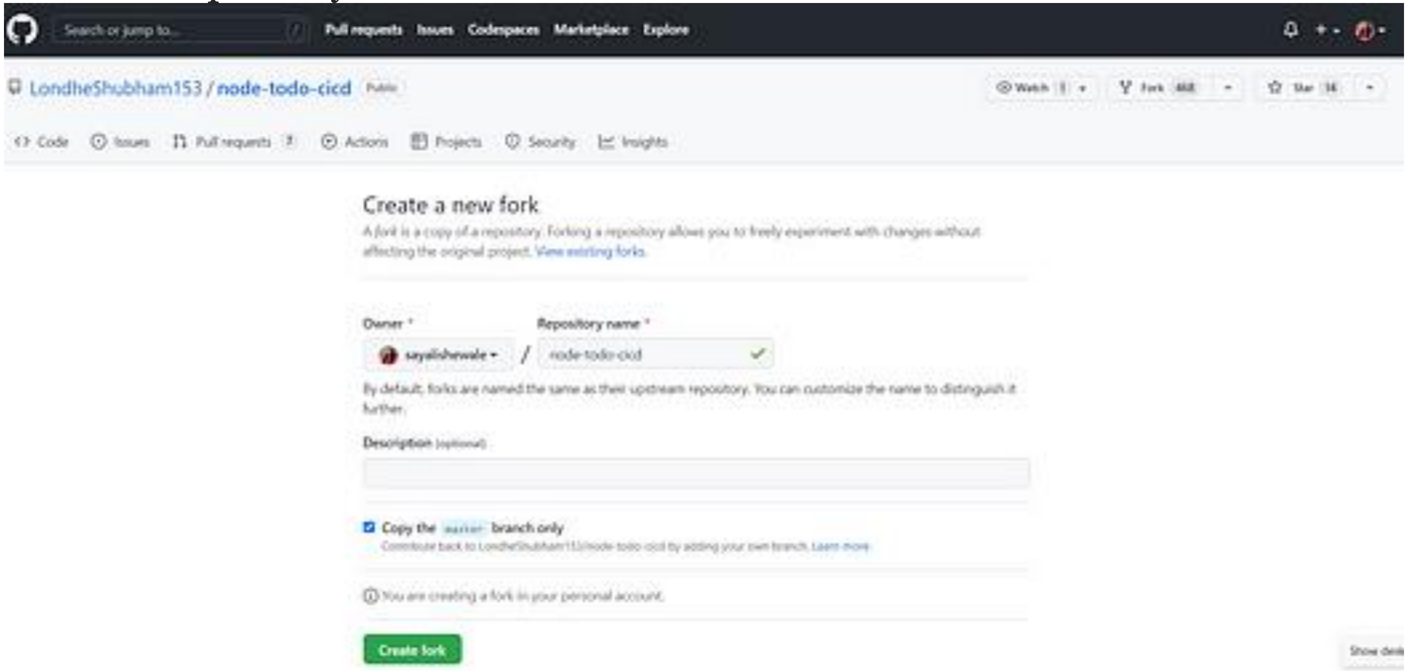
Complete Jenkins CI/CD Project

Let’s make a beautiful CI/CD Pipeline for your Node JS Application

Task-01

Fork this repository:



Create a new fork

A fork is a copy of a repository. Forking a repository allows you to freely experiment with changes without affecting the original project. View existing forks.

Owner * sayalishewale / Repository name * node-todo-cicd

By default, forks are named the same as their upstream repository. You can customize the name to distinguish it further.

Description (optional)

[✓] Copy the master branch only

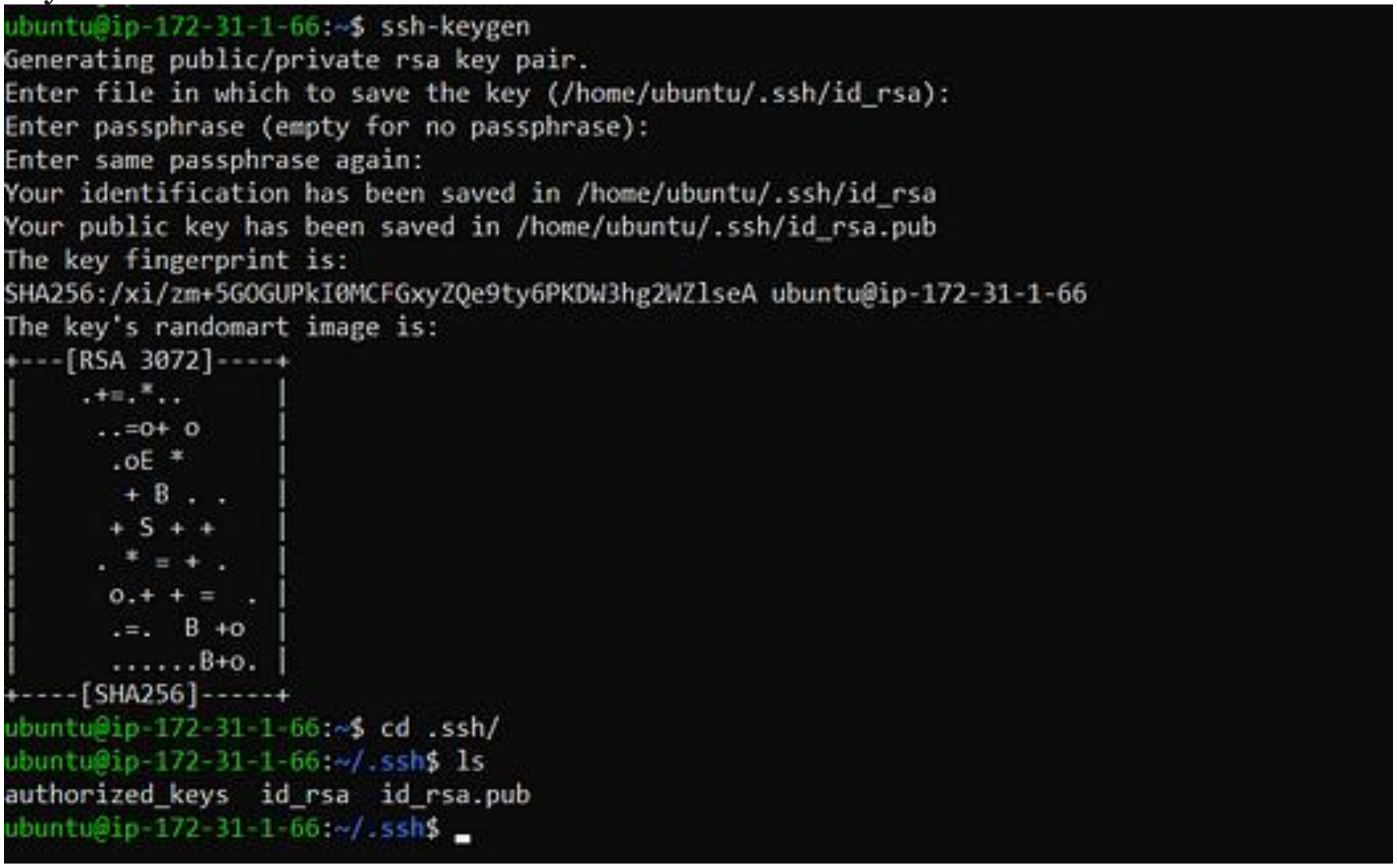
Contribute back to LondheShubham153/node-todo-cicd by adding your own branch. Learn more

You are creating a fork in your personal account.

Create a connection to your Jenkins job and your GitHub Repository via GitHub Integration.

Steps:

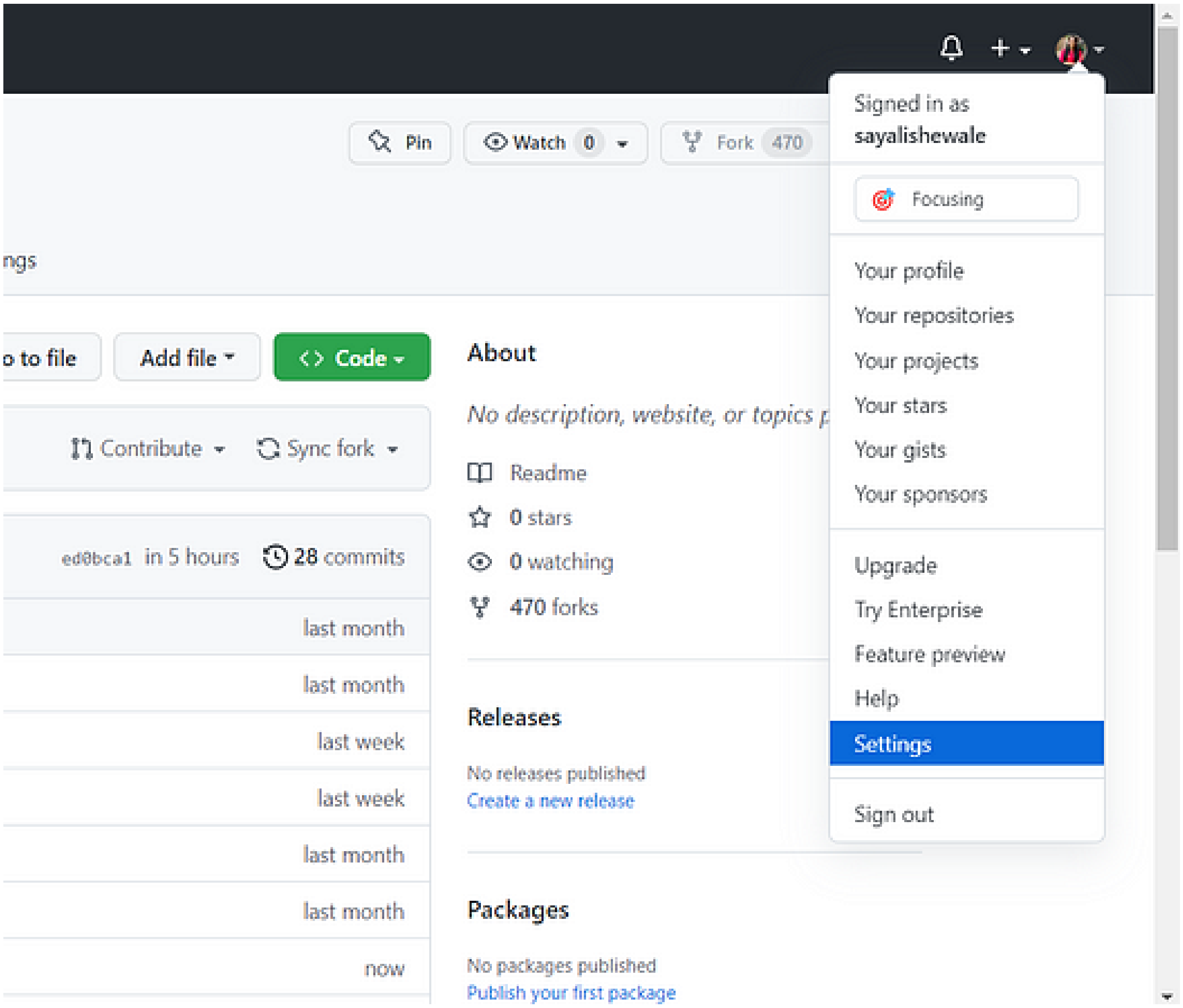
Generate the SSH keys for integrating your Jenkins project with your git repository. Use ssh-keygen command to create public and private key.



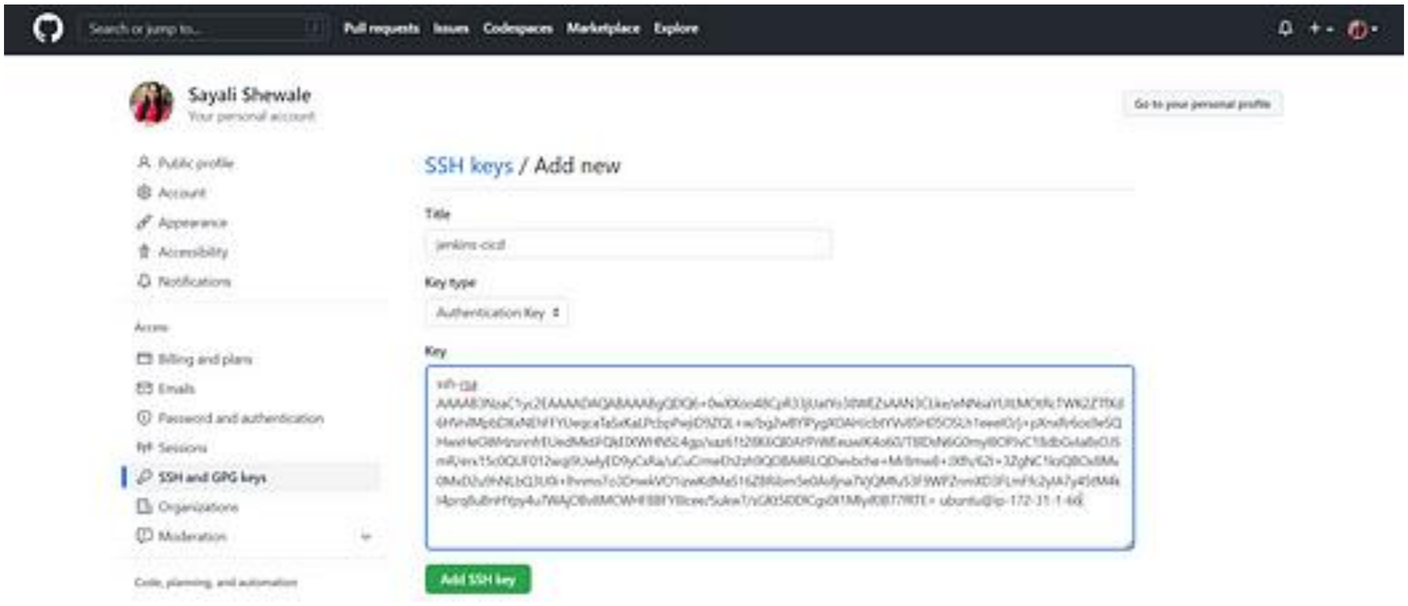
```
ubuntu@ip-172-31-1-66:~$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ubuntu/.ssh/id_rsa
Your public key has been saved in /home/ubuntu/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:/xi/zm+5GOGUPkI0MCFGxyZQe9ty6PKDW3hg2WZlseA ubuntu@ip-172-31-1-66
The key's randomart image is:
+---[RSA 3072]----+
|    .+=.*..      |
|     ..=o+ o     |
|      .oE *      |
|       + B . .   |
|      + S + +    |
|     . * = + .   |
|      o.+ + =  . |
|      .=.  B +o  |
|      ......B+o. |
+----[SHA256]-----+
ubuntu@ip-172-31-1-66:~$ cd .ssh/
ubuntu@ip-172-31-1-66:~/.ssh$ ls
authorized_keys  id_rsa  id_rsa.pub
ubuntu@ip-172-31-1-66:~/.ssh$
```

Configuring GitHub

1.Go to your GitHub account settings.



2.Go to SSH and GPG keys, Add public key that we created using ssh-keygen and select key-type Authentication key.



SSH keys / Add new

Title: jenkins-cicd

Key type: Authentication Key

Key:

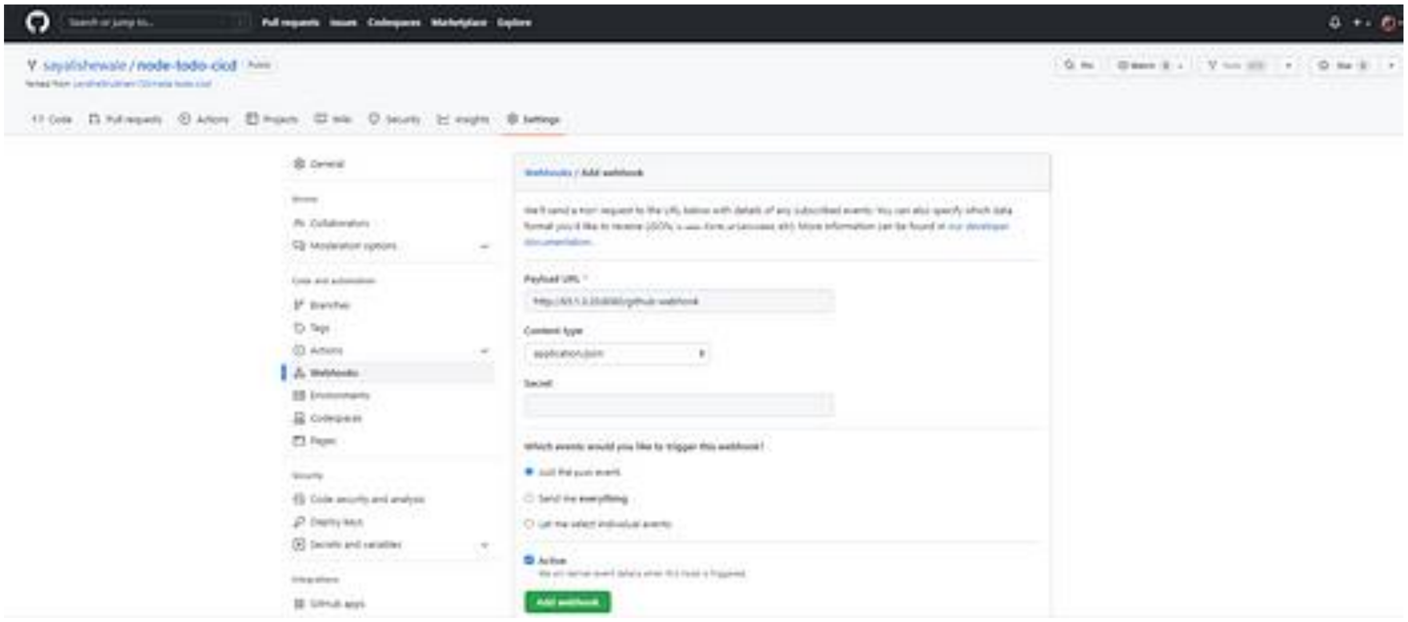
```
ssh-rsa
[illegible] ubuntu@ip-172-31-1-46
```

For GitHub-Webhook:

1.Go to your GitHub repository and click on Settings.

2.Click on Webhooks and then click on Add webhook.

3. In the ‘Payload URL’ field, paste your Jenkins environment URL. At the end of this URL add /github-webhook/. In the ‘Content type’ select: ‘application/json’ and leave the ‘Secret’ field empty.


Webhooks / Add webhook

We'll send a POST request to the URL below with details of any subscribed events. You can also specify which data format you'd like to receive (JSON, x-www-form-urlencoded, etc). More information can be found in our developer documentation.

Payload URL *: http://65.1.3.23:8080/github-webhook

Content type: application/json

Secret:

Which events would you like to trigger this webhook?

- [✓ Just the push event.]
- Send me everything.
- Let me select individual events.

[✓ Active] We will deliver event details when this hook is triggered.

Add webhook

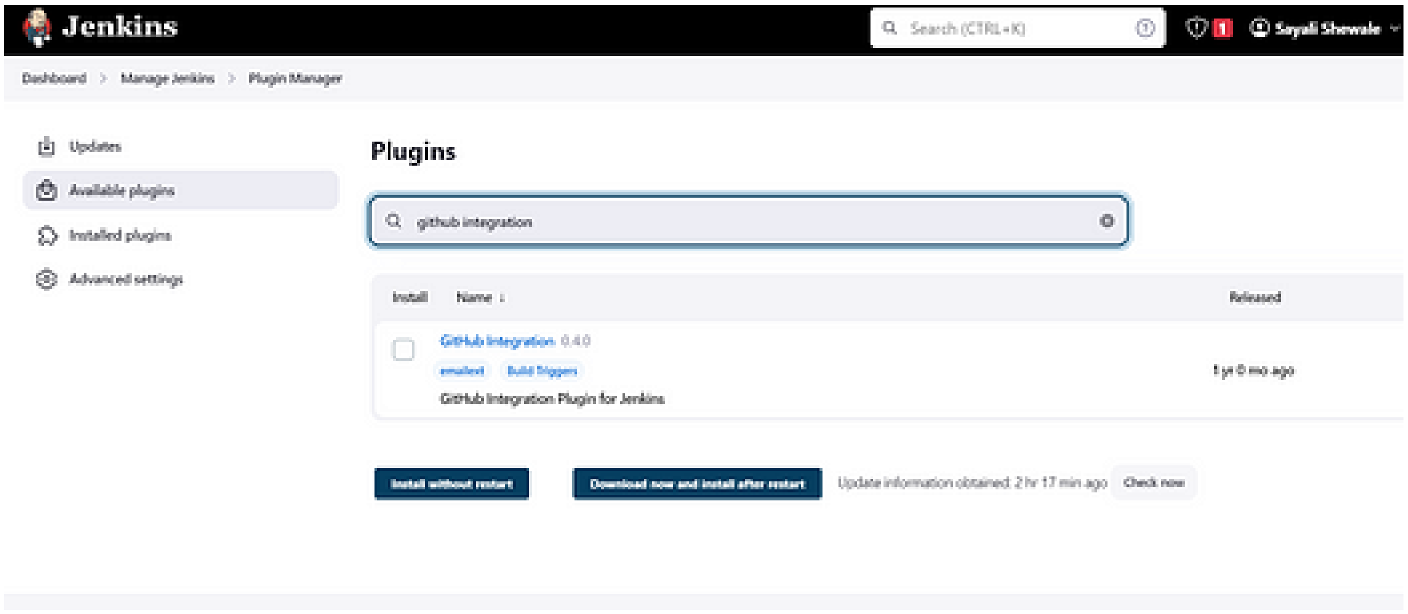
For Installing GitHub Integration plugin in Jenkins

1.Open your jenkins dashboard.

2.Click on the Manage Jenkins button on your Jenkins dashboard

3.Click on Manage Plugins

4. Install GitHub Integration plugin



Jenkins

Dashboard > Manage Jenkins > Plugin Manager

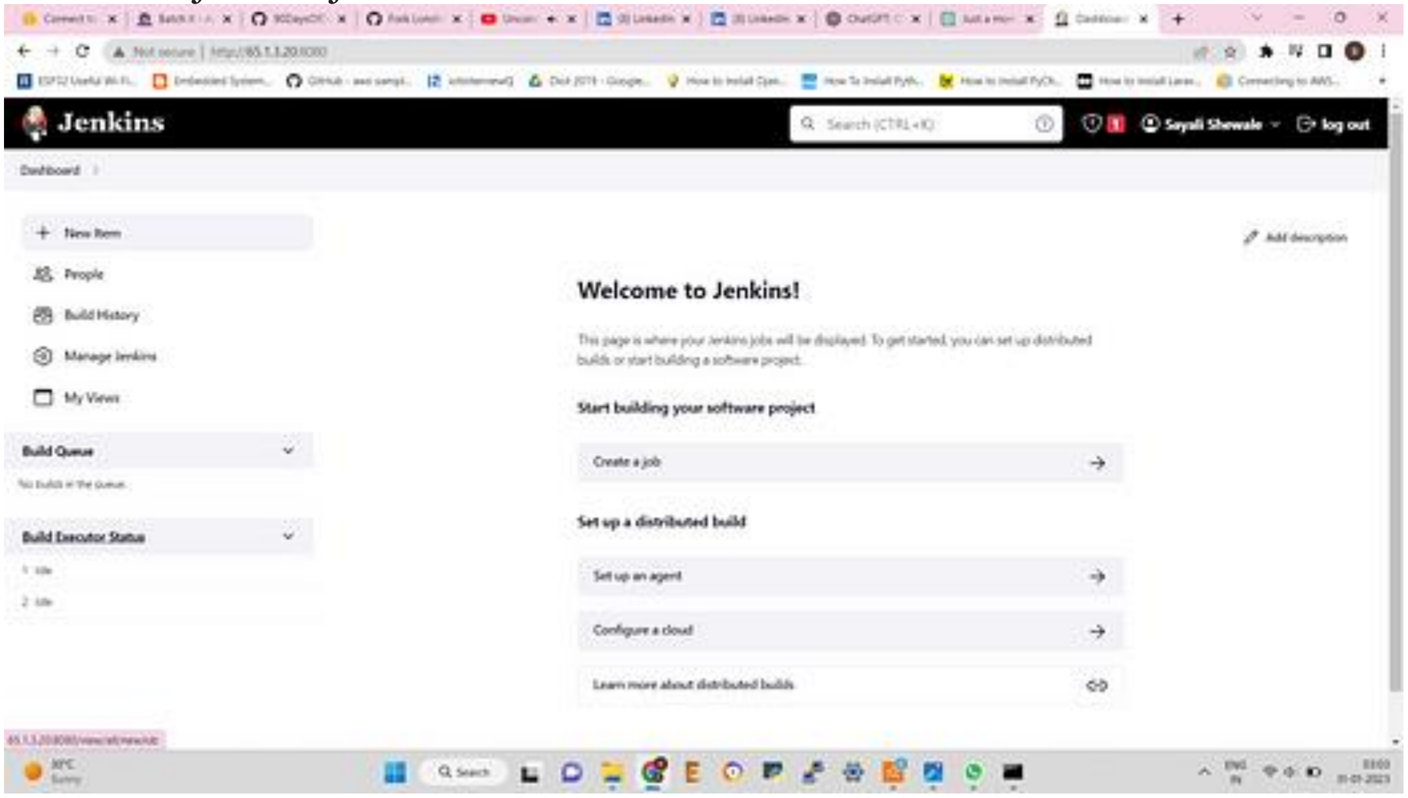
Plugins

github integration

Install	Name ↓	Released
☐	GitHub Integration 0.4.0 emailext Build Triggers GitHub Integration Plugin for Jenkins	1 yr 0 mo ago

Configuring Jenkins:

1. Create a jenkins job



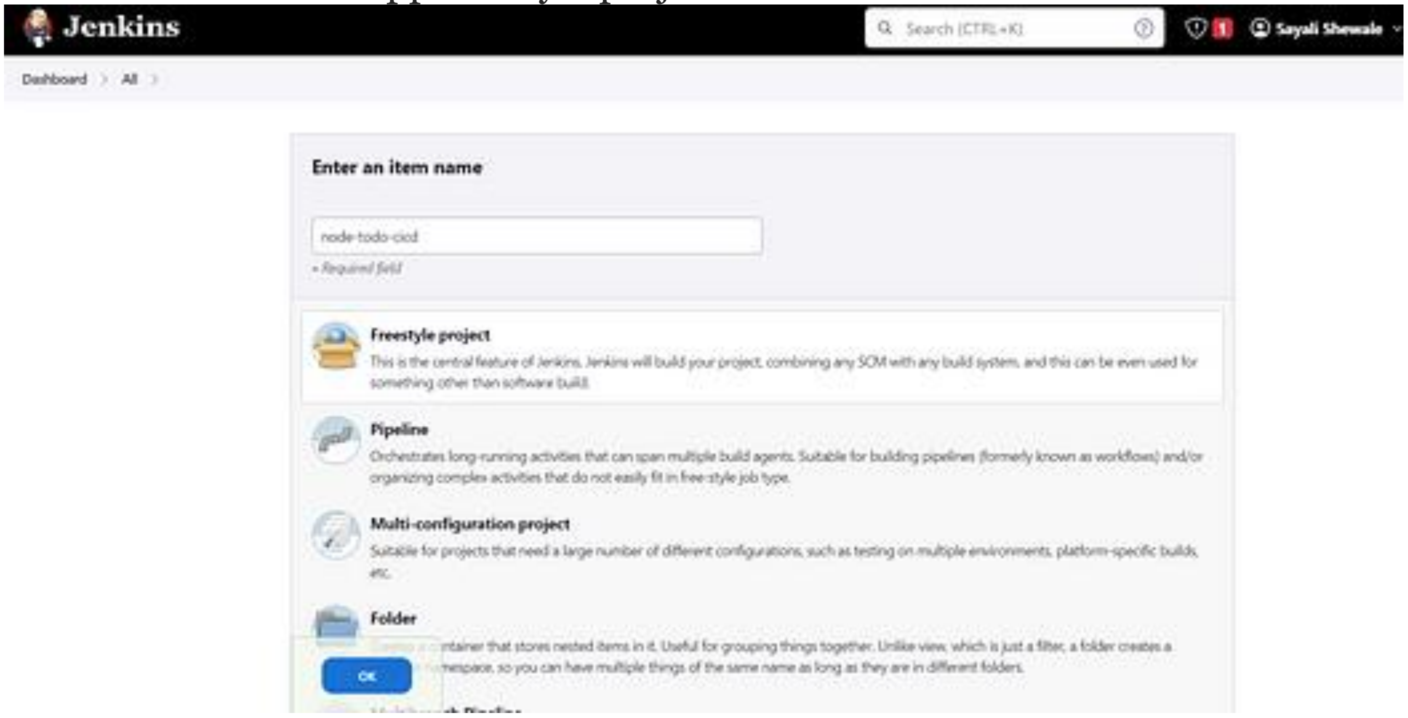
Welcome to Jenkins!

This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.

Start building your software project

Set up a distributed build

2. Create node-todo-app freestyle project



Jenkins

Search (CTRL+K)

Sayali Shewale

Dashboard > All >

Enter an item name

node-todo-cicd

» Required field

Freestyle project
This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.

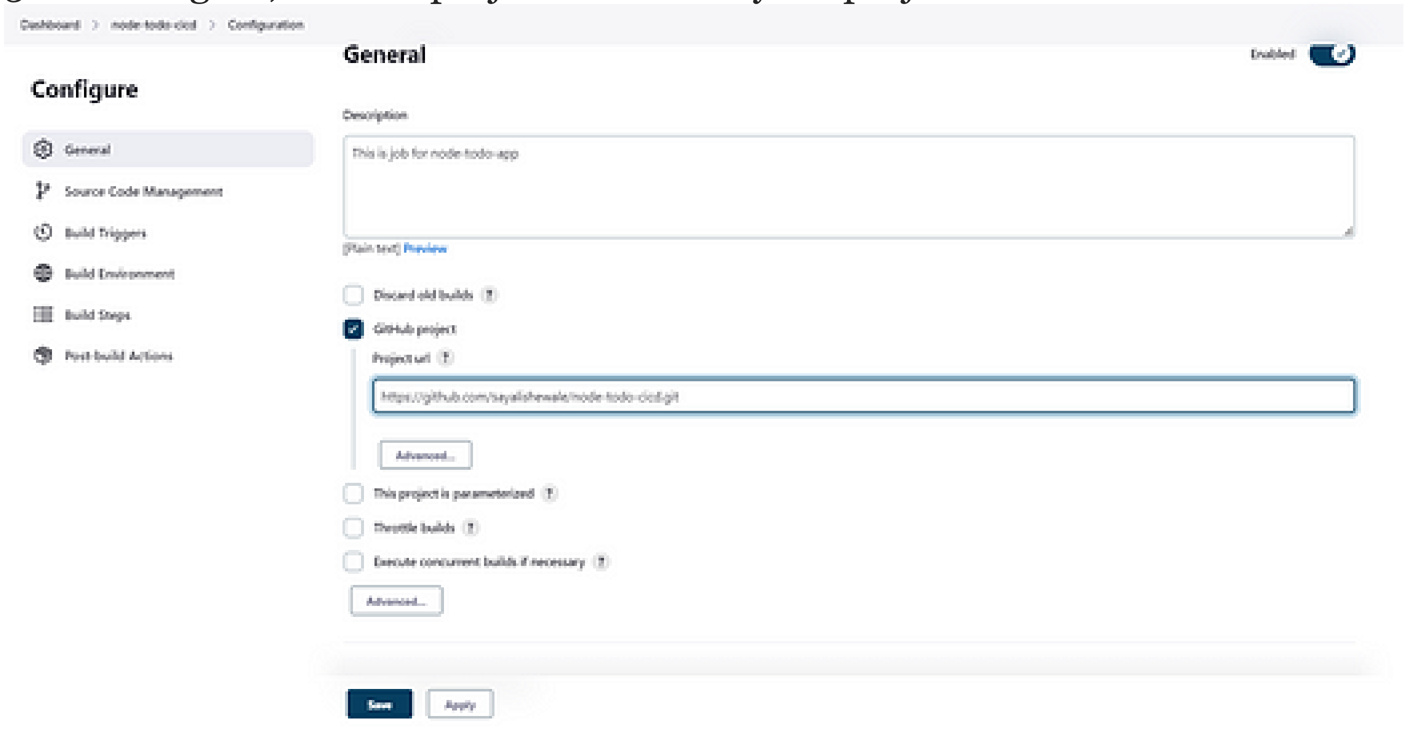
Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

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.

OK

3. In Configure, GitHub project URL write your project GitHub URL



Dashboard > node-todo-cicd > Configuration

Configure

General

Source Code Management

Build Triggers

Build Environment

Build Steps

Post-build Actions

General

Enabled

Description

This is job for node-todo-app

[Plain text] Preview

- [ ] Discard old builds
- [x] GitHub project

Project url

https://github.com/sayalishewale/node-todo-cicd.git

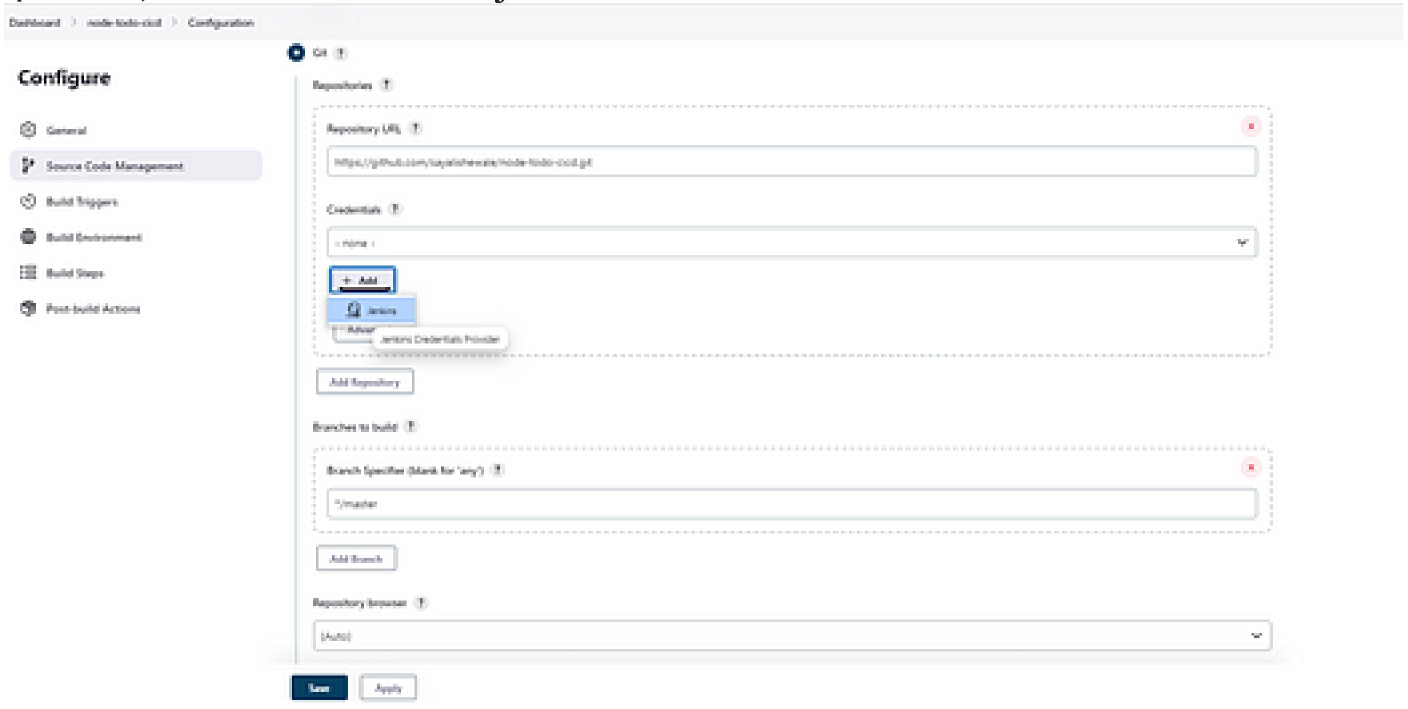
Advanced...

- [ ] This project is parameterized
- [ ] Throttle builds
- [ ] Execute concurrent builds if necessary

Advanced...

Save Apply

4.In Git, add credentials for jenkins


Dashboard > node-todo-cicd > Configuration

Configure

General
Source Code Management
Build Triggers
Build Environment
Build Steps
Post-build Actions

Git

Repositories

Repository URL
https://github.com/sayalishewale/node-todo-cicd.git

Credentials
- none -

+ Add
Jenkins
Jenkins Credentials Provider

Add Repository

Branches to build

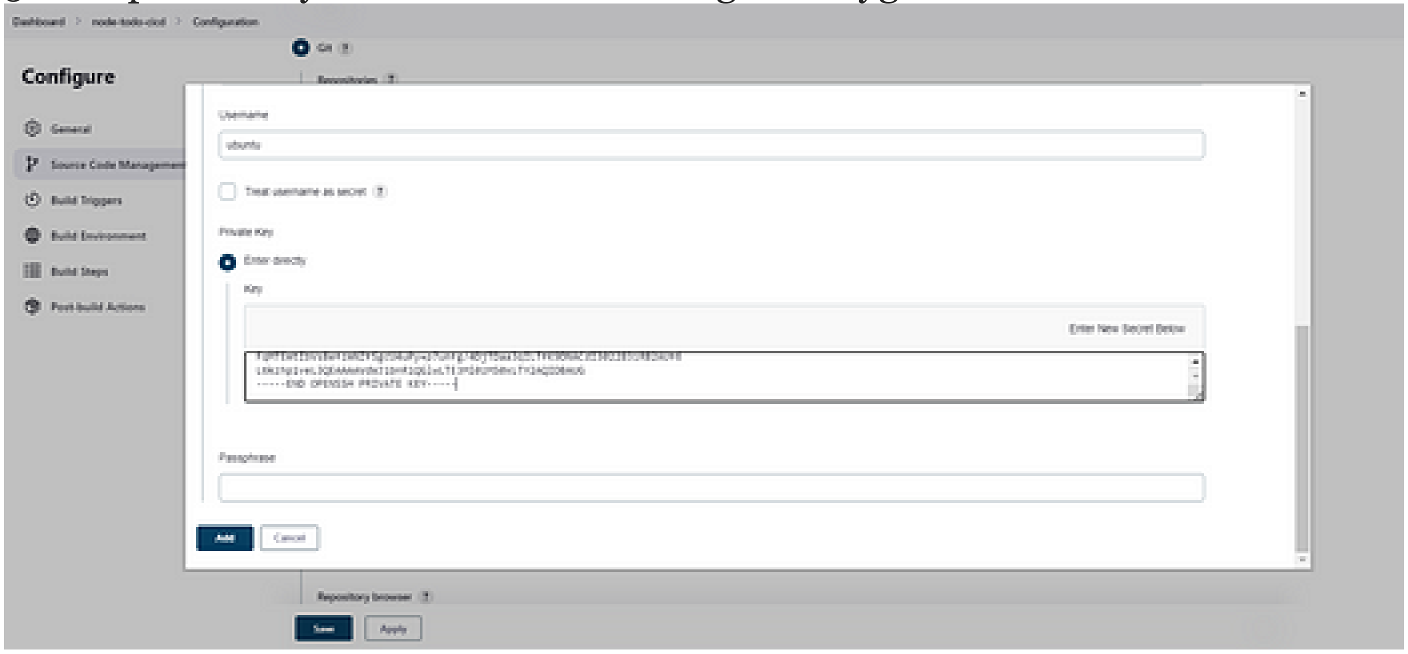
Branch Specifier (blank for 'any')
*/master

Add Branch

Repository browser
(Auto)

Save Apply

5. Add private key which we created using ssh-keygen command.


Dashboard > node-todo-cicd > Configuration

Configure

General
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Git

Repositories

Username
ubuntu

Treat username as secret

Private Key
Enter directly

Key
Enter New Secret Below

```
[illegible]
[illegible]
-----END OPENSSH PRIVATE KEY-----
```

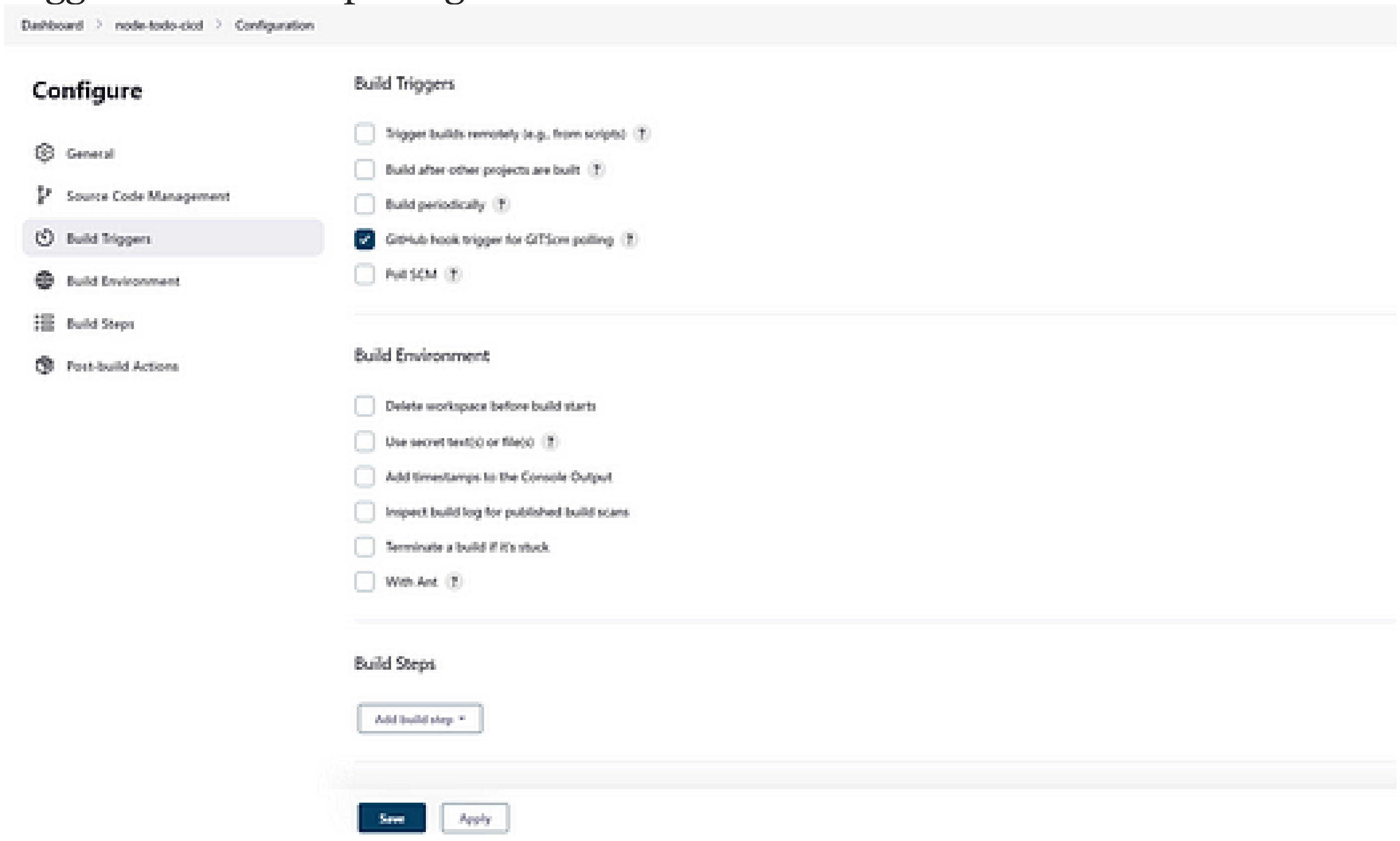
Passphrase

Add Cancel

Repository browser

Save Apply

6. Click on the ‘Build Triggers’ tab and then on the ‘GitHub hook trigger for GITScm polling’.



Dashboard > node-todo-cicd > Configuration

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

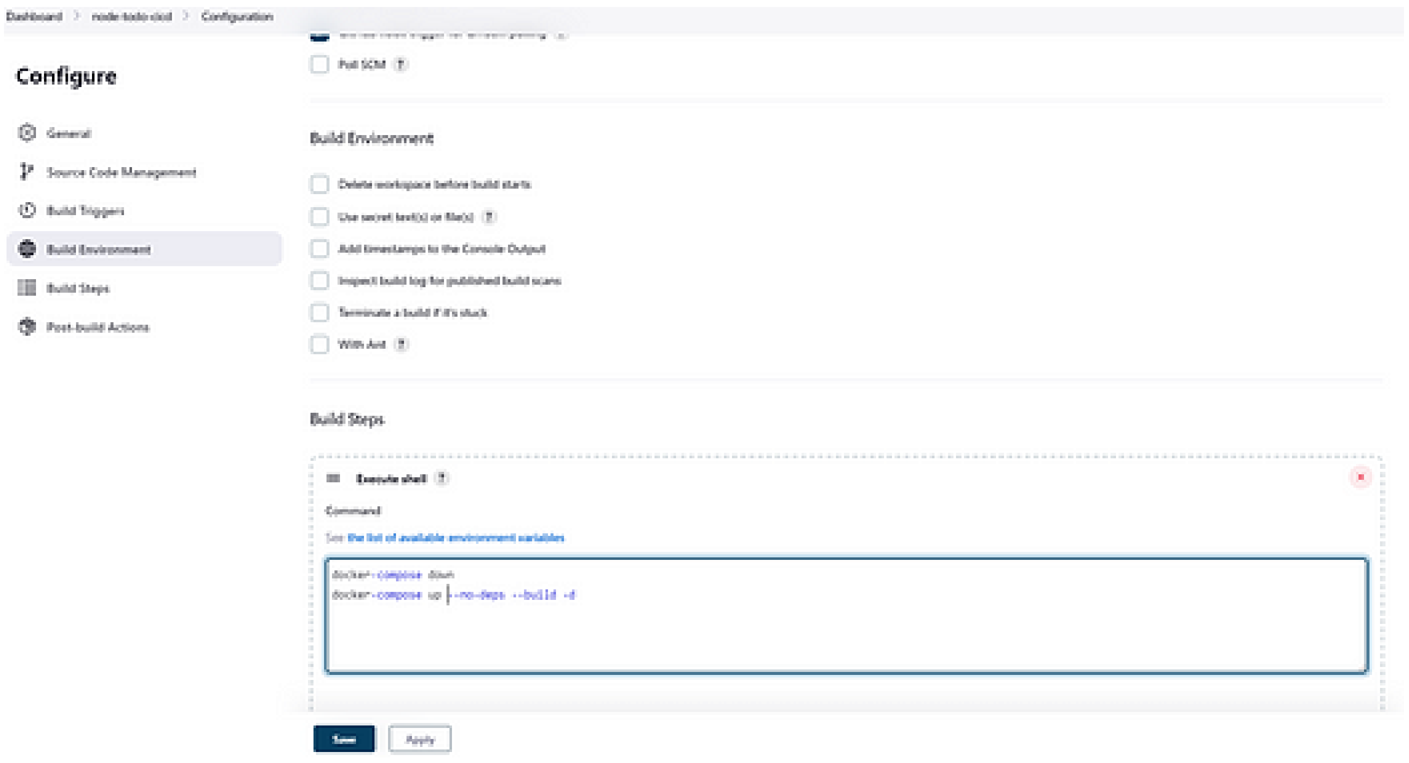
Build Environment

- [ ] 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

Task 2:

In the Execute shell run the application using Docker compose



Poll SCM

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

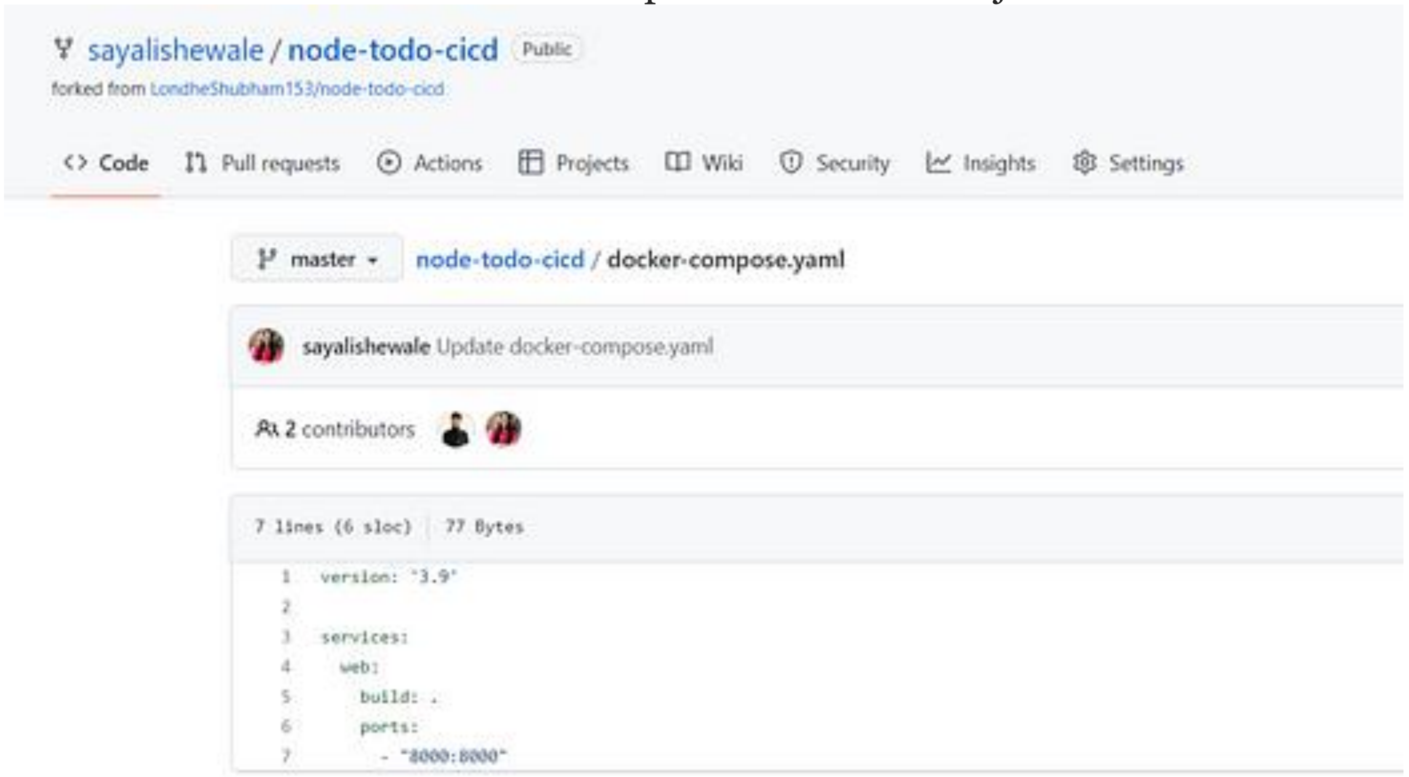
Execute shell

Command

See the list of available environment variables

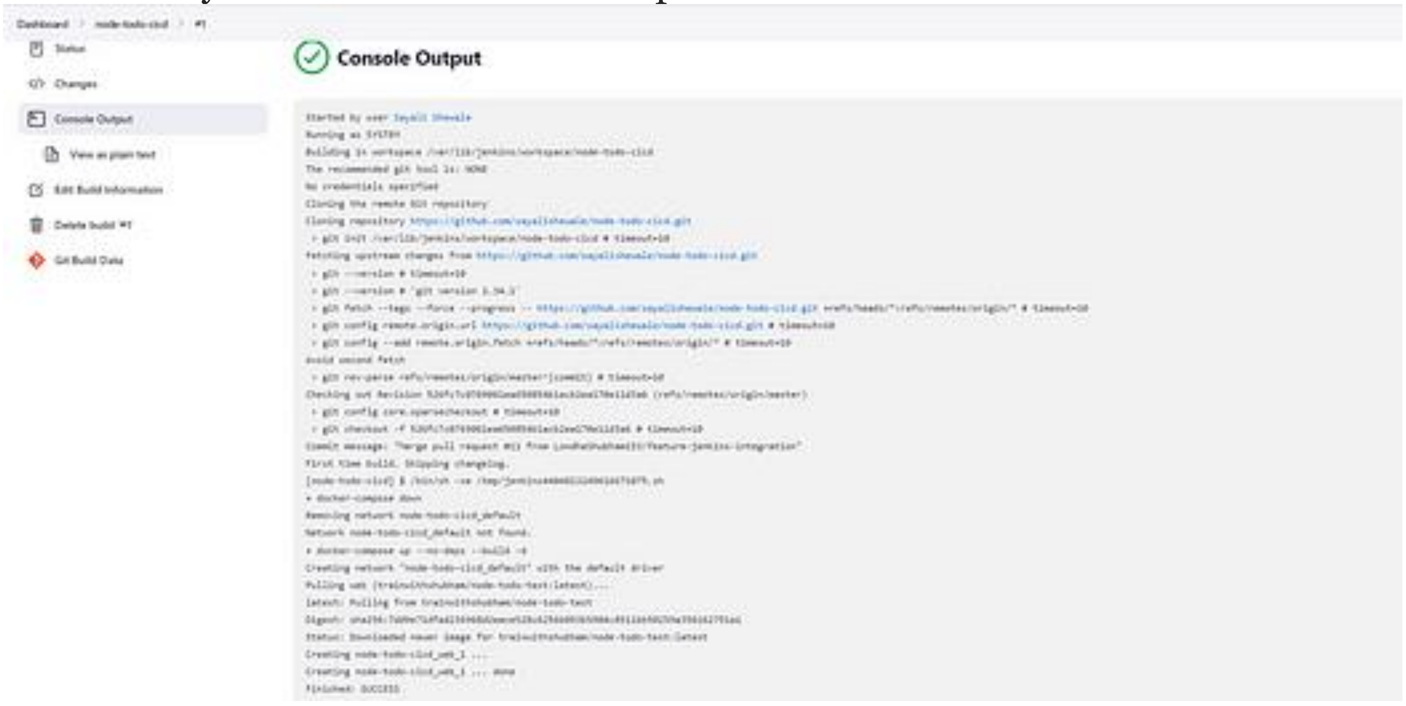
```
docker-compose down
docker-compose up --no-deps --build -d
```

You will have to make a Docker Compose file for this Project


sayalishewale / node-todo-cicd Public
forked from LondheShubham153/node-todo-cicd
Code
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
master
node-todo-cicd / docker-compose.yaml
sayalishewale Update docker-compose.yaml
2 contributors
7 lines (6 sloc) | 77 Bytes

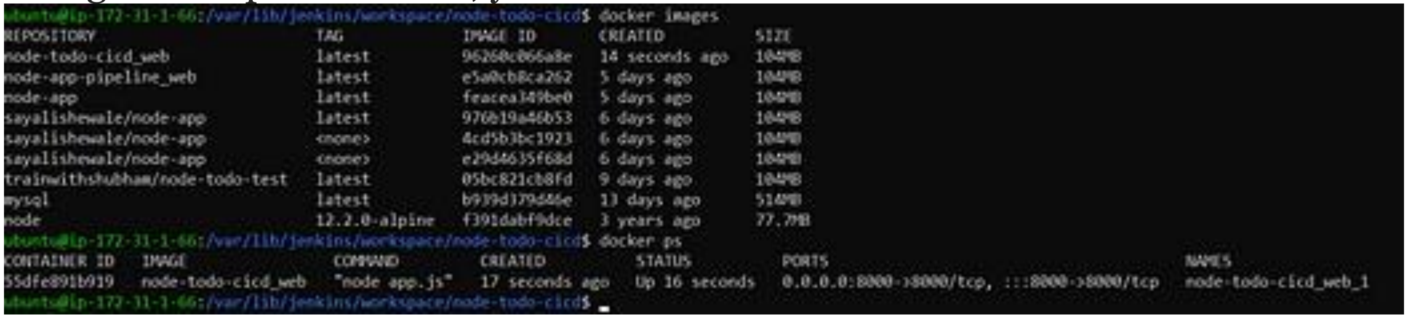
```yaml
version: '3.9'

services:
  web:
    build: .
    ports:
      - "8000:8000"
```

After build you can check console output.



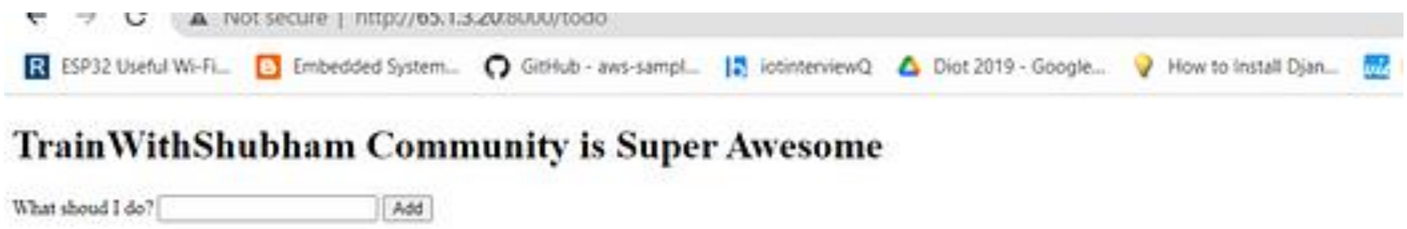
```
Started by user Sayali Shewale
Running as SYSTEM
Building in workspace /var/lib/jenkins/workspace/node-todo-cicd
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/sayalishewale/node-todo-cicd.git
 > git init /var/lib/jenkins/workspace/node-todo-cicd # timeout=10
Fetching upstream changes from https://github.com/sayalishewale/node-todo-cicd.git
 > git --version # timeout=10
 > git --version # 'git version 2.34.1'
 > git fetch --tags --force --progress -- https://github.com/sayalishewale/node-todo-cicd.git +refs/heads/*:refs/remotes/origin/* # timeout=10
 > git config remote.origin.url https://github.com/sayalishewale/node-todo-cicd.git # timeout=10
 > git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
 > git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision [illegible] (refs/remotes/origin/master)
 > git config core.sparsecheckout # timeout=10
 > git checkout -f [illegible] # timeout=10
Commit message: "Merge pull request #11 from LondheShubham153/feature-jenkins-integration"
First time build. Skipping changelog.
[node-todo-cicd] $ /bin/sh -xe /tmp/jenkins[illegible].sh
+ docker-compose down
Removing network node-todo-cicd_default
Network node-todo-cicd_default not found.
+ docker-compose up --no-deps --build -d
Creating network "node-todo-cicd_default" with the default driver
Pulling web (trainwithshubham/node-todo-test:latest)...
latest: Pulling from trainwithshubham/node-todo-test
Digest: sha256:[illegible]
Status: Downloaded newer image for trainwithshubham/node-todo-test:latest
Creating node-todo-cicd_web_1 ...
Creating node-todo-cicd_web_1 ... done
Finished: SUCCESS
```

Using docker ps command, you can see container is created.



```
ubuntu@ip-172-31-1-66:/var/lib/jenkins/workspace/node-todo-cicd$ docker images
REPOSITORY                    TAG            IMAGE ID       CREATED          SIZE
node-todo-cicd_web            latest         96260c066a8e   14 seconds ago   104MB
node-app-pipeline_web         latest         e5a0cb8ca262   5 days ago       104MB
node-app                      latest         feacea349be0   5 days ago       104MB
sayalishewale/node-app        latest         976b19a46b53   6 days ago       104MB
sayalishewale/node-app        <none>         4cd5b3bc1923   6 days ago       104MB
sayalishewale/node-app        <none>         e29d4635f68d   6 days ago       104MB
trainwithshubham/node-todo-test   latest     05bc821cb8fd   9 days ago       104MB
mysql                         latest         b939d379d46e   13 days ago      514MB
node                          12.2.0-alpine  f391dabf9dce   3 years ago      77.7MB
ubuntu@ip-172-31-1-66:/var/lib/jenkins/workspace/node-todo-cicd$ docker ps
CONTAINER ID   IMAGE                COMMAND         CREATED          STATUS          PORTS                                       NAMES
55dfe891b919   node-todo-cicd_web   "node app.js"   17 seconds ago   Up 16 seconds   0.0.0.0:8000->8000/tcp, :::8000->8000/tcp   node-todo-cicd_web_1
ubuntu@ip-172-31-1-66:/var/lib/jenkins/workspace/node-todo-cicd$ _
```

Browse public IP address with port no.8000


Not secure | http://65.1.3.20:8000/todo

TrainWithShubham Community is Super Awesome

What shoud I do? [ ] Add