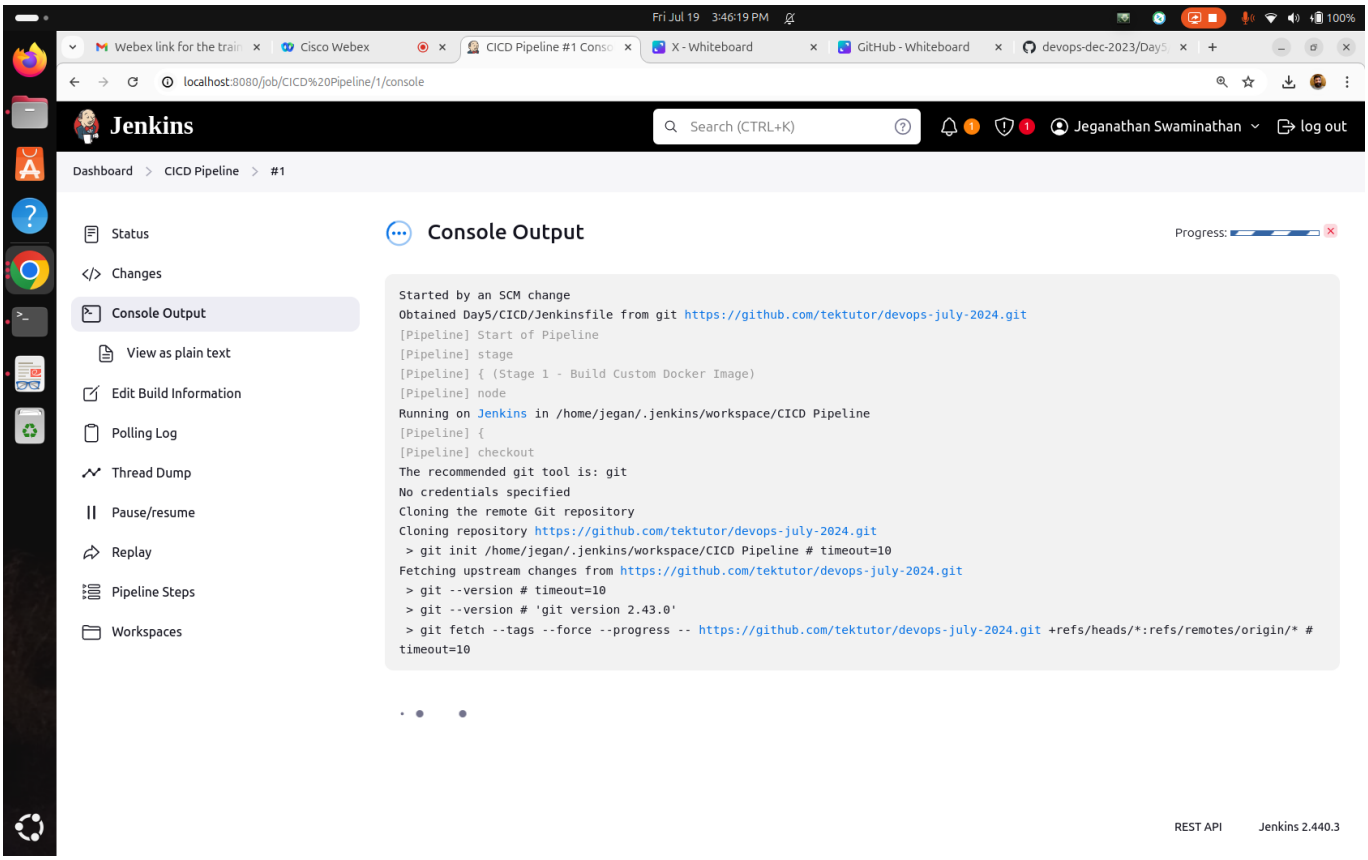

Fri Jul 19 3:45:24 PM
Webex link for the train
Cisco Webex
CICD Pipeline Config [J
X - Whiteboard
GitHub - Whiteboard
devops-dec-2023/Day5
localhost:8080/job/CICD%20Pipeline/configure
Dashboard > CICD Pipeline > Configuration
Configure
General
Advanced Project Options
Pipeline
Advanced
Add Repository
Branches to build
Branch Specifier (blank for 'any')
*/main
Add Branch
Repository browser
(Auto)
Additional Behaviours
Add
Script Path
Day5/CICD/Jenkinsfile
Lightweight checkout
Save
Apply

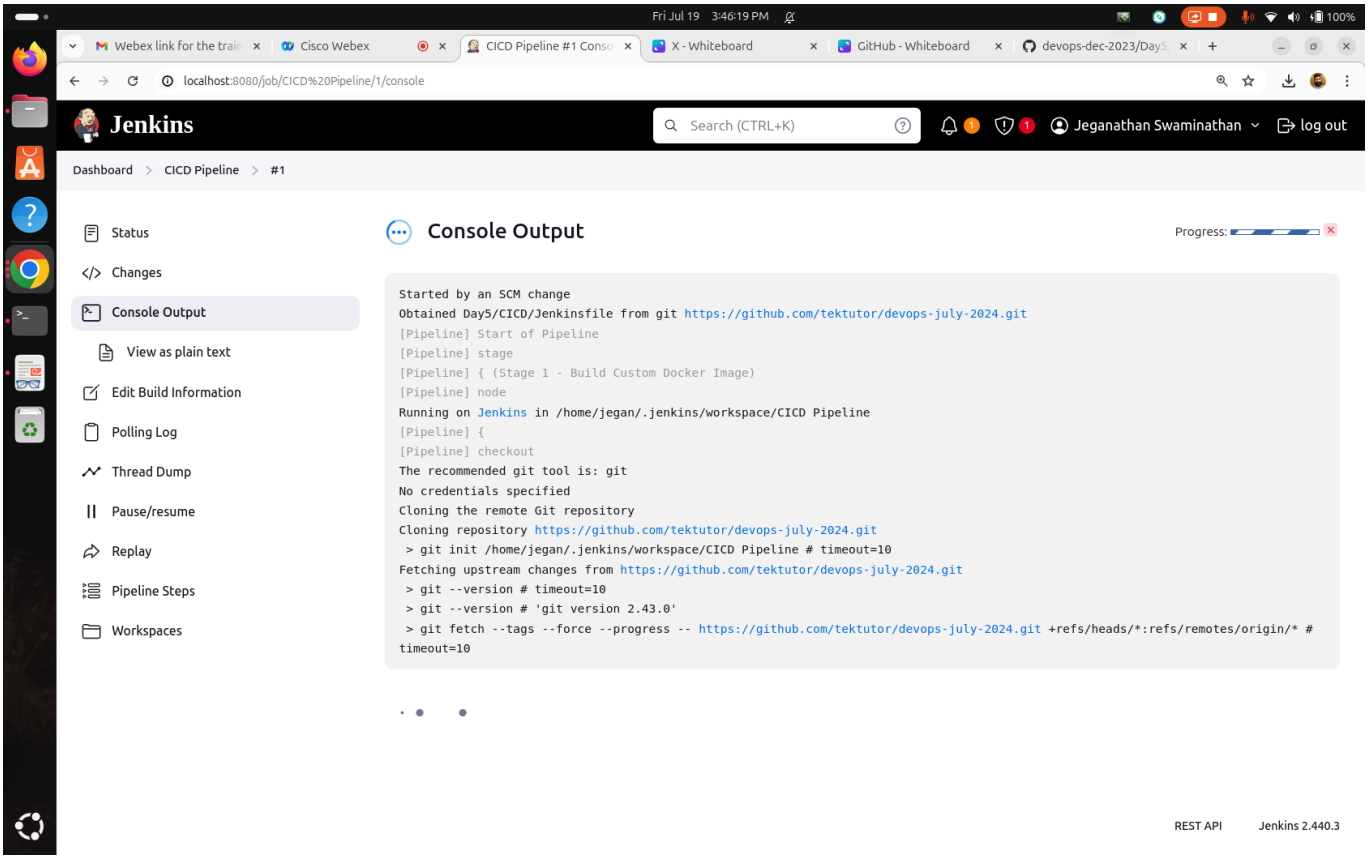
Click "Save" button



Expected output




Fri Jul 19 3:46:19 PM
Webex link for the train
Cisco Webex
CICD Pipeline #1 Cons
X - Whiteboard
GitHub - Whiteboard
devops-dec-2023/Day5
localhost:8080/job/CICD%20Pipeline/1/console
Jenkins
Search (CTRL+K)
Jeganathan Swaminathan
log out
Dashboard > CICD Pipeline > #1
Status
Changes
Console Output
View as plain text
Edit Build Information
Polling Log
Thread Dump
Pause/resume
Replay
Pipeline Steps
Workspaces
Console Output
Progress:
Started by an SCM change
Obtained Day5/CICD/Jenkinsfile from git https://github.com/tektutor/devops-july-2024.git
[Pipeline] Start of Pipeline
[Pipeline] stage
[Pipeline] { (Stage 1 - Build Custom Docker Image)
[Pipeline] node
Running on Jenkins in /home/jegan/.jenkins/workspace/CICD Pipeline
[Pipeline] {
[Pipeline] checkout
The recommended git tool is: git
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/tektutor/devops-july-2024.git
> git init /home/jegan/.jenkins/workspace/CICD Pipeline # timeout=10
Fetching upstream changes from https://github.com/tektutor/devops-july-2024.git
> git --version # timeout=10
> git --version # 'git version 2.43.0'
> git fetch --tags --force --progress -- https://github.com/tektutor/devops-july-2024.git +refs/heads/*:refs/remotes/origin/* # timeout=10
REST API
Jenkins 2.440.3


Fri Jul 19 3:46:19 PM
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Cisco Webex
CICD Pipeline #1 Cons
X - Whiteboard
GitHub - Whiteboard
devops-dec-2023/Day5
localhost:8080/job/CICD%20Pipeline/1/console
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[Pipeline] {
[Pipeline] checkout
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No credentials specified
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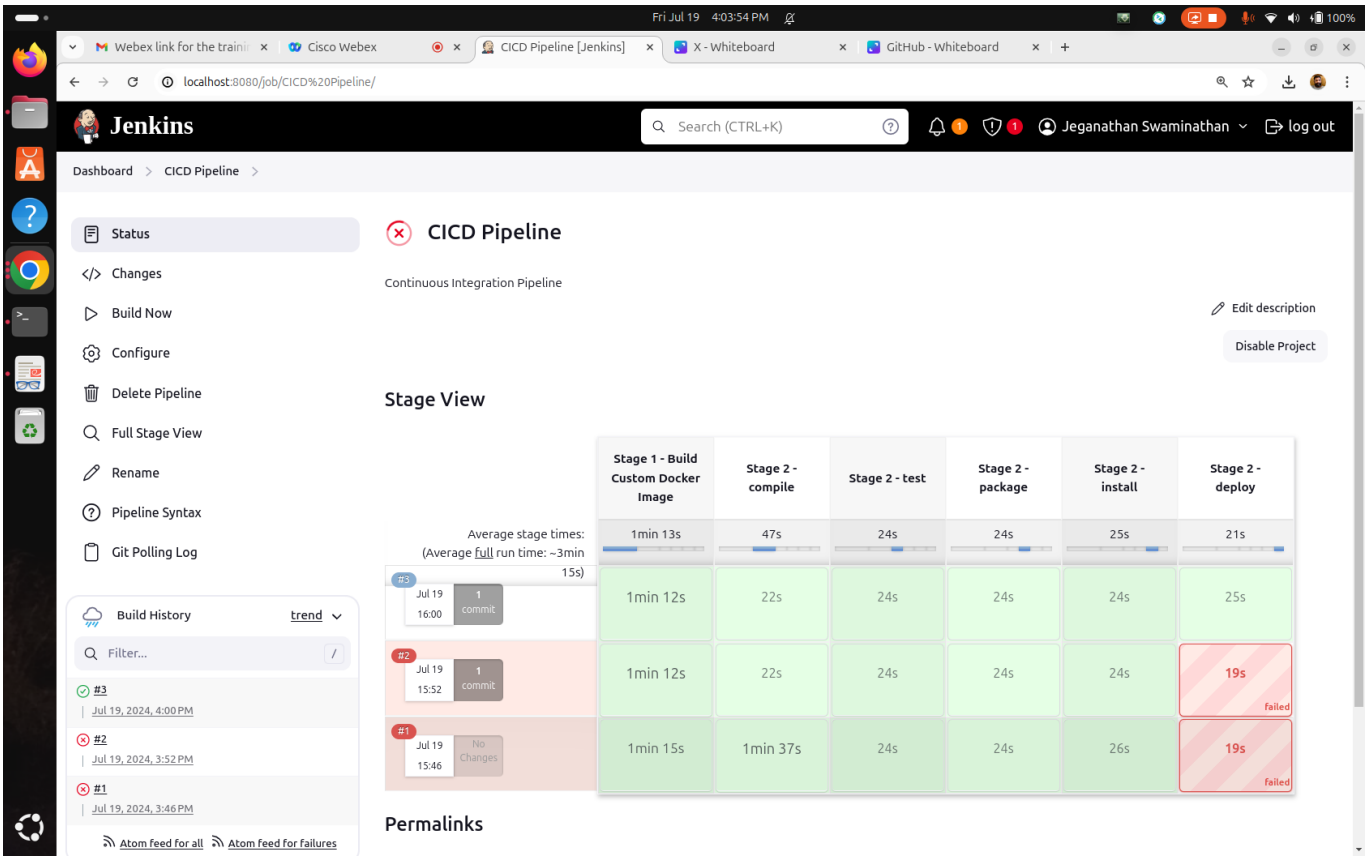
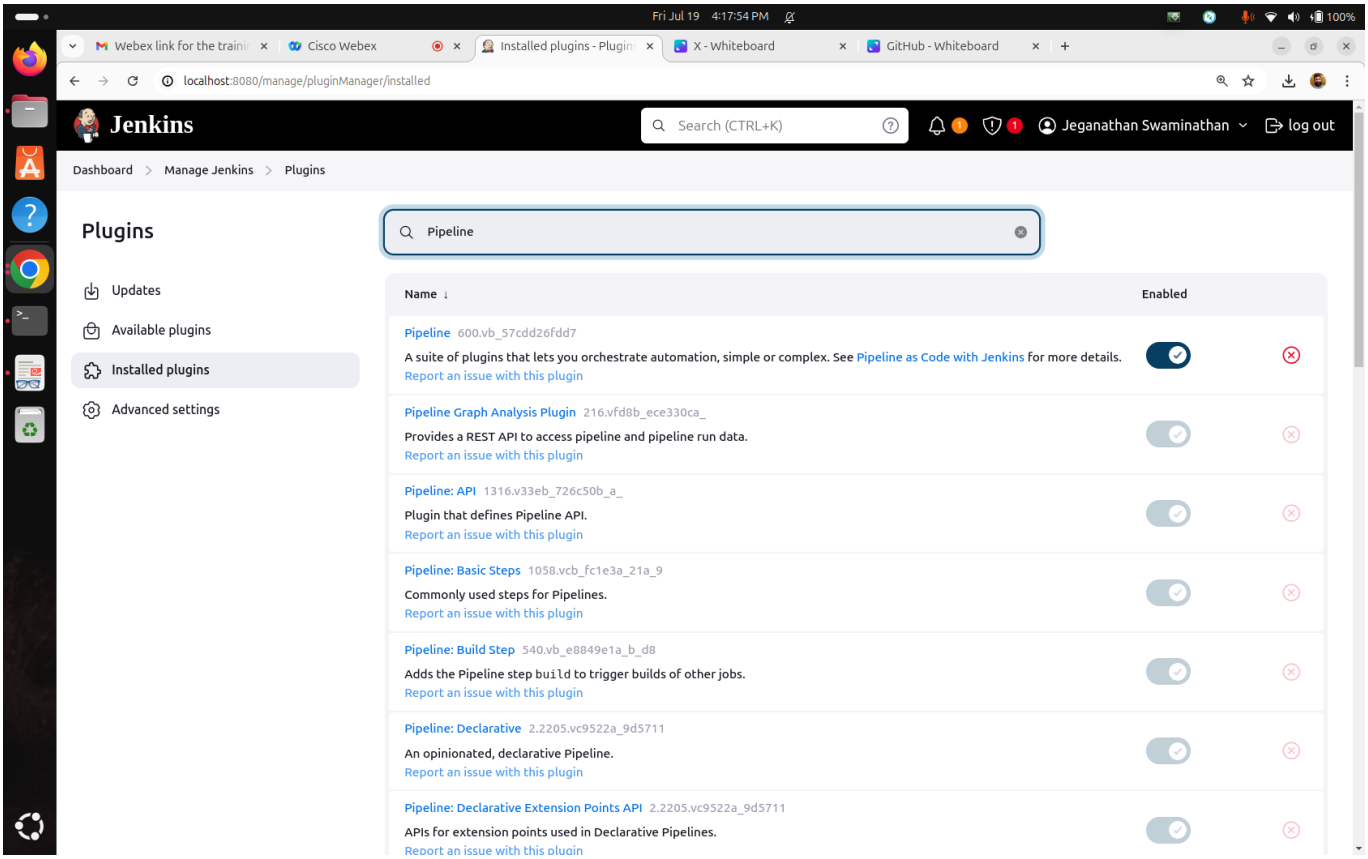
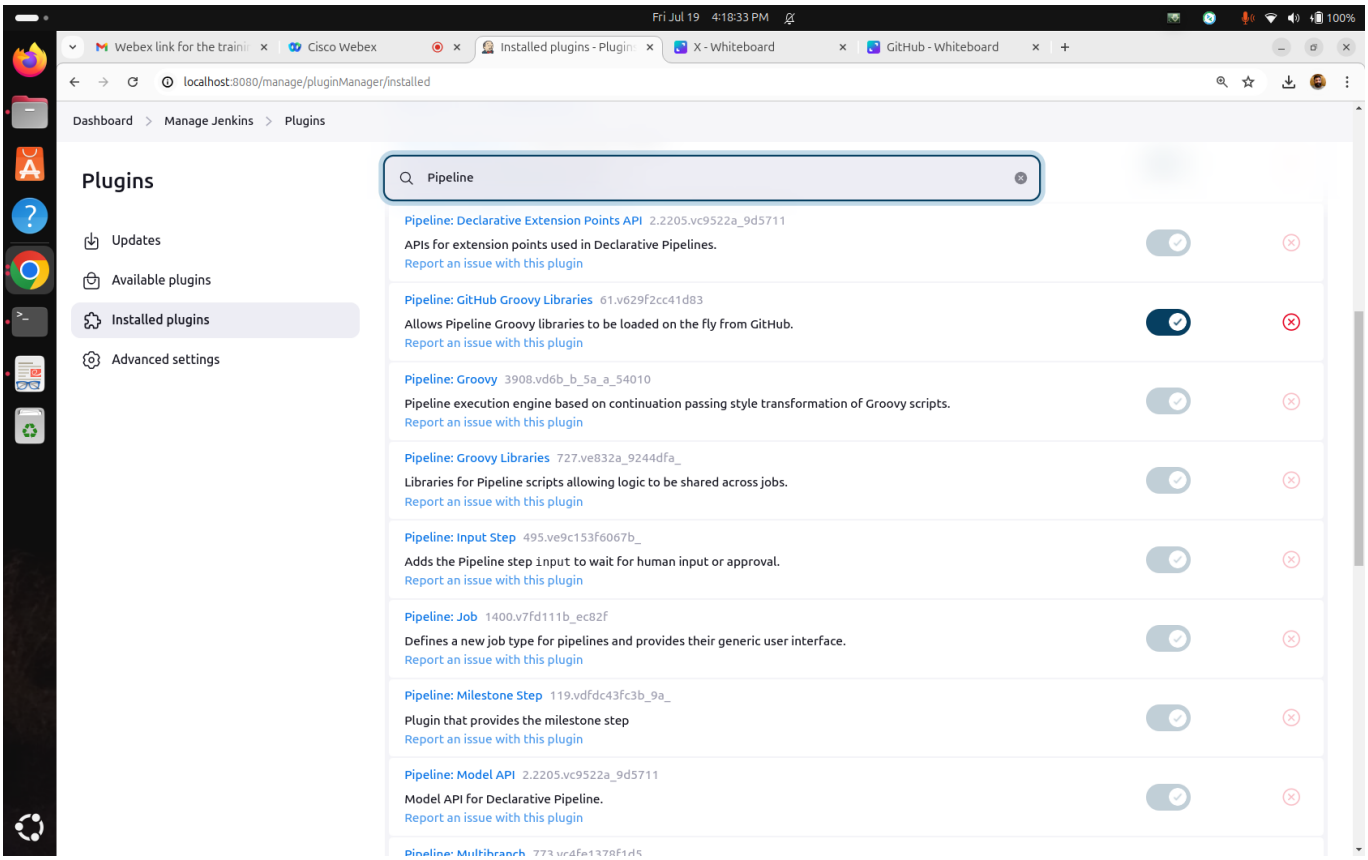
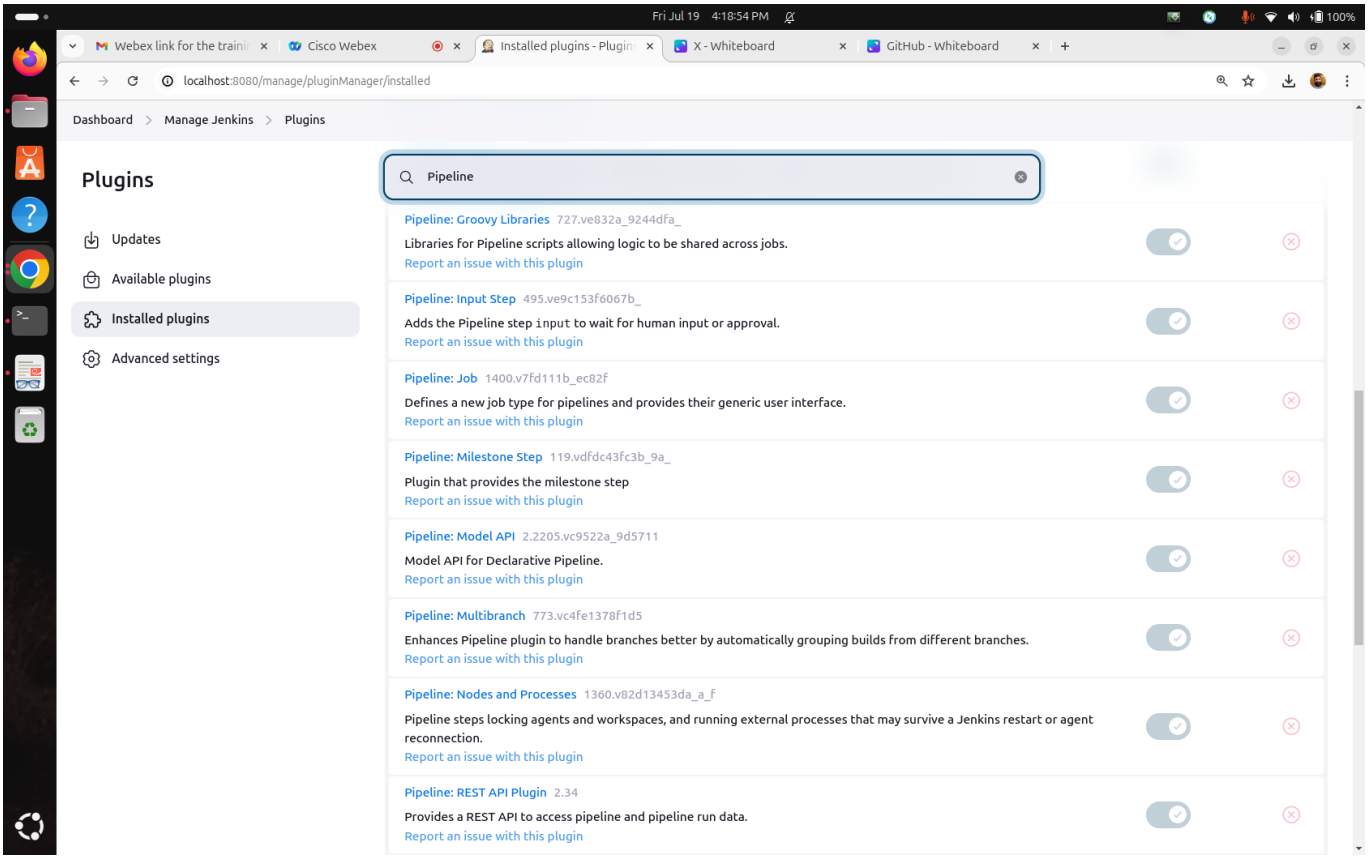
Cloning repository https://github.com/tektutor/devops-july-2024.git
> git init /home/jegan/.jenkins/workspace/CICD Pipeline # timeout=10
Fetching upstream changes from https://github.com/tektutor/devops-july-2024.git
> git --version # timeout=10
> git --version # 'git version 2.43.0'
> git fetch --tags --force --progress -- https://github.com/tektutor/devops-july-2024.git +refs/heads/*:refs/remotes/origin/* # timeout=10
REST API
Jenkins 2.440.3



Troubleshooting - In case you are not seeing the Pipeline view




Fri Jul 19 4:18:33 PM
Webex link for the traini
Cisco Webex
Installed plugins - Plugin
X - Whiteboard
GitHub - Whiteboard
localhost:8080/manage/pluginManager/installed
Dashboard > Manage Jenkins > Plugins
Plugins
Updates
Available plugins
Installed plugins
Advanced settings
Pipeline
Pipeline: Declarative Extension Points API 2.2205.vc9522a_9d5711
APIs for extension points used in Declarative Pipelines.
Report an issue with this plugin
Pipeline: GitHub Groovy Libraries 61.v629f2cc41d83
Allows Pipeline Groovy libraries to be loaded on the fly from GitHub.
Report an issue with this plugin
Pipeline: Groovy 3908.vd6b_b_5a_a_54010
Pipeline execution engine based on continuation passing style transformation of Groovy scripts.
Report an issue with this plugin
Pipeline: Groovy Libraries 727.ve832a_9244dfa_
Libraries for Pipeline scripts allowing logic to be shared across jobs.
Report an issue with this plugin
Pipeline: Input Step 495.ve9c153f6067b_
Adds the Pipeline step input to wait for human input or approval.
Report an issue with this plugin
Pipeline: Job 1400.v7fd111b_ec82f
Defines a new job type for pipelines and provides their generic user interface.
Report an issue with this plugin
Pipeline: Milestone Step 119.vdfdc43fc3b_9a_
Plugin that provides the milestone step
Report an issue with this plugin
Pipeline: Model API 2.2205.vc9522a_9d5711
Model API for Declarative Pipeline.
Report an issue with this plugin


Fri Jul 19 4:18:54 PM
Webex link for the traini
Cisco Webex
Installed plugins - Plugin
X - Whiteboard
GitHub - Whiteboard
localhost:8080/manage/pluginManager/installed
Dashboard > Manage Jenkins > Plugins
Plugins
Updates
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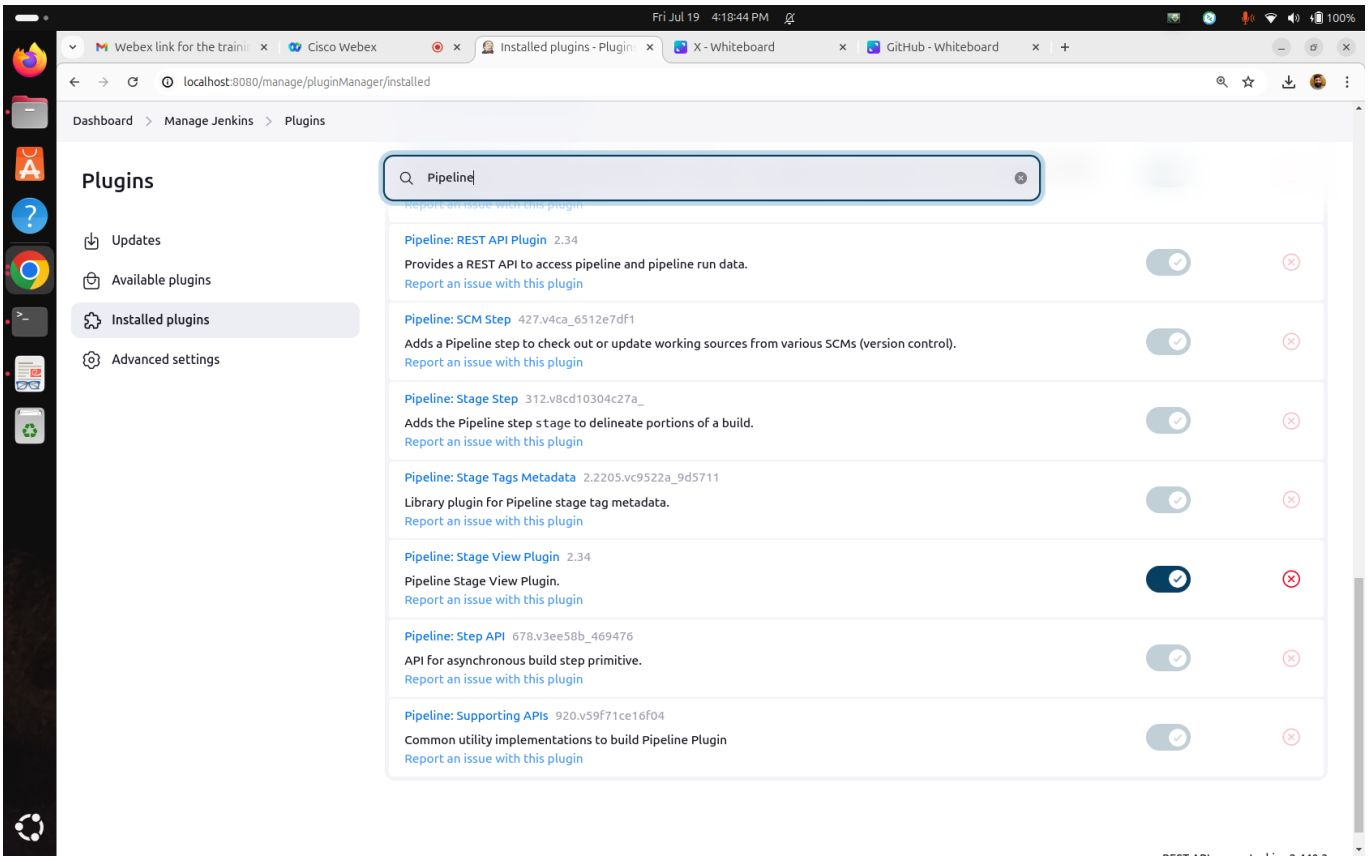
Plugin that provides the milestone step
Report an issue with this plugin
Pipeline: Model API 2.2205.vc9522a_9d5711
Model API for Declarative Pipeline.
Report an issue with this plugin
Pipeline: Multibranch 773.vc4fe1378f1d5
Enhances Pipeline plugin to handle branches better by automatically grouping builds from different branches.
Report an issue with this plugin
Pipeline: Nodes and Processes 1360.v82d13453da_a_f
Pipeline steps locking agents and workspaces, and running external processes that may survive a Jenkins restart or agent reconnection.
Report an issue with this plugin
Pipeline: REST API Plugin 2.34
Provides a REST API to access pipeline and pipeline run data.
Report an issue with this plugin



Kindly complete the post test from RPS Ubuntu Lab machine

```
https://rpsconsulting116.examly.io/contest/public?U2FsdGVkX19j/JRJUst8ogiG8/LMMqIY1qx1nC+NKovq0VhVBnxEnUaMEeLXCwBHnLe5f7DwvpA6gcNOYLQ0Hw==
```

Kindly share your training feedback here

```
https://survey.zohopublic.com/zs/0K0FUi
```