What is a

Jenkins

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Why Jenkins

Jenkin is a tool that is used for automation. It is mainly an open-source service that allows all the developer to build, test and deploy software.

By using Jenkin, we can make continuous integration of project(jobs) or end-to-endpoint automation.

Main aim is Auto-update.

- **Free and open source**: Jenkins is free to use and can be customized without licensing fees.
- **Large community**: Jenkins has a large, active community that develops and shares plugins.
- **Extensive plugin ecosystem**: Jenkins has a large ecosystem of plugins that can integrate with many other tools.
- **Platform independent**: Jenkins can be installed on many operating systems and platforms.
- **Scalable**: Jenkins can be scaled up by adding nodes to run builds on different machines.
- **Integrates with many tools:** Jenkins can integrate with many tools in the software development lifecycle.

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Jenkin components

- **Jobs**
- **Triggers**
- **Plugins**
- **Configuration**
- **Security settings**

Jobs/Projects

- **Role:** Defines the work Jenkins should perform.
- **Types:**
  - Freestyle Jobs: Basic jobs with configurable build steps.
  - Pipeline Jobs: Defined as code (Jenkins file) using Groovy.
  - Multi-branch Pipelines: Automatically builds branches in version control systems.

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Triggers

Triggers automate the execution of jobs based on specific events or schedules:

- Poll SCM: Periodically checks the repository for changes.
- Webhook Triggers: Triggers builds on push or pull request events from GitHub/GitLab.
- Scheduled Trigger: Uses cron-like syntax for periodic builds.
- Build After Other Projects: Chains jobs together.
- Remote Trigger: Starts builds via API calls or scripts.

- Pipeline Triggers: Defined in Jenkinsfile using pollSCM or cron.

Plugins

- **Role:** Extend Jenkins' core functionality.
- **Examples:**
  - Source Code Management (SCM): Git, SVN.
  - Build Tools: Maven, Gradle.
  - Deployment: Ansible, Kubernetes.
  - Notifications: Slack, Email.
- **Key Benefit:** Modularity and flexibility in adapting to diverse CI/CD needs.

Configuration

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Proper configuration ensures Jenkins operates efficiently:

Website or webserver settings.

Two level: global level

Job level

Security settings

- Configured in Manage Jenkins > Configure Global Security.
- Includes authentication, authorization, and encryption settings.

Jobs

- Freestyle Job
- Pipeline
- Multibranch pipeline

Freestyle Job

- Simplest and most flexible job type.
- Configurable through the UI for tasks like compiling code, running tests, or deploying applications.
- Supports basic build steps, triggers, and post-build actions.

Pipeline

- Automates workflows as code using a Jenkinsfile (written in Groovy).
- Supports complex CI/CD processes with multiple stages (e.g., Build, Test, Deploy).
- Two syntaxes available: Declarative (simpler) and Scripted (more flexible).

Multibranch Pipeline

- Automatically detects and creates pipelines for each branch in a repository.
- Useful for managing CI/CD workflows for multiple branches in Git or other SCMs.
- Handles feature branches, pull requests, and merges dynamically.

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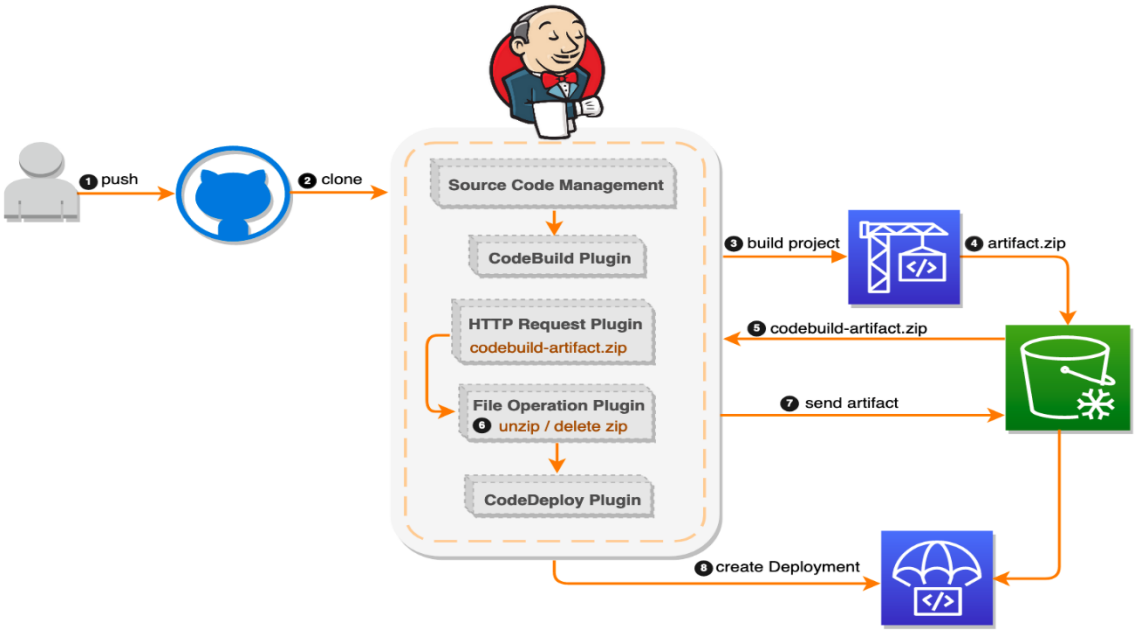
Jenkin Infrastructure



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This diagram represents a CI/CD pipeline workflow using Jenkins, GitHub, AWS CodeBuild, S3, and CodeDeploy:

1. **Push**: Developer pushes code to GitHub.
2. **Clone**: Jenkins fetches code from GitHub.
3. **Build**: Code Build Plugin builds the project.
4. **Artifact**: The build generates an artifact (e.g., artifact.zip).
5. **HTTP Request**: Jenkins retrieves the artifact via HTTP.
6. **File Operations**: Artifact is unzipped or deleted.
7. **Upload**: Jenkins sends the artifact to an S3 bucket.
8. **Deployment**: Code Deploy Plugin deploys the application from S3 to the target environment.

This setup integrates automation tools for seamless code building, packaging, and deployment.

First Step towards Jenkin

Launch Ec2 instance.

sudo yum install docker.

```
PS C:\Users\91775> ssh -i .\Downloads\nvirginia.pem ec2-user@44.202.165.63
The authenticity of host '44.202.165.63 (44.202.165.63)' can't be established.
ED25519 key fingerprint is SHA256:PMxDAN3PC3LwNE5t5D9/DIBe3Z+9xmKxuynLMmPfhm0.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '44.202.165.63' (ED25519) to the list of known hosts.
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
[ec2-user@ip-172-31-88-122 ~]$
[ec2-user@ip-172-31-88-122 ~]$ sudo yum install docker
Last metadata expiration check: 0:00:55 ago on Fri Jan 10 05:20:38 2025.
Dependencies resolved.
================================================================================================================================================
 Package                                    Architecture             Version                                    Repository                     Size
================================================================================================================================================
Installing:
 docker                                     x86_64                   25.0.6-1.amzn2023.0.2                      amazonlinux                    44 M
Installing dependencies:
 containerd                                 x86_64                   1.7.23-1.amzn2023.0.1                      amazonlinux                    36 M
 iptables-libs                              x86_64                   1.8.8-3.amzn2023.0.2                       amazonlinux                   401 k
 iptables-nft                               x86_64                   1.8.8-3.amzn2023.0.2                       amazonlinux                   183 k
 libcgroup                                  x86_64                   3.0-1.amzn2023.0.1                         amazonlinux                    75 k
 libnetfilter_conntrack                     x86_64                   1.0.8-2.amzn2023.0.2                       amazonlinux                    58 k
 libnfnetlink                               x86_64                   1.0.1-19.amzn2023.0.2                      amazonlinux                    30 k
 libnftnl                                   x86_64                   1.2.2-2.amzn2023.0.2                       amazonlinux                    84 k
 pigz                                       x86_64                   2.5-1.amzn2023.0.3                         amazonlinux                    83 k
 runc                                       x86_64                   1.1.14-1.amzn2023.0.1                      amazonlinux                   3.2 M

Transaction Summary
```

sudo service docker start

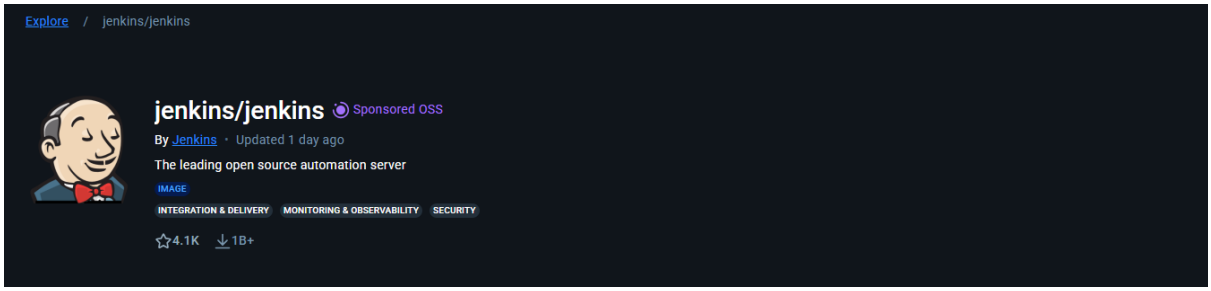
sudo service docker status

```
[ec2-user@ip-172-31-88-122 ~]$ sudo service docker start
Redirecting to /bin/systemctl start docker.service
[ec2-user@ip-172-31-88-122 ~]$ sudo service docker status
Redirecting to /bin/systemctl status docker.service
● docker.service - Docker Application Container Engine
     Loaded: loaded (/usr/lib/systemd/system/docker.service; disabled; preset: disabled)
     Active: active (running) since Fri 2025-01-10 05:22:30 UTC; 9s ago
TriggeredBy: ● docker.socket
       Docs: https://docs.docker.com
    Process: 26778 ExecStartPre=/bin/mkdir -p /run/docker (code=exited, status=0/SUCCESS)
    Process: 26780 ExecStartPre=/usr/libexec/docker/docker-setup-runtimes.sh (code=exited, status=0/SUCCESS)
   Main PID: 26781 (dockerd)
      Tasks: 7
     Memory: 29.7M
        CPU: 249ms
     CGroup: /system.slice/docker.service
             └─26781 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock --default-ulimit nofile=32768:65536

Jan 10 05:22:29 ip-172-31-88-122.ec2.internal systemd[1]: Starting docker.service - Docker Application Container Engine...
Jan 10 05:22:29 ip-172-31-88-122.ec2.internal dockerd[26781]: time="2025-01-10T05:22:29.907133057Z" level=info msg="Starting up"
Jan 10 05:22:29 ip-172-31-88-122.ec2.internal dockerd[26781]: time="2025-01-10T05:22:29.963842827Z" level=info msg="Loading containers: start."
Jan 10 05:22:30 ip-172-31-88-122.ec2.internal dockerd[26781]: time="2025-01-10T05:22:30.365551931Z" level=info msg="Loading containers: done."
Jan 10 05:22:30 ip-172-31-88-122.ec2.internal dockerd[26781]: time="2025-01-10T05:22:30.392096658Z" level=info msg="Docker daemon" commit=b08a51f c>
Jan 10 05:22:30 ip-172-31-88-122.ec2.internal dockerd[26781]: time="2025-01-10T05:22:30.392284998Z" level=info msg="Daemon has completed initializa>
Jan 10 05:22:30 ip-172-31-88-122.ec2.internal dockerd[26781]: time="2025-01-10T05:22:30.426493367Z" level=info msg="API listen on /run/docker.sock"
Jan 10 05:22:30 ip-172-31-88-122.ec2.internal systemd[1]: Started docker.service - Docker Application Container Engine.
lines 1-22/22 (END)
```

mkdir jenkinvolume

ls

```
[ec2-user@ip-172-31-88-122 ~]$ ls
[ec2-user@ip-172-31-88-122 ~]$ mkdir jenkinvolume
[ec2-user@ip-172-31-88-122 ~]$ ls
jenkinvolume
[ec2-user@ip-172-31-88-122 ~]$
```



sudo su

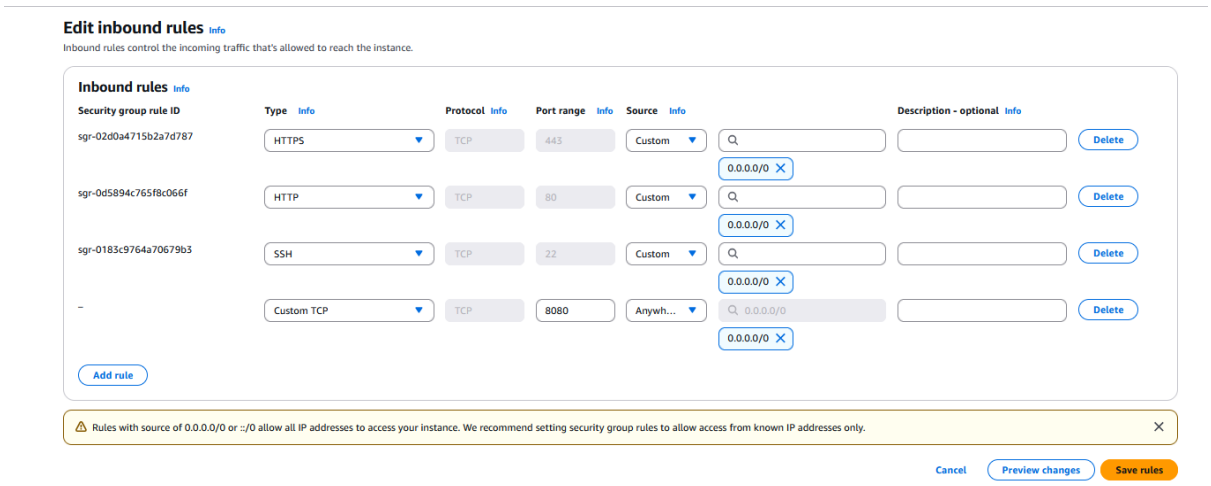
docker run -d - - name Jenkins -v /home/ec2-user/jenkinvolume:/varjenkins-home -p8080:8080 jenkims/Jenkins

```
[ec2-user@ip-172-31-88-122 ~]$ sudo su
[root@ip-172-31-88-122 ec2-user]# docker run -d --name jenkins -v /home/ec2-user/jenkinvolume:/var/jenkins-home -p8080:8080 jenkins/jenkins
Unable to find image 'jenkins/jenkins:latest' locally
latest: Pulling from jenkins/jenkins
0a96bdb82805: Pull complete
91cb5f626123: Pull complete
d20fec1ac056: Pull complete
a45ccb5543d6: Pull complete
049e7253f6dd: Pull complete
7c3d05f473c0: Pull complete
c5f5eeb0eb44: Pull complete
44c2adebfa8f: Pull complete
8e77bc0b7cda: Pull complete
9de704af0227: Pull complete
5be98b8e11d9: Pull complete
4f2a3fedaca9: Pull complete
Digest: sha256:db5f83e66d1717a4b8293693ead6f905a0a8d577767cbae37a4ef95cbc941d30
Status: Downloaded newer image for jenkins/jenkins:latest
29f4906dd18afab0eeefa0a7627a0cb13f52b75575f4a4a342bc414ebcfe851d
[root@ip-172-31-88-122 ec2-user]#
```

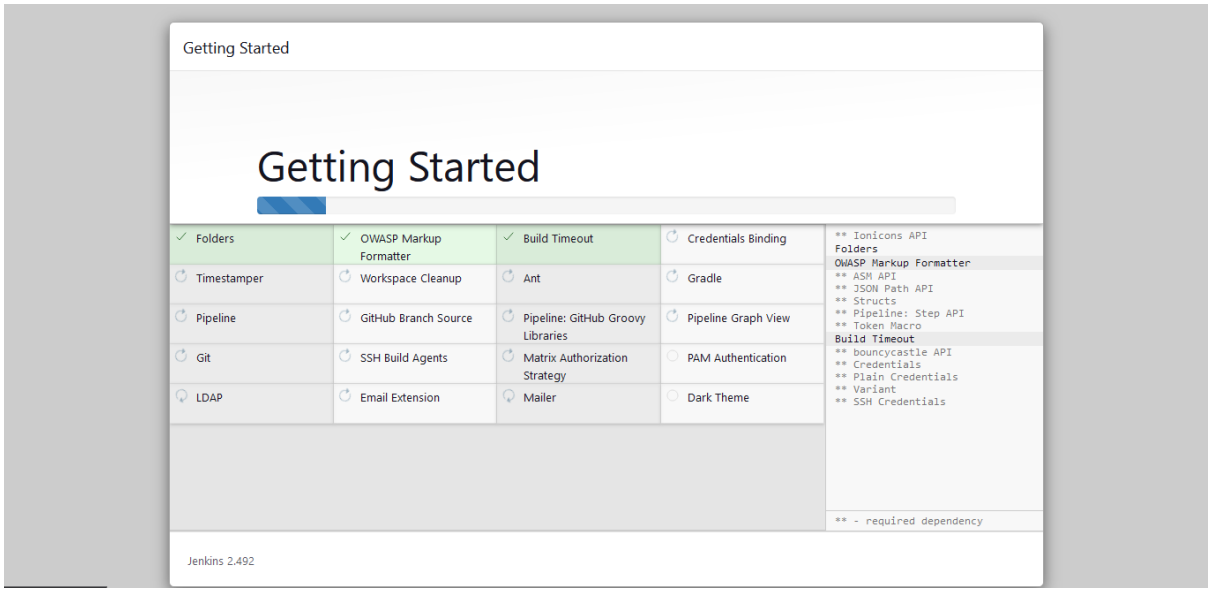
docker ps

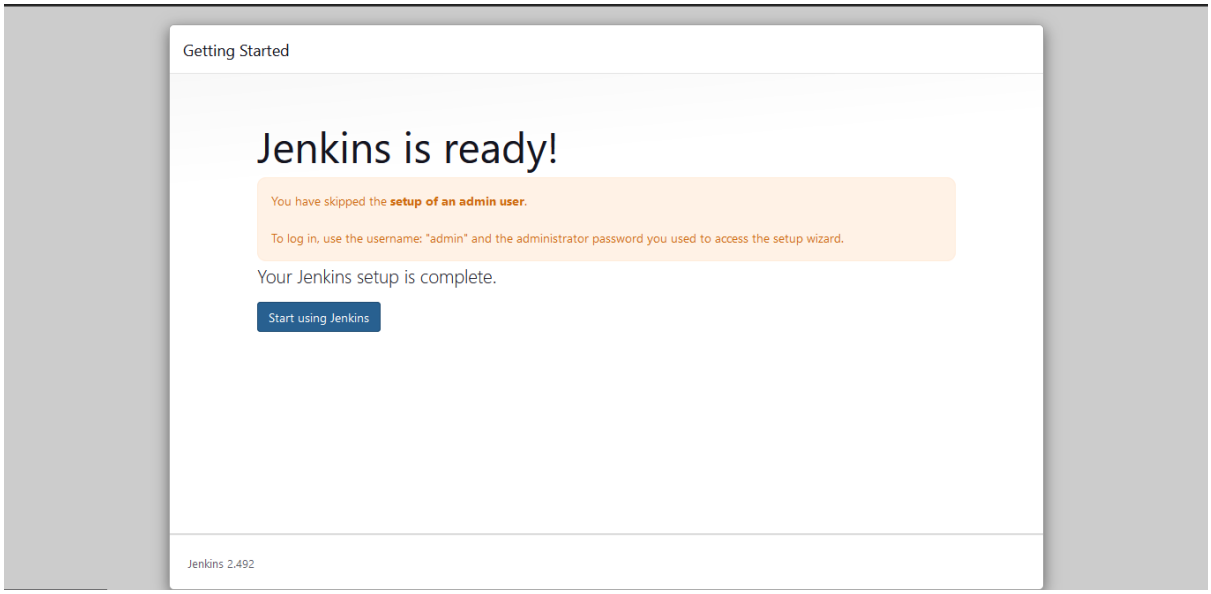
```
[root@ip-172-31-88-122 ec2-user]# docker ps
CONTAINER ID   IMAGE             COMMAND                  CREATED          STATUS          PORTS                                                   NA
MES
29f4906dd18a   jenkins/jenkins   "/usr/bin/tini -- /u…"   26 seconds ago   Up 25 seconds   0.0.0.0:8080->8080/tcp, :::8080->8080/tcp, 50000/tcp   je
nkins
[root@ip-172-31-88-122 ec2-user]#
```

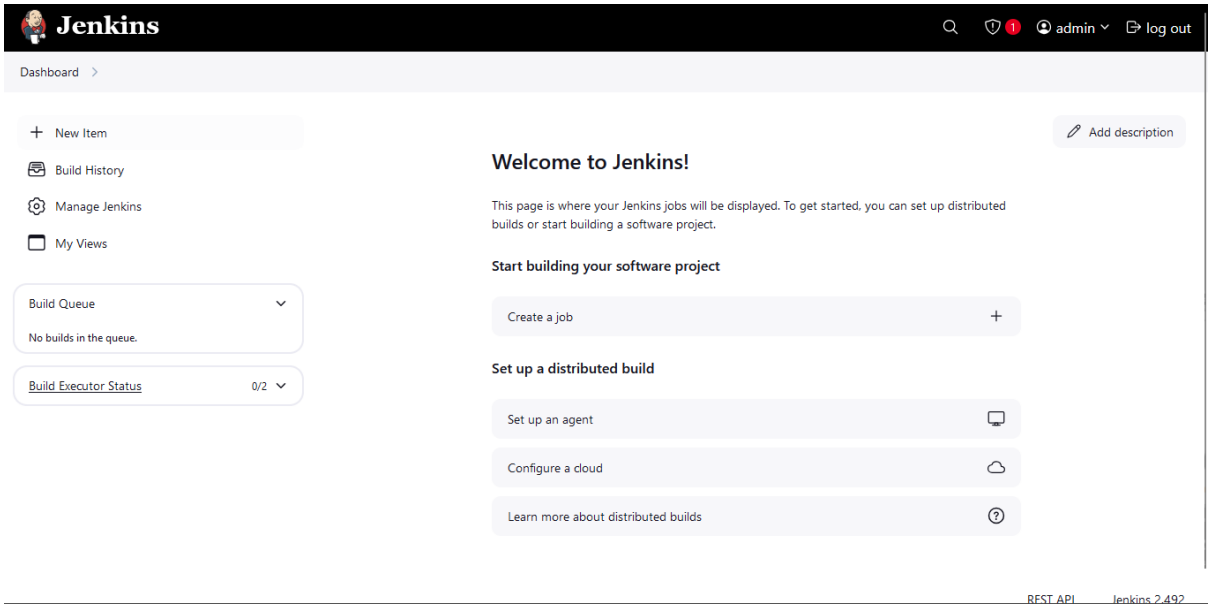
Edit inbound rule, open 8080 port no.



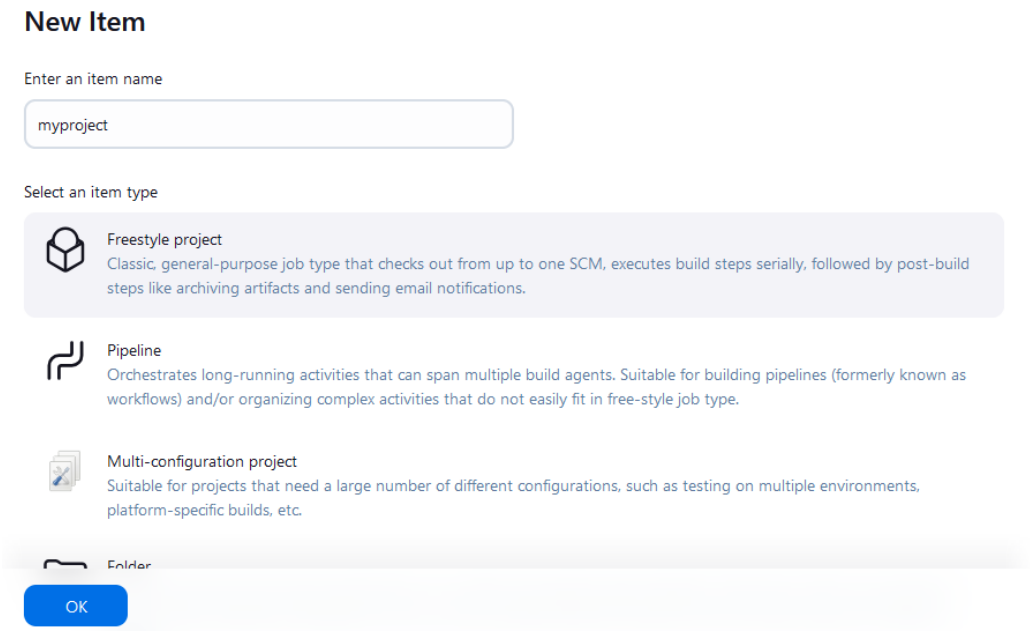
Getting started Jenkin.


Getting Started
Getting Started
Folders
OWASP Markup Formatter
Build Timeout
Credentials Binding
Timestamper
Workspace Cleanup
Ant
Gradle
Pipeline
GitHub Branch Source
Pipeline: GitHub Groovy Libraries
Pipeline Graph View
Git
SSH Build Agents
Matrix Authorization Strategy
PAM Authentication
LDAP
Email Extension
Mailer
Dark Theme
** Ionicons API
Folders
OWASP Markup Formatter
** ASM API
** JSON Path API
** Structs
** Pipeline: Step API
** Token Macro
Build Timeout
** bouncycastle API
** Credentials
** Plain Credentials
** Variant
** SSH Credentials
** - required dependency
Jenkins 2.492

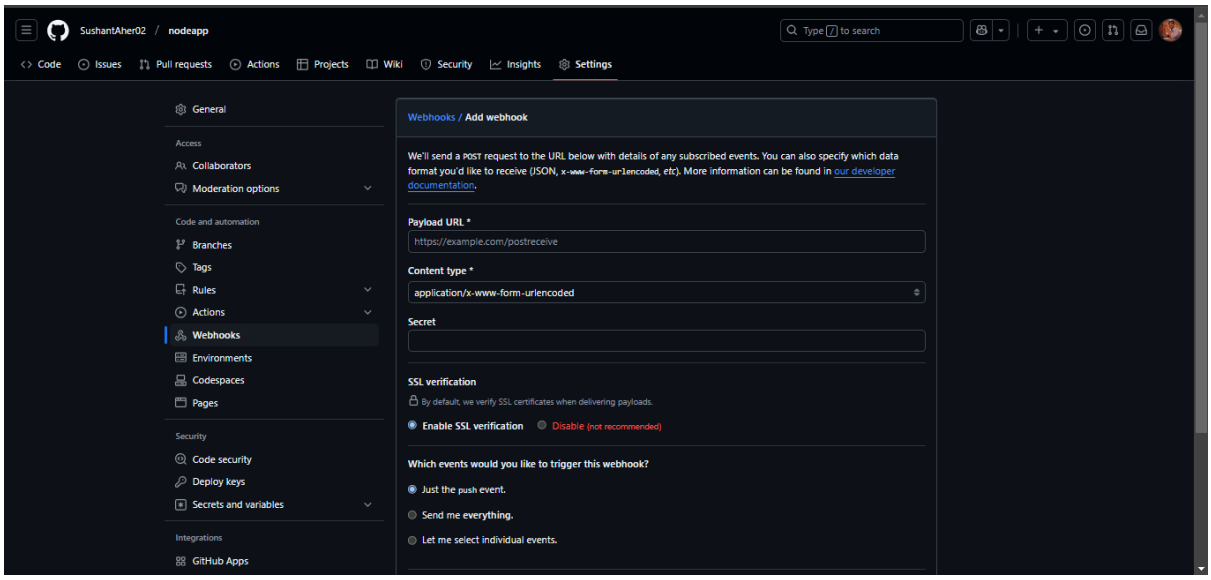

Getting Started
Jenkins is ready!
You have skipped the setup of an admin user.
To log in, use the username: "admin" and the administrator password you used to access the setup wizard.
Your Jenkins setup is complete.
Start using Jenkins
Jenkins 2.492

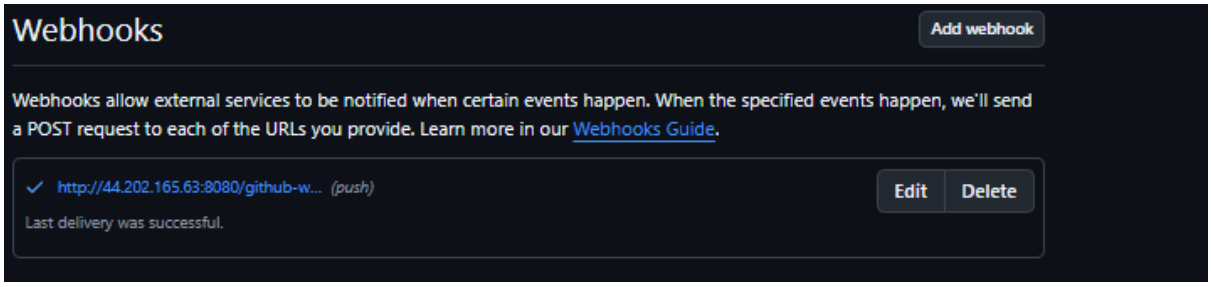

Jenkins
admin
log out
Dashboard
New Item
Build History
Manage Jenkins
My Views
Build Queue
No builds in the queue.
Build Executor Status
0/2
Add description
Welcome to Jenkins!
This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.
Start building your software project
Create a job
Set up a distributed build
Set up an agent
Configure a cloud
Learn more about distributed builds
REST API
Jenkins 2.492

Create new item.

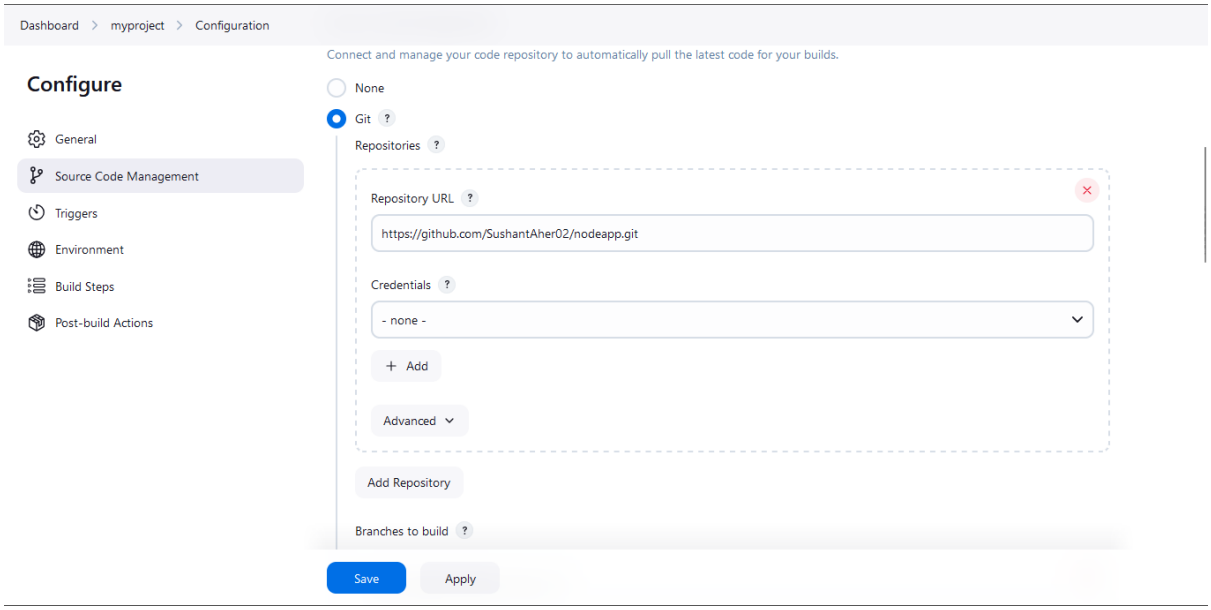


Add webhooks in our GitHub repo.

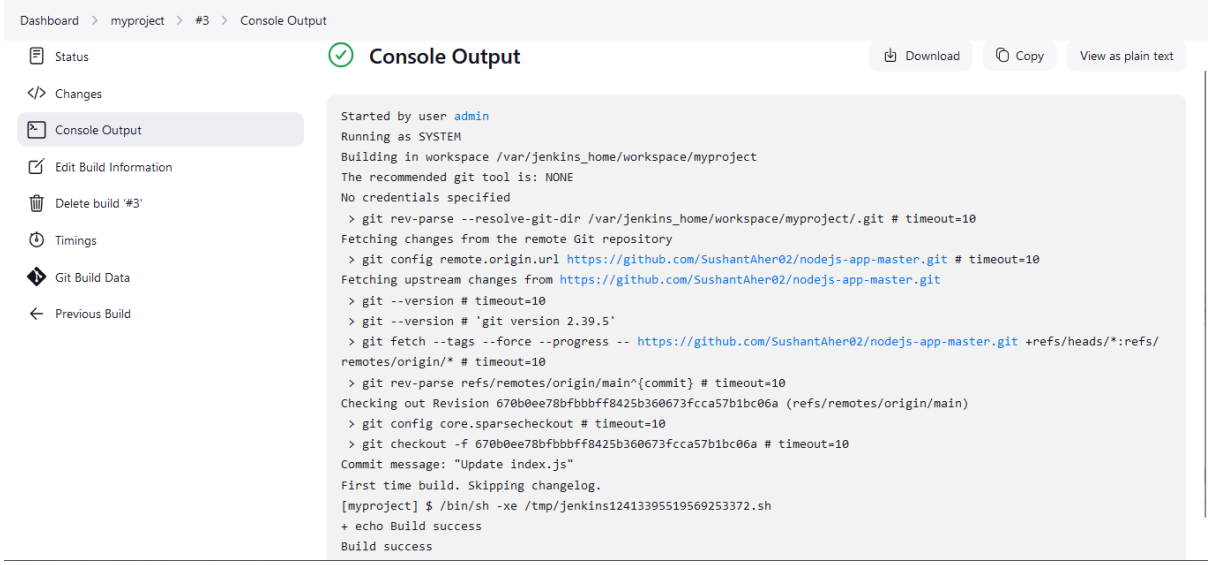




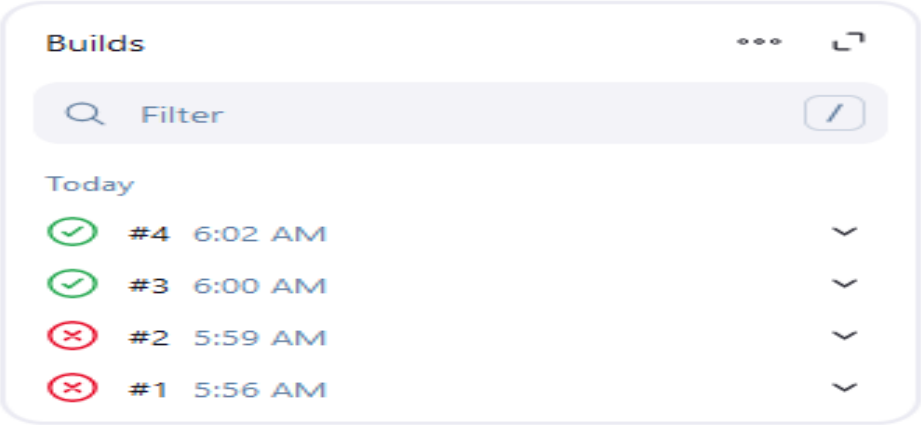
Configuration changes in our Project.



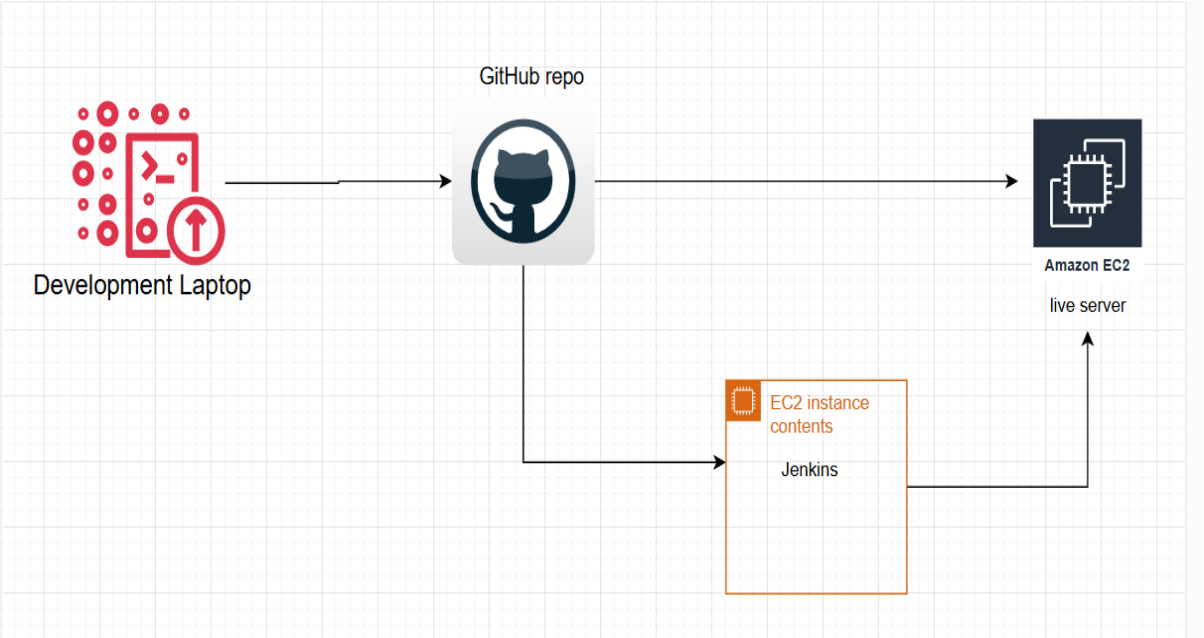
Console Output.



Build Stages.



Update of nodejs with nodejs package



For development laptop

Install git bash for windows

Create folder nodeapp in any drive

Under folder open gitbash here

git inti

git config - - list

git cofig - - global user.name name

git config - -global user.email email

git config - - list

git intit

git remote add origin githubrepo

git pull origin master

ls

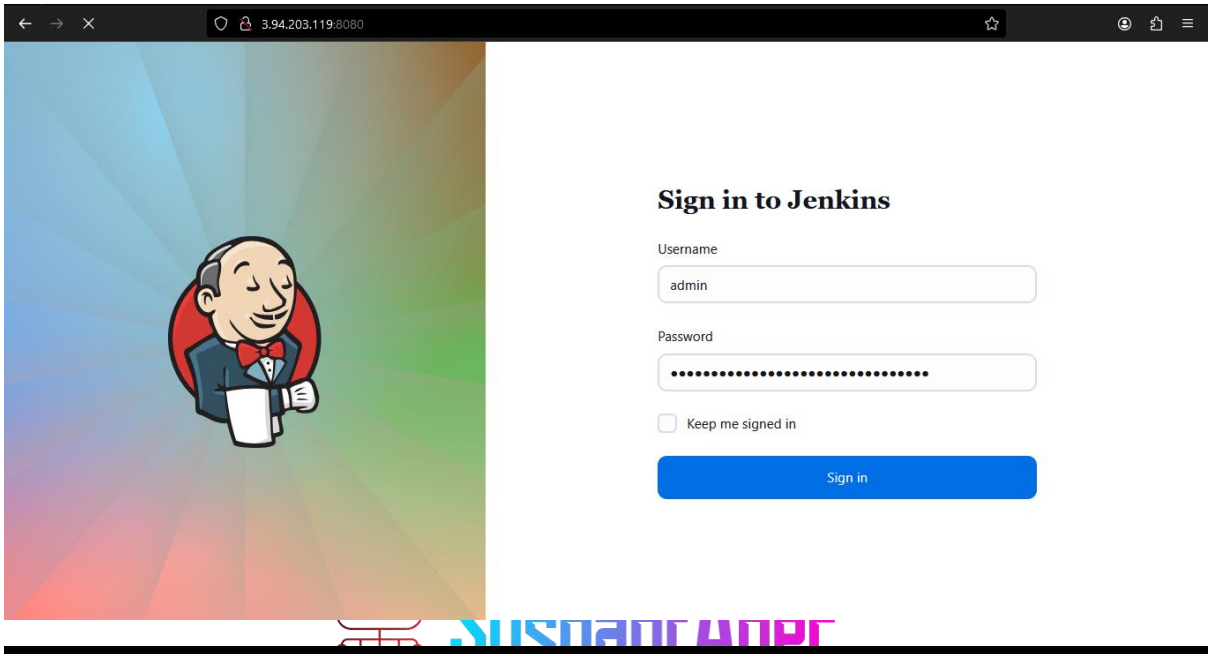
nano index.js

git add .

git commit -m “changecommit”

git status

git push origin master




```
91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp
$ git config --global user.name SushantAher02

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp
$ git config --global user.email ahersushant222@gmail.com
```

```
91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp
$ git config --list
diff.astextplain.textconv=astextplain
filter.lfs.clean=git-lfs clean -- %f
filter.lfs.smudge=git-lfs smudge -- %f
filter.lfs.process=git-lfs filter-process
filter.lfs.required=true
http.sslbackend=openssl
http.sslcainfo=D:/Git Bash/Git/mingw64/etc/ssl/certs/ca-bundle.crt
core.autocrlf=true
core.fscache=true
core.symlinks=false
pull.rebase=false
credential.helper=manager
credential.https://dev.azure.com.usehttppath=true
init.defaultbranch=master
filter.lfs.process=git-lfs filter-process
filter.lfs.required=true
filter.lfs.clean=git-lfs clean -- %f
filter.lfs.smudge=git-lfs smudge -- %f
user.name=SushantAher02
user.email=ahersushant222@gmail.com
```

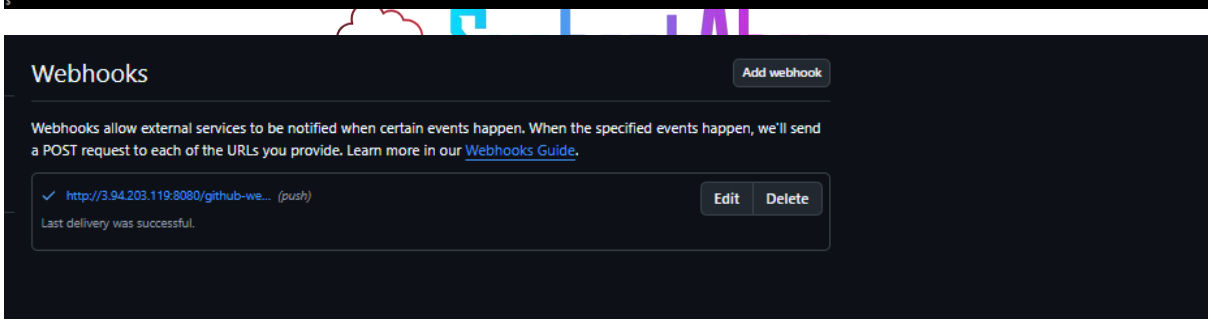
```
91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp
$ git init
Initialized empty Git repository in D:/FCT/DevOps/jenkin/Jenkin/nodeapp/.git/
```

```
91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ git init
Reinitialized existing Git repository in D:/FCT/DevOps/jenkin/Jenkin/nodeapp/.git/

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ git remote add origin https://github.com/SushantAher02/nodejs-app-master.git
```

```
91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ git pull origin main
remote: Enumerating objects: 15, done.
remote: Counting objects: 100% (15/15), done.
remote: Compressing objects: 100% (11/11), done.
remote: Total 15 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (15/15), 3.61 KiB | 42.00 KiB/s, done.
From https://github.com/SushantAher02/nodejs-app-master
 * branch            main       -> FETCH_HEAD
 * [new branch]      main       -> origin/main

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ ls
nodejs-app-master/
```

```
MINGW64:/d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master
  GNU nano 8.2                                   index.js                                   Modified
var express = require('express');

var app = express();//Respond with "hello world" for requests that hit our root "/"
app.get('/', function (req, res) {
 res.send('hiiii guys   ');
});//listen to port 3000 by default
app.listen(process.env.PORT || 3000);

module.exports = app;
```

```
91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master (master)
$ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   index.js

no changes added to commit (use "git add" and/or "git commit -a")

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master (master)
$ git add .

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   index.js


91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master (master)
$ git commit -m "commitmeassge5"
[master b7f57b6] commitmeassge5
 1 file changed, 1 insertion(+), 1 deletion(-)

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master (master)
$ git status
On branch master
nothing to commit, working tree clean

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master (master)
$
```



Build Job

In Jenkin Server

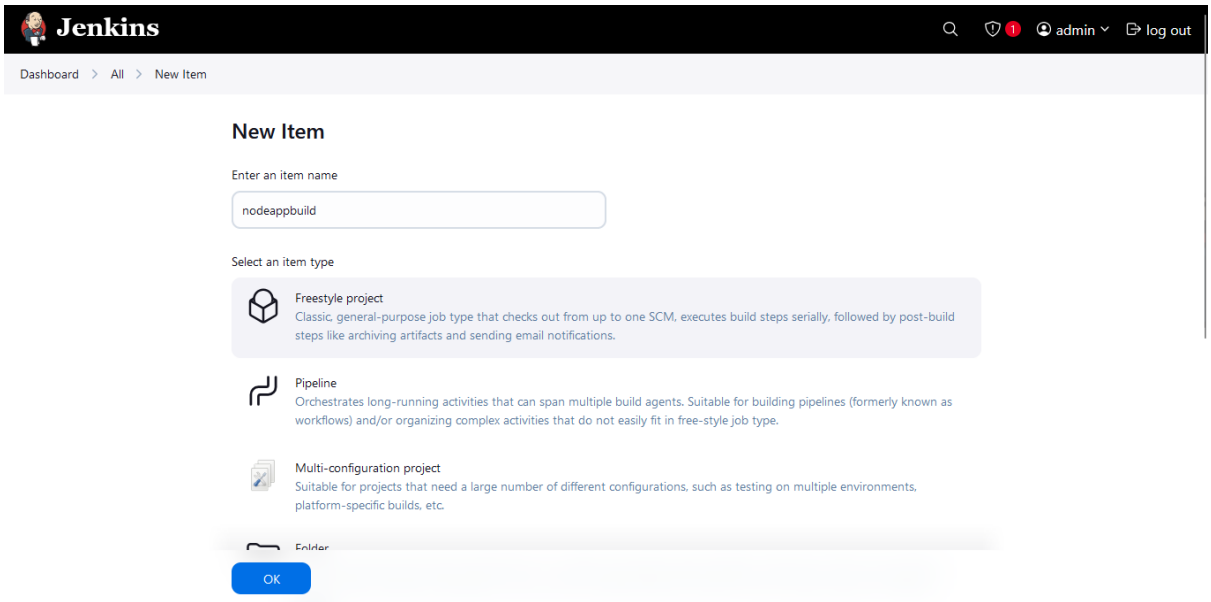
New item

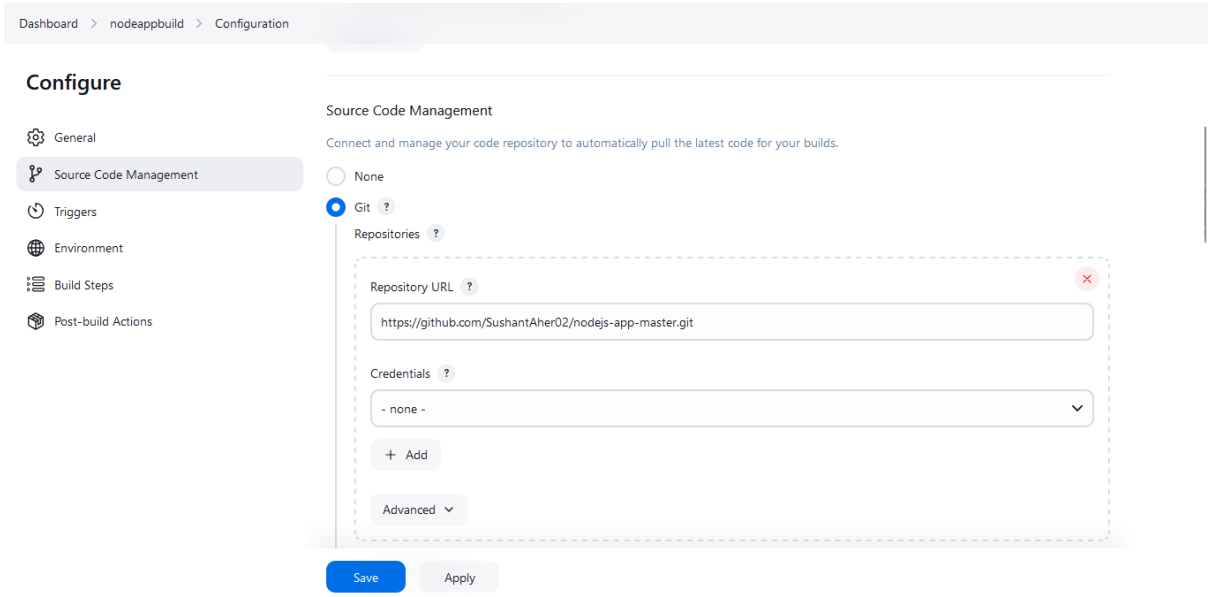
- Name – nodeappbuild
- Freestyle project
- Ok
- Git

- Paste gitrepo url
- Check branch
- Github hook trigger
- #create new webhook in Github repo settings

Build step

- Execute shell
- Echo “build Successfully”
- Save





Dashboard > nodeappbuild > #1 > Console Output

- Console Output
- Edit Build Information
- Delete build '#1'
- Timings
- Git Build Data

```
Started by user admin
Running as SYSTEM
Building in workspace /var/jenkins_home/workspace/nodeappbuild
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/SushantAher02/nodejs-app-master.git
 > git init /var/jenkins_home/workspace/nodeappbuild # timeout=10
Fetching upstream changes from https://github.com/SushantAher02/nodejs-app-master.git
 > git --version # timeout=10
 > git --version # 'git version 2.39.5'
 > git fetch --tags --force --progress -- https://github.com/SushantAher02/nodejs-app-master.git +refs/heads/*:refs/
remotes/origin/* # timeout=10
 > git config remote.origin.url https://github.com/SushantAher02/nodejs-app-master.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 b7f57b67573a9245cba73be9d96b02680954ded9 (refs/remotes/origin/master)
 > git config core.sparsecheckout # timeout=10
 > git checkout -f b7f57b67573a9245cba73be9d96b02680954ded9 # timeout=10
Commit message: "commitmeassge5"
First time build. Skipping changelog.
[nodeappbuild] $ /bin/sh -xe /tmp/jenkins9177452741004161031.sh
+ echo Build SuccessFull
Build SuccessFull
Finished: SUCCESS
```

3.94.203.119

Edit index.js

git add .

git commit -m “againcommit”

git push origin master

MINGW64:/d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master

```
GNU nano 8.2                    index.js                    Modified
var express = require('express');

var app = express();//Respond with "hello world" for requests that hit our root "/"
app.get('/', function (req, res) {
 res.send('hiiii guys  edited message   ');
});//listen to port 3000 by default
app.listen(process.env.PORT || 3000);

module.exports = app;
```

Dashboard > nodeappbuild >

- Status
- Changes
- Workspace
- Build Now
- Configure
- Delete Project
- GitHub Hook Log
- Rename

Builds

Filter /

Today

#2 9:56 AM

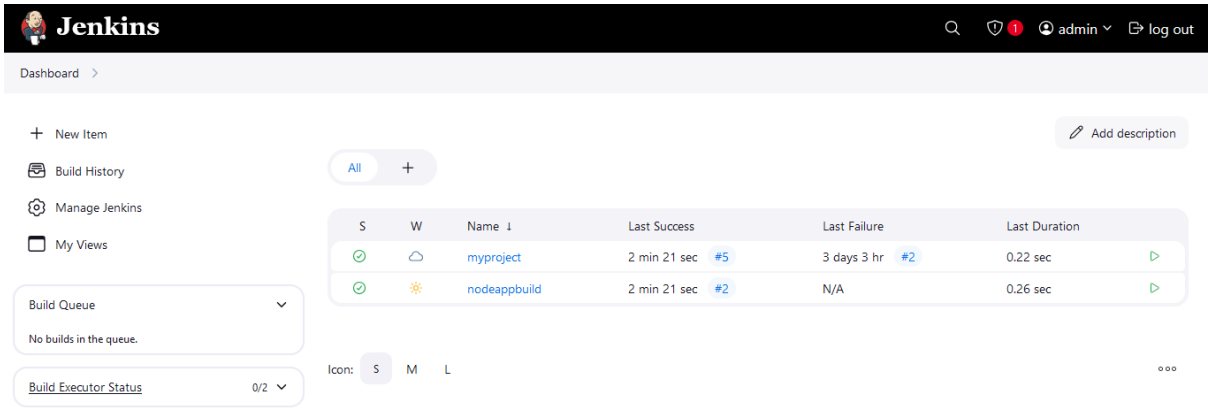
#1 9:53 AM

nodeappbuild

Add description

Permalinks

- Last build (#2), 19 sec ago
- Last stable build (#2), 19 sec ago
- Last successful build (#2), 19 sec ago
- Last completed build (#2), 19 sec ago



Manage jenkin

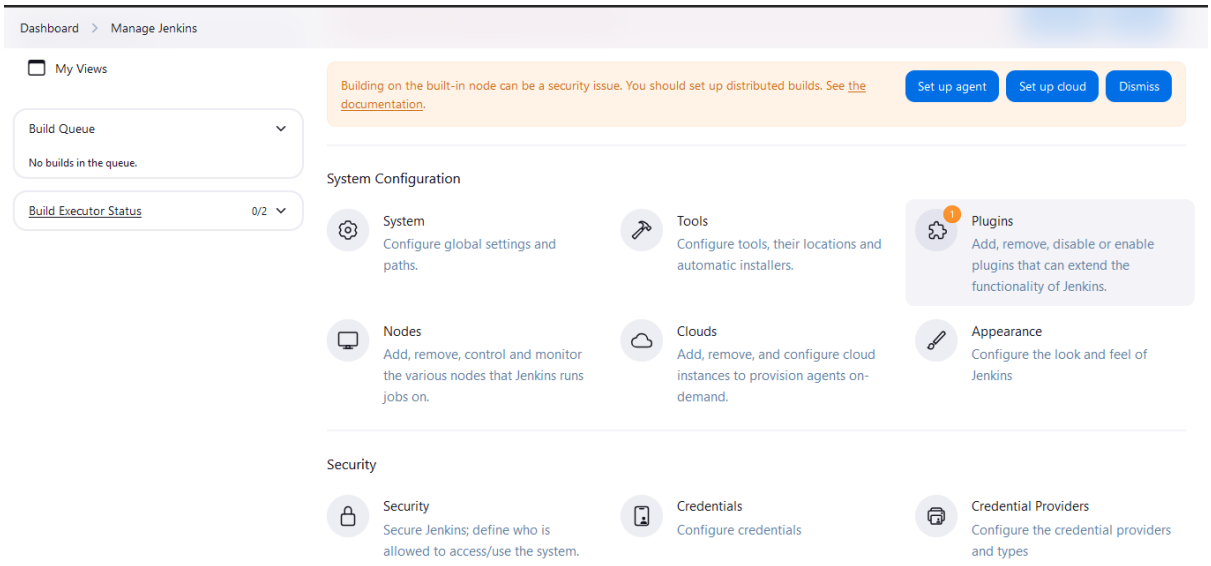
- Plugins
- Available plugins
- Nodejs
- Select
- Install
- Tool
- Nodejs installation
- Add nodejs
- Nodejs 18.0.0
- Name – mynode
- Save

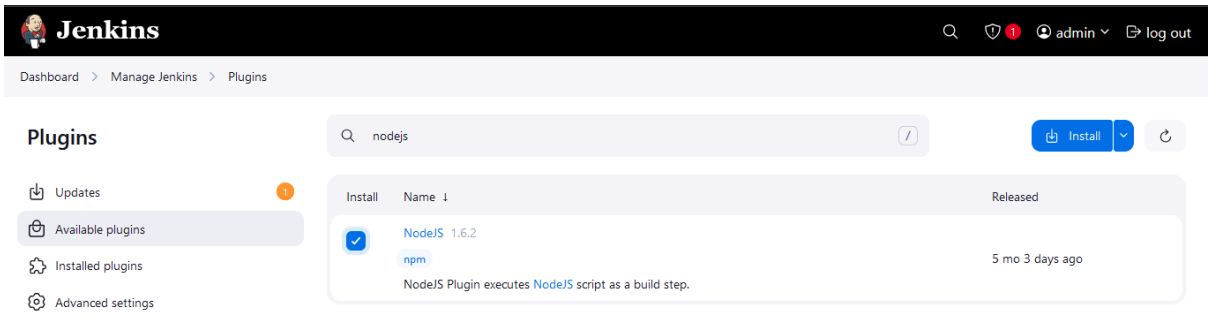
Dashboard

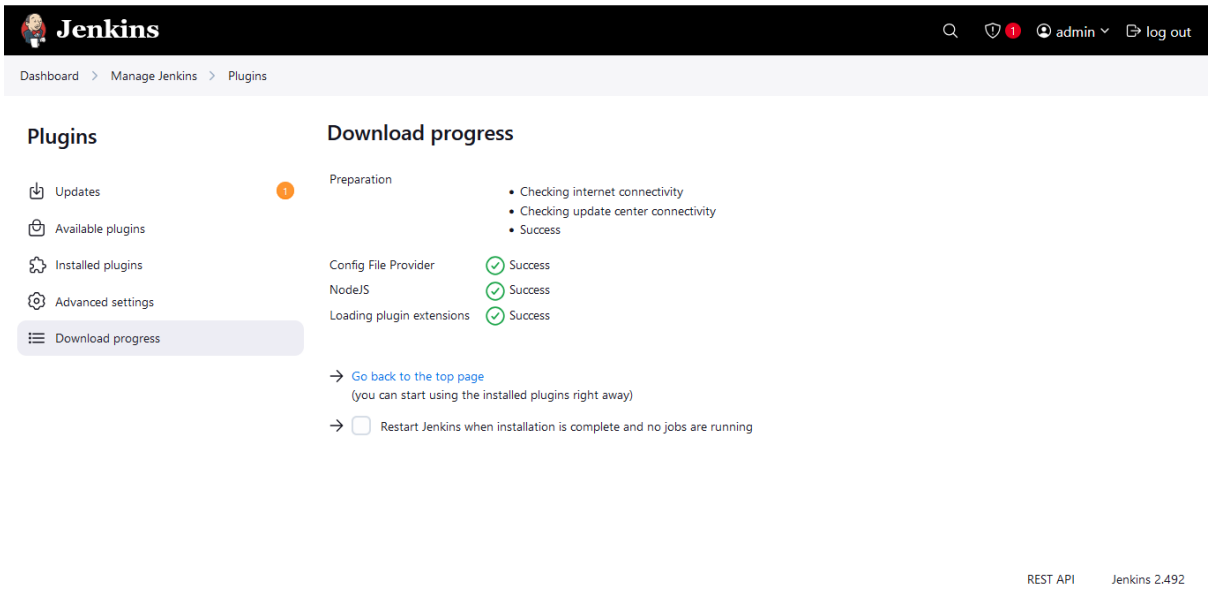
- Nodeappbuild enter
- Configure
- Environment
- Provide node and npm bin/folder to PATH
- Select name
- Execute shell

  Npm install

- Save


Dashboard > Manage Jenkins
My Views
Build Queue
No builds in the queue.
Build Executor Status 0/2
Building on the built-in node can be a security issue. You should set up distributed builds. See the documentation.
Set up agent
Set up cloud
Dismiss
System Configuration
System
Configure global settings and paths.
Tools
Configure tools, their locations and automatic installers.
Plugins
Add, remove, disable or enable plugins that can extend the functionality of Jenkins.
Nodes
Add, remove, control and monitor the various nodes that Jenkins runs jobs on.
Clouds
Add, remove, and configure cloud instances to provision agents on-demand.
Appearance
Configure the look and feel of Jenkins
Security
Security
Secure Jenkins; define who is allowed to access/use the system.
Credentials
Configure credentials
Credential Providers
Configure the credential providers and types


Jenkins
admin
log out
Dashboard > Manage Jenkins > Plugins
Plugins
Updates
Available plugins
Installed plugins
Advanced settings
nodejs
Install
Install
Name
Released
NodeJS 1.6.2
npm
NodeJS Plugin executes NodeJS script as a build step.
5 mo 3 days ago


Jenkins
admin
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
Config File Provider
Success
NodeJS
Success
Loading plugin extensions
Success
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 2.492

Dashboard > Manage Jenkins > Tools

NodeJS installations

Add NodeJS

NodeJS

Name

mynode

Install automatically

Install from nodejs.org

Version

NodeJS 18.0.0

For the underlying architecture, if available, force the installation of the 32bit package. Otherwise the build will fail

Force 32bit architecture

Save Apply

Environment

Configure settings and variables that define the context in which your build runs, like credentials, paths, and global parameters.

- [ ] Delete workspace before build starts
- [ ] Use secret text(s) or file(s)
- [ ] Provide Configuration files
- [ ] Add timestamps to the Console Output
- [ ] Inspect build log for published build scans
- [x] Provide Node & npm bin/ folder to PATH

NodeJS Installation

Specify needed nodejs installation where npm installed packages will be provided to the PATH

mynode

npmrc file

- use system default -

Cache location

Default (~/.npm or %APP_DATA%\npm-cache)

Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

Execute shell

Command

See the list of available environment variables

```
npm install
```

Git add .

Git commit -m “third commit”

Git push origin master

```
MINGW64:/d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master
  GNU nano 8.2                    index.js                    Modified
var express = require('express');

var app = express();//Respond with "hello world" for requests that hit our root "/"
app.get('/', function (req, res) {
 res.send('hiiii guys  edited message  this is 7th time edited file ');
});//listen to port 3000 by default
app.listen(process.env.PORT || 3000);

module.exports = app;
```

```
91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master (master)
$ nano index.js

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master (master)
$ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   index.js

no changes added to commit (use "git add" and/or "git commit -a")

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master (master)
$ git add .

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master (master)
$ git commit -m "commitmessage7"
[master b46e24c] commitmessage7
 1 file changed, 1 insertion(+), 1 deletion(-)

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master (master)
$ git push origin master
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (4/4), 423 bytes | 211.00 KiB/s, done.
Total 4 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/SushantAher02/nodejs-app-master.git
   9fea136..b46e24c  master -> master

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp/nodejs-app-master (master)
$ |
```

Jenkins admin log out

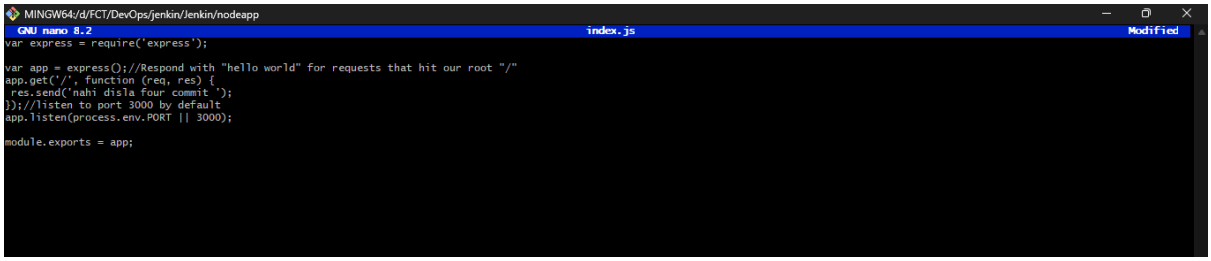
Dashboard > nodeappbuild2 > #3 > Console Output

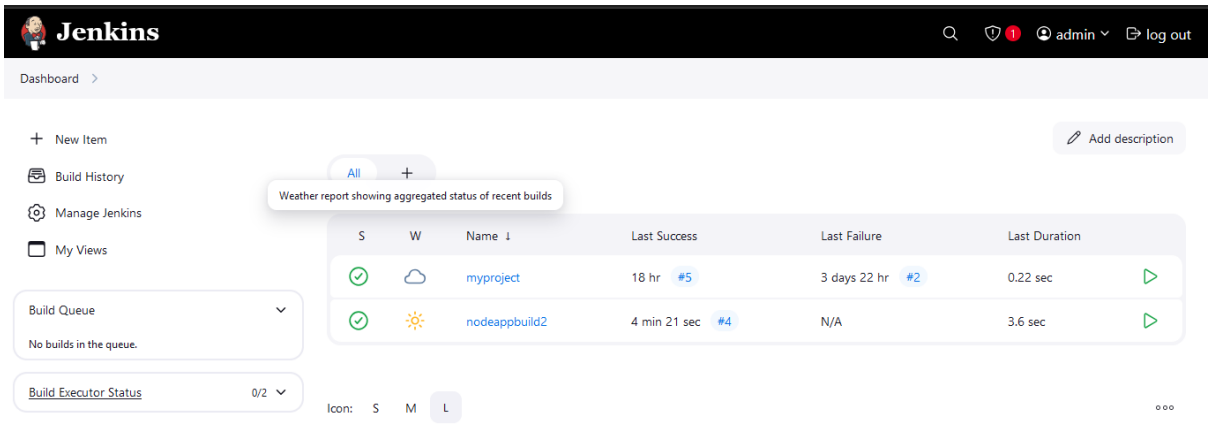
- Status
- Changes
- Console Output
- Edit Build Information
- Delete build '#3'
- Polling Log
- Timings
- Git Build Data
- Previous Build

Console Output

Download Copy View as plain text

```
Started by GitHub push by SushantAher02
Running as SYSTEM
Building in workspace /var/jenkins_home/workspace/nodeappbuild2
The recommended git tool is: NONE
No credentials specified
 > git rev-parse --resolve-git-dir /var/jenkins_home/workspace/nodeappbuild2/.git # timeout=10
Fetching changes from the remote Git repository
 > git config remote.origin.url https://github.com/SushantAher02/nodeappjenkin.git # timeout=10
Fetching upstream changes from https://github.com/SushantAher02/nodeappjenkin.git
 > git --version # timeout=10
 > git --version # 'git version 2.39.5'
 > git fetch --tags --force --progress -- https://github.com/SushantAher02/nodeappjenkin.git +refs/heads/*:refs/
remotes/origin/* # timeout=10
 > git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision 2c344f3c37ed5f0436449fd83c3375c57469dcf7 (refs/remotes/origin/master)
 > git config core.sparsecheckout # timeout=10
 > git checkout -f 2c344f3c37ed5f0436449fd83c3375c57469dcf7 # timeout=10
Commit message: "thirdcommit"
 > git rev-list --no-walk aa6f4c574521a0a7e15e5a7c54224b6faff547e4 # timeout=10
[nodeappbuild2] $ /bin/sh -xe /tmp/jenkins13589015717494311082.sh
+ npm install
```

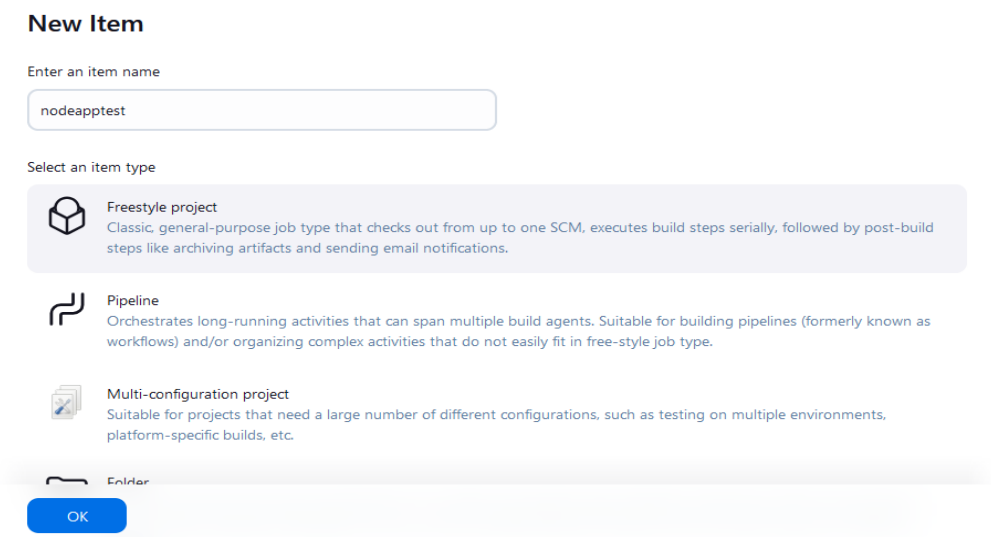




Test Job

SushantAher

- New item name - - nodeapptest
- Paster git repo
- Trigger – build after other project are built project name
- Build step – execute shell npm instal ./node_modules/mocha/bin/_mocha - - exit ./test/test.js
- Environment – provide node and npm bin/folder to PATH
- Edit some code and Push to Github test nodeapptest



Dashboard > nodeapptest > Configuration

Configure

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

Triggers

Set up automated actions that start your build based on specific events, like code changes or scheduled times.

- [ ] Trigger builds remotely (e.g., from scripts) ?
- [x] Build after other projects are built ?

Projects to watch

nodeappbuild2,

- (•) Trigger only if build is stable
- ( ) Trigger even if the build is unstable
- ( ) Trigger even if the build fails
- ( ) Always trigger, even if the build is aborted

- [ ] Build periodically ?
- [ ] GitHub hook trigger for GITScm polling ?
- [ ] Poll SCM ?

Environment

Save Apply

Environment

Configure settings and variables that define the context in which your build runs, like credentials, paths, and global parameters.

- [ ] Delete workspace before build starts
- [ ] Use secret text(s) or file(s) ?
- [ ] Provide Configuration files ?
- [ ] Add timestamps to the Console Output
- [ ] Inspect build log for published build scans
- [x] Provide Node & npm bin/ folder to PATH

NodeJS Installation

Specify needed nodejs installation where npm installed packages will be provided to the PATH

mynode

npmrc file

- use system default -

Cache location

Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

Execute shell ?

Command

See the list of available environment variables

```
npm install
./node_modules/mocha/bin/_mocha --exit ./test/test.js
```

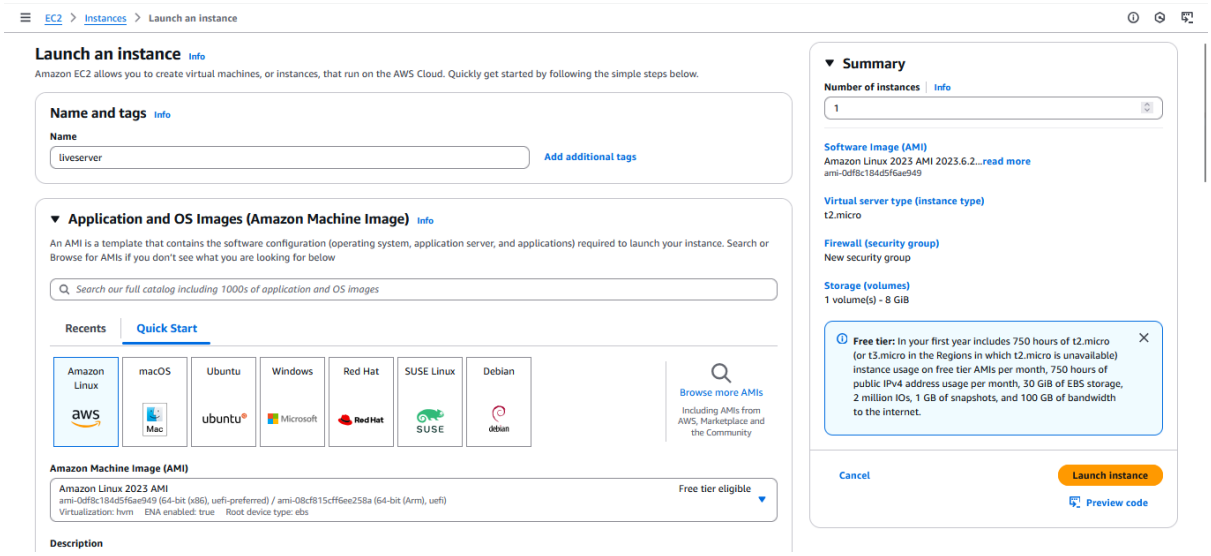
Advanced

Add build step

Dashboard > nodeapptest > #1 > Console Output

```
npm WARN deprecated connect@2.21.0: connect 2.x series is deprecated

added 197 packages, and audited 198 packages in 5s

34 packages are looking for funding
  run `npm fund` for details

33 vulnerabilities (2 low, 4 moderate, 23 high, 4 critical)

To address issues that do not require attention, run:
  npm audit fix

To address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
+ ./node_modules/mocha/bin/_mocha --exit ./test/test.js


  GET /
    ✓ respond with 404 page not found


  1 passing (22ms)

Finished: SUCCESS
```

Setup Live Server




```
[ec2-user@ip-172-31-30-60 ~]$ #liveserver
[ec2-user@ip-172-31-30-60 ~]$ sudo yum install nodejs
Last metadata expiration check: 0:00:18 ago on Fri Jan 17 03:37:37 2025.
Dependencies resolved.
=================================================================================================================================
 Package                        Architecture            Version                                    Repository                Size
=================================================================================================================================
Installing:
 nodejs                         x86_64                  1:18.20.5-1.amzn2023.0.1                   amazonlinux               13 M
Installing dependencies:
 libbrotli                      x86_64                  1.0.9-4.amzn2023.0.2                       amazonlinux              315 k
 nodejs-libs                    x86_64                  1:18.20.5-1.amzn2023.0.1                   amazonlinux               14 M
Installing weak dependencies:
 nodejs-docs                    noarch                  1:18.20.5-1.amzn2023.0.1                   amazonlinux              7.8 M
 nodejs-full-i18n               x86_64                  1:18.20.5-1.amzn2023.0.1                   amazonlinux              8.4 M
 nodejs-npm                     x86_64                  1:10.8.2-1.18.20.5.1.amzn2023.0.1          amazonlinux              1.9 M

Transaction Summary
=================================================================================================================================
Install  6 Packages

Total download size: 45 M
Installed size: 224 M
Is this ok [y/N]: y
Downloading Packages:
(1/6): libbrotli-1.0.9-4.amzn2023.0.2.x86_64.rpm                                   5.7 MB/s | 315 kB     00:00
(2/6): nodejs-full-i18n-18.20.5-1.amzn2023.0.1.x86_64.rpm                           40 MB/s | 8.4 MB     00:00
(3/6): nodejs-docs-18.20.5-1.amzn2023.0.1.noarch.rpm                                14 MB/s | 7.8 MB     00:00
(4/6): nodejs-18.20.5-1.amzn2023.0.1.x86_64.rpm                                     17 MB/s |  13 MB     00:00
(5/6): nodejs-npm-10.8.2-1.18.20.5.1.amzn2023.0.1.x86_64.rpm                       7.6 MB/s | 1.9 MB     00:00
(6/6): nodejs-libs-18.20.5-1.amzn2023.0.1.x86_64.rpm                                23 MB/s |  14 MB     00:00
---------------------------------------------------------------------------------------------------------------------------------
Total                                                                               50 MB/s |  45 MB     00:00
```

```
[ec2-user@ip-172-31-30-60 ~]$ node -v
v18.20.5
[ec2-user@ip-172-31-30-60 ~]$ sudo yum install git
Last metadata expiration check: 0:01:13 ago on Fri Jan 17 03:37:37 2025.
Dependencies resolved.
================================================================================================================================
 Package                        Architecture        Version                                Repository                     Size
================================================================================================================================
Installing:
 git                            x86_64              2.40.1-1.amzn2023.0.3                  amazonlinux                    54 k
Installing dependencies:
 git-core                       x86_64              2.40.1-1.amzn2023.0.3                  amazonlinux                   4.3 M
 git-core-doc                   noarch              2.40.1-1.amzn2023.0.3                  amazonlinux                   2.6 M
 perl-Error                     noarch              1:0.17029-5.amzn2023.0.2               amazonlinux                    41 k
 perl-File-Find                 noarch              1.37-477.amzn2023.0.6                  amazonlinux                    26 k
 perl-Git                       noarch              2.40.1-1.amzn2023.0.3                  amazonlinux                    42 k
 perl-TermReadKey               x86_64              2.38-9.amzn2023.0.2                    amazonlinux                    36 k
 perl-lib                       x86_64              0.65-477.amzn2023.0.6                  amazonlinux                    15 k

Transaction Summary
================================================================================================================================
Install  8 Packages

Total download size: 7.1 M
Installed size: 34 M
Is this ok [y/N]: y
Downloading Packages:
(1/8): git-2.40.1-1.amzn2023.0.3.x86_64.rpm                                      970 kB/s |  54 kB     00:00
(2/8): git-core-doc-2.40.1-1.amzn2023.0.3.noarch.rpm                              34 MB/s | 2.6 MB     00:00
(3/8): perl-Error-0.17029-5.amzn2023.0.2.noarch.rpm                              1.1 MB/s |  41 kB     00:00
(4/8): perl-File-Find-1.37-477.amzn2023.0.6.noarch.rpm                           1.0 MB/s |  26 kB     00:00
(5/8): perl-Git-2.40.1-1.amzn2023.0.3.noarch.rpm                                 1.7 MB/s |  42 kB     00:00
(6/8): perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64.rpm                           1.4 MB/s |  36 kB     00:00
(7/8): git-core-2.40.1-1.amzn2023.0.3.x86_64.rpm                                  25 MB/s | 4.3 MB     00:00
(8/8): perl-lib-0.65-477.amzn2023.0.6.x86_64.rpm                                 354 kB/s |  15 kB     00:00
```

```
[ec2-user@ip-172-31-30-60 ~]$ git clone https://github.com/SushantAher02/nodeappjenkin.git
Cloning into 'nodeappjenkin'...
remote: Enumerating objects: 15, done.
remote: Counting objects: 100% (15/15), done.
remote: Compressing objects: 100% (11/11), done.
remote: Total 15 (delta 3), reused 15 (delta 3), pack-reused 0 (from 0)
Receiving objects: 100% (15/15), done.
Resolving deltas: 100% (3/3), done.
[ec2-user@ip-172-31-30-60 ~]$ ls
nodeappjenkin
[ec2-user@ip-172-31-30-60 ~]$ cd nodeappjenkin
[ec2-user@ip-172-31-30-60 nodeappjenkin]$ ls
index.js  package.json  test
[ec2-user@ip-172-31-30-60 nodeappjenkin]$
```

```
[ec2-user@ip-172-31-30-60 nodeappjenkin]$ npm install
npm warn deprecated inflight@1.0.6: This module is not supported, and leaks memory. Do not use it. Check out lru-cache if you want a good and tested
 way to coalesce async requests by a key value, which is much more comprehensive and powerful.
npm warn deprecated scmp@0.0.3: scmp v2 uses improved core crypto comparison since Node v6.6.0
npm warn deprecated native-or-bluebird@1.1.2: 'native-or-bluebird' is deprecated. Please use 'any-promise' instead.
npm warn deprecated glob@7.2.0: Glob versions prior to v9 are no longer supported
npm warn deprecated mkdirp@0.5.0: Legacy versions of mkdirp are no longer supported. Please update to mkdirp 1.x. (Note that the API surface has cha
nged to use Promises in 1.x.)
npm warn deprecated connect@2.21.0: connect 2.x series is deprecated
npm warn deprecated superagent@8.1.2: Please upgrade to v9.0.0+ as we have fixed a public vulnerability with formidable dependency. Note that v9.0.0
+ requires Node.js v14.18.0+. See https://github.com/ladjs/superagent/pull/1800 for insight. This project is supported and maintained by the team at
 Forward Email @ https://forwardemail.net

added 197 packages, and audited 198 packages in 17s

34 packages are looking for funding
  run `npm fund` for details

33 vulnerabilities (2 low, 4 moderate, 22 high, 5 critical)

To address issues that do not require attention, run:
  npm audit fix

To address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
npm notice
npm notice New major version of npm available! 10.8.2 -> 11.0.0
npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.0.0
npm notice To update run: npm install -g npm@11.0.0
npm notice
[ec2-user@ip-172-31-30-60 nodeappjenkin]$
```

```
[ec2-user@ip-172-31-30-60 nodeappjenkin]$ ls
index.js  node_modules  package-lock.json  package.json  test
[ec2-user@ip-172-31-30-60 nodeappjenkin]$
```

```
[ec2-user@ip-172-31-30-60 nodeappjenkin]$ sudo yum install nginx
Last metadata expiration check: 0:05:02 ago on Fri Jan 17 03:37:37 2025.
Dependencies resolved.
================================================================================================================================
 Package                          Architecture          Version                                  Repository                  Size
================================================================================================================================
Installing:
 nginx                            x86_64                1:1.26.2-1.amzn2023.0.1                  amazonlinux                 33 k
Installing dependencies:
 generic-logos-httpd              noarch                18.0.0-12.amzn2023.0.3                   amazonlinux                 19 k
 gperftools-libs                  x86_64                2.9.1-1.amzn2023.0.3                     amazonlinux                308 k
 libunwind                        x86_64                1.4.0-5.amzn2023.0.2                     amazonlinux                 66 k
 nginx-core                       x86_64                1:1.26.2-1.amzn2023.0.1                  amazonlinux                670 k
 nginx-filesystem                 noarch                1:1.26.2-1.amzn2023.0.1                  amazonlinux                9.9 k
 nginx-mimetypes                  noarch                2.1.49-3.amzn2023.0.3                    amazonlinux                 21 k

Transaction Summary
================================================================================================================================
Install  7 Packages

Total download size: 1.1 M
Installed size: 3.6 M
Is this ok [y/N]: y
Downloading Packages:
(1/7): generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch.rpm                                483 kB/s |  19 kB     00:00
(2/7): gperftools-libs-2.9.1-1.amzn2023.0.3.x86_64.rpm                                      6.3 MB/s | 308 kB     00:00
(3/7): libunwind-1.4.0-5.amzn2023.0.2.x86_64.rpm                                            1.2 MB/s |  66 kB     00:00
(4/7): nginx-1.26.2-1.amzn2023.0.1.x86_64.rpm                                               1.6 MB/s |  33 kB     00:00
(5/7): nginx-filesystem-1.26.2-1.amzn2023.0.1.noarch.rpm                                    300 kB/s | 9.9 kB     00:00
(6/7): nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch.rpm                                     728 kB/s |  21 kB     00:00
(7/7): nginx-core-1.26.2-1.amzn2023.0.1.x86_64.rpm                                           13 MB/s | 670 kB     00:00
--------------------------------------------------------------------------------------------------------------------------------
Total                                                                                       8.0 MB/s | 1.1 MB     00:00
Running transaction check
Transaction check succeeded.
Running transaction test
```

```
  GNU nano 5.8                                  /etc/nginx/nginx.conf                                          Modified

    access_log  /var/log/nginx/access.log  main;

    sendfile            on;
    tcp_nopush          on;
    keepalive_timeout   65;
    types_hash_max_size 4096;

    include             /etc/nginx/mime.types;
    default_type        application/octet-stream;

    # Load modular configuration files from the /etc/nginx/conf.d directory.
    # See http://nginx.org/en/docs/ngx_core_module.html#include
    # for more information.
    include /etc/nginx/conf.d/*.conf;

    server {
        listen       80;
        listen       [::]:80;
        server_name  _;
        root         /usr/share/nginx/html;
        location / {
        proxy_pass http://localhost:3000;
        }
        # Load configuration files for the default server block.
        include /etc/nginx/default.d/*.conf;

        error_page 404 /404.html;
        location = /404.html {
        }

        error_page 500 502 503 504 /50x.html;
        location = /50x.html {
```

```
[ec2-user@ip-172-31-30-60 nodeappjenkin]$ sudo service nginx start
Redirecting to /bin/systemctl start nginx.service
[ec2-user@ip-172-31-30-60 nodeappjenkin]$ sudo nano /etc/nginx/nginx.conf
[ec2-user@ip-172-31-30-60 nodeappjenkin]$ sudo service nginx reload
Redirecting to /bin/systemctl reload nginx.service
[ec2-user@ip-172-31-30-60 nodeappjenkin]$
```

```
[ec2-user@ip-172-31-30-60 nodeappjenkin]$ sudo npm install -g pm2

added 137 packages in 13s

13 packages are looking for funding
  run `npm fund` for details
npm notice
npm notice New major version of npm available! 10.8.2 -> 11.0.0
npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.0.0
npm notice To update run: npm install -g npm@11.0.0
npm notice
[ec2-user@ip-172-31-30-60 nodeappjenkin]$
```

```
[ec2-user@ip-172-31-30-60 nodeappjenkin]$ pm2 start index.js

                        -------------

__/\\\\\\\\\\\\\\____/\\\\____________/\\\\____/\\\\\\\\\_____
 _\/\\\\\\\\\\\\\\\\_\/\\\\\\\\\\\\\\\\_/\\\\\\__/\\\\\\\\\\\\\\\\___
  _\/\\\_______\/\\\_\/\\\//\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\__
   _\/\\\\\\\\\\\\\\\\__\/\\\\\\//\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\___
    _\/\\\\\\\\\\\\\\\\____\/\\\\__\///\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\//_____
     _\/\\\_____________\/\\\____\///_____\/\\\_____/\\\//_______
      _\/\\\_____________\/\\\_____________\/\\\___/\\\/__________
       _\/\\\_____________\/\\\_____________\/\\\__/\\\\\\\\\\\\\\\\_
        _\///______________\///______________\///__\////////////////__


                          Runtime Edition

       PM2 is a Production Process Manager for Node.js applications
                    with a built-in Load Balancer.

               Start and Daemonize any application:
               $ pm2 start app.js

               Load Balance 4 instances of api.js:
               $ pm2 start api.js -i 4

               Monitor in production:
               $ pm2 monitor

               Make pm2 auto-boot at server restart:
               $ pm2 startup

               To go further checkout:
```

SushantAher

Deploy Job

New item

Name - - nodeappdeploy

Freestyle project

Git - paste url

Trigger – build after another project are built

Environment - provide node and npm

build step - execute shell script on remote host using shell

command cd /nodejsapp

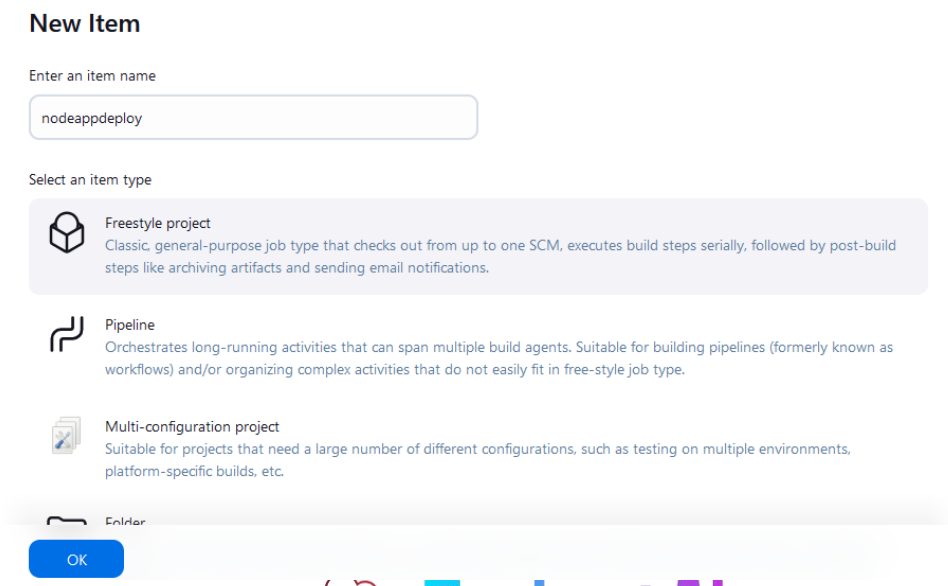
git pull origin master

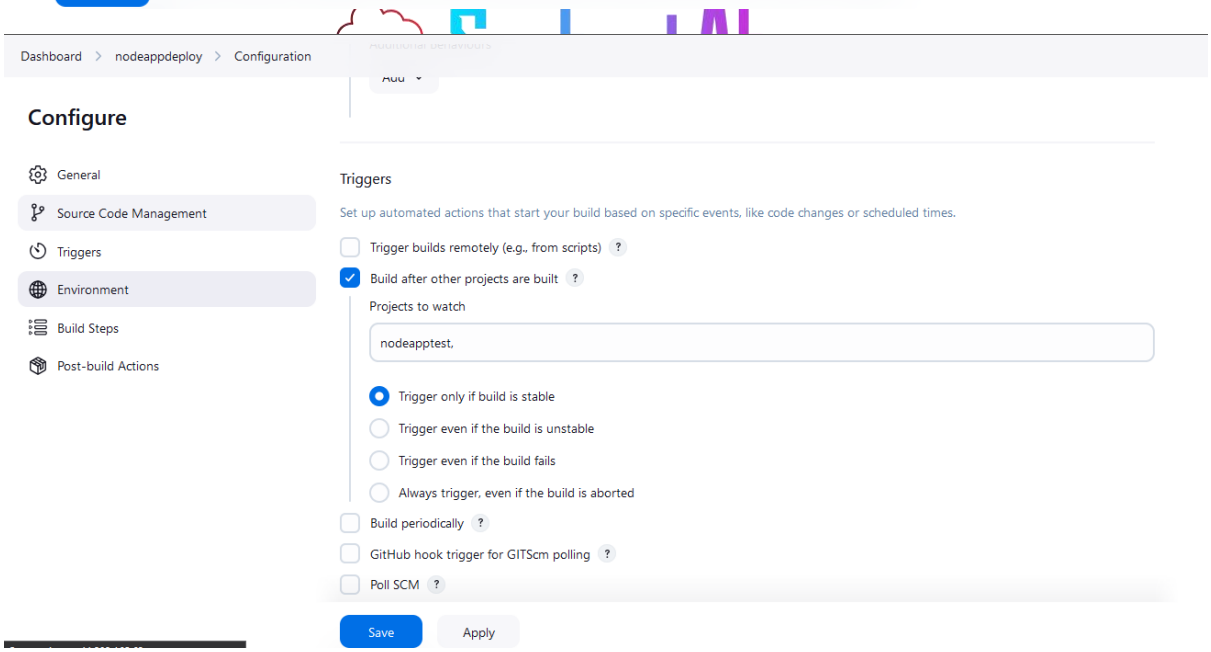
npm install

pm2 restart index.js

build now

changed some code in Development laptop and Test pipeline





Jenkins admin log out

Dashboard > Manage Jenkins > Plugins

Plugins

- Updates 16
- Available plugins
- Installed plugins
- Advanced settings

ssh

Install

Install	Name ↓	Released
☑	SSH 158.ve2a_e90fb_7319 Build Wrappers This plugin executes shell commands remotely using SSH protocol. Warning: This plugin version may not be safe to use. Please review the following security notices: • CSRF vulnerability and missing permission checks allow capturing credentials • Missing permission check allows enumerating credentials IDs	1 mo 29 days ago

Jenkins admin log out

Dashboard > Manage Jenkins > Plugins

Plugins

- Updates 16
- Available plugins
- Installed plugins
- Advanced settings
- Download progress

Download progress

Preparation
- Checking internet connectivity
- Checking update center connectivity
- Success

JSch dependency	Success
SSH	Success
Loading plugin extensions	Success

→ 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

Dashboard > Manage Jenkins > System >

SSH remote hosts

SSH sites

SSH sites that projects will want to connect

Hostname ?

54.144.103.231

Port ?

22

Credentials

- none -

+ Add

☐ Pty ?

serverAliveInterval ?

Dashboard > Manage Jenkins > System >

22

Credentials

ec2-user

+ Add

Pty ?

serverAliveInterval ?

timeout ?

Successfull connection

Check connection

Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

Execute shell script on remote host using ssh

SSH site

ec2-user@54.144.103.231:22

SSH Site not specified

Command

```
cd /home/ec2-user/nodeappjenkin
git pull origin master
npm install
pm2 restart index.js
```

Execute each line ?

Dashboard > nodeappdeploy > #1 > Console Output

```
To address issues that do not require attention, run:
  npm audit fix

To address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
Use --update-env to update environment variables
[PM2] Applying action restartProcessId on app [index.js](ids: [ 0 ])
[PM2] [index](0) ✓
┌────┬──────────┬─────────────┬─────────┬───────┬──────────┬────────┬────┬───────────┬──────────┬──────────┬──
```

```
MINGW64:/d/FCT/DevOps/jenkin/Jenkin/nodeapp
  GNU nano 8.2                          index.js                          Modified
var express = require('express');

var app = express();//Respond with "hello world" for requests that hit our root "/"
app.get('/', function (req, res) {
 res.send('Final CICD pipeline for nodejs app ');
});//listen to port 3000 by default
app.listen(process.env.PORT || 3000);

module.exports = app;
```

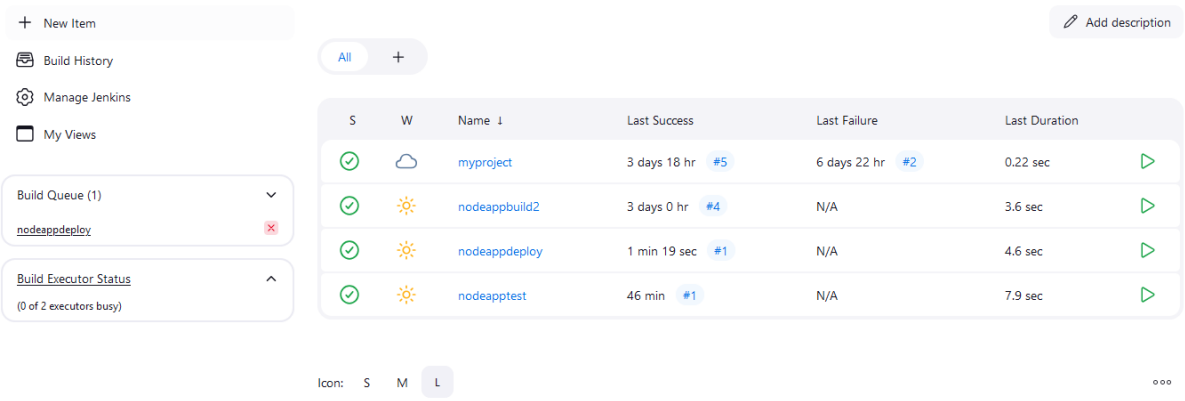
```
91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ ls
index.js  package.json  test/

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ nano index.js

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ git add .
warning: in the working copy of 'index.js', LF will be replaced by CRLF the next time Git touches it

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ git staus
git: 'staus' is not a git command. See 'git --help'.

The most similar command is
        status

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   index.js


91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ git commit -m "finalcicdpipeline"
[master 5ef8084] finalcicdpipeline
 1 file changed, 1 insertion(+), 1 deletion(-)

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ git push origin master
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 374 bytes | 374.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/SushantAher02/nodeappjenkin.git
   886022c..5ef8084  master -> master

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$
```

54.144.103.231

Final CICD pipeline for nodejs app

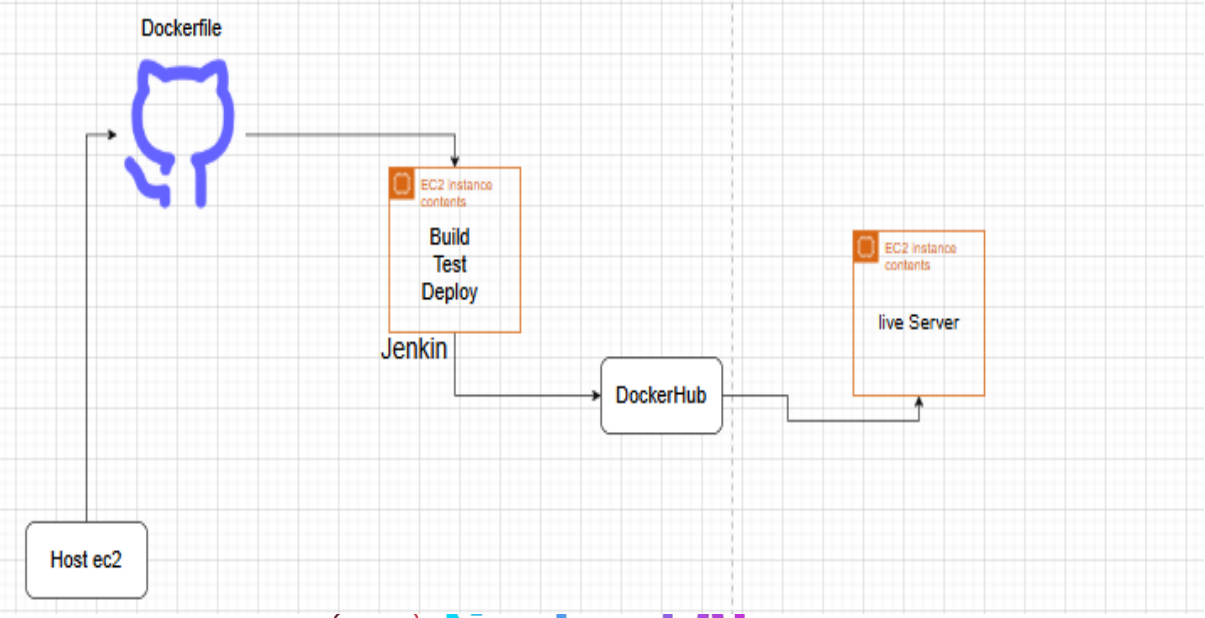
```
MINGW64:/d/FCT/DevOps/jenkin/Jenkin/nodeapp
  GNU nano 8.2                          index.js                          Modified
var express = require('express');

var app = express();//Respond with "hello world" for requests that hit our root "/"
app.get('/', function (req, res) {
 res.send('Final CICD pipeline for nodejs app i am happy this works');
});//listen to port 3000 by default
app.listen(process.env.PORT || 3000);

module.exports = app;
```

```
91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ nano index.js

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ git add .
warning: in the working copy of 'index.js', LF will be replaced by CRLF the next time Git touches it

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ git commit -m "finalcicdpipeline2"
[master 0519127] finalcicdpipeline2
 1 file changed, 1 insertion(+), 1 deletion(-)

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$ git push origin master
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 364 bytes | 364.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/SushantAher02/nodeappjenkin.git
   5ef8084..0519127  master -> master

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/nodeapp (master)
$
```



Final CICD pipeline for nodejs app i am happy this works

Docker NodeJS Jenkins



Sushant Aher

Create folder in our local laptop - - development laptop

git push All code to GitHub

sudo chmod 666 /var/run/docker.sock

docker run -d --name jenkins -v /home/ec2-user/jenkinsvolume:/var/jenkins_home -v /var/run/docker.sock:/var/run/docker.sock -v /usr/bin/docker:/usr/bin/docker -p 8080:8080 jenkins/jenkins:lts

Dockernodebuild

freestyle project

Create Webhook in Github

Add git repo

Trigger - - github hook trigger

Manage Jenkins - - Available plugin - - docker pipeline and docker_build_step and docker Install

```
91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/dockernodeapp (master)
$ git add .
warning: in the working copy of 'Dockerfile', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'index.js', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'package.json', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'test/dockertest', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'test/test.js', LF will be replaced by CRLF the next time Git touches it

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/dockernodeapp (master)
$ git commit -m "firstcommit"
[master (root-commit) 994a8e9] firstcommit
 5 files changed, 83 insertions(+)
 create mode 100644 Dockerfile
 create mode 100644 index.js
 create mode 100644 package.json
 create mode 100644 test/dockertest
 create mode 100644 test/test.js

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/dockernodeapp (master)
$ git status
On branch master
nothing to commit, working tree clean

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/dockernodeapp (master)
$ git push origin master
Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 8 threads
Compressing objects: 100% (8/8), done.
Writing objects: 100% (8/8), 1.58 KiB | 270.00 KiB/s, done.
Total 8 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/SushantAher02/dockernodejenkin.git
 * [new branch]      master -> master

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/dockernodeapp (master)
$
```

New Item

Enter an item name

dockernodebuild

Select an item type

Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

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

OK

Webhooks

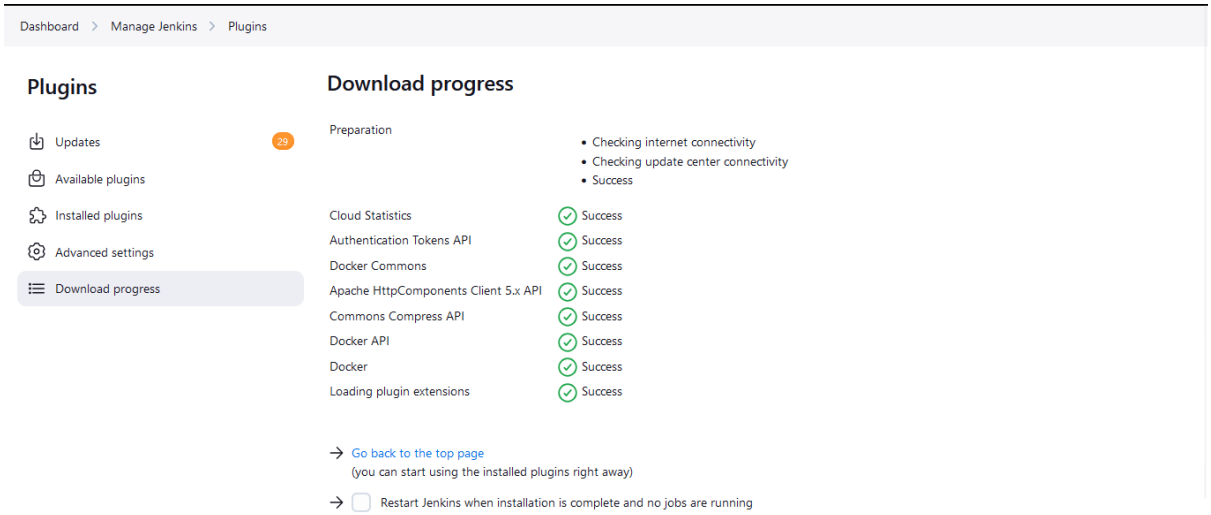
Add webhook

Webhooks allow external services to be notified when certain events happen. When the specified events happen, we'll send a POST request to each of the URLs you provide. Learn more in our Webhooks Guide.

✓ http://18.205.114.155:8080/github-... *(push)*

Last delivery was successful.

Edit | Delete




```
[root@ip-172-31-88-122 ec2-user]# sudo chmod 666 /var/run/docker.sock
[root@ip-172-31-88-122 ec2-user]#
```

```
[root@ip-172-31-88-122 ec2-user]# docker run -d --name jenkins -v /home/ec2-user/jenkinvolume:/var/jenkins_home -v /var/run/docker.sock:/var/run/doc
ker.sock -v /usr/bin/docker:/usr/bin/docker -p8080:8080 jenkins/jenkins:lts
Unable to find image 'jenkins/jenkins:lts' locally
lts: Pulling from jenkins/jenkins
0a96bdb82805: Already exists
b5e2db483aae: Pull complete
72b137db2cdf: Pull complete
d0aac1e9e20c: Pull complete
c48e3974586c: Pull complete
d281eadf0ae3: Pull complete
be47ab5dc59d: Pull complete
c09c222384de: Pull complete
a91f2a3bb141: Pull complete
1a17773e6697: Pull complete
b535e1c5efef: Pull complete
3cfa79b75794: Pull complete
Digest: sha256:dc56634cc8fa476f36eba16d7db6c6bc1f5e3c7062432256738a008a339ee95c
Status: Downloaded newer image for jenkins/jenkins:lts
2c7d7ede1c09ab4e6194c52ccfcca59d36332509454e27841dc30a8d1bbfad3b
[root@ip-172-31-88-122 ec2-user]#
```

```
root@ip-172-31-88-122:/home
GNU nano 5.8                    /etc/sudoers                    Modified

## Next comes the main part: which users can run what software on
## which machines (the sudoers file can be shared between multiple
## systems).
## Syntax:
##
##      user    MACHINE=COMMANDS
##
## The COMMANDS section may have other options added to it.
##
## Allow root to run any commands anywhere
root    ALL=(ALL)       ALL

## Allows members of the 'sys' group to run networking, software,
## service management apps and more.
# %sys ALL = NETWORKING, SOFTWARE, SERVICES, STORAGE, DELEGATING, PROCESSES, LOCATE, DRIVERS

## Allows people in group wheel to run all commands
%wheel  ALL=(ALL)       ALL

## Same thing without a password
# %wheel        ALL=(ALL)       NOPASSWD: ALL

## Allows members of the users group to mount and unmount the
## cdrom as root
# %users  ALL=/sbin/mount /mnt/cdrom, /sbin/umount /mnt/cdrom

## Allows members of the users group to shutdown this system
# %users  localhost=/sbin/shutdown -h now

## Read drop-in files from /etc/sudoers.d (the # here does not mean a comment)
#includedir /etc/sudoers.d
jenkins ALL=(ALL) NOPASSWORD : ALL

^G Help      ^O Write Out   ^W Where Is    ^K Cut       ^T Execute   ^C Location  M-U Undo      M-A Set Mark   M-] To Bracket
^X Exit      ^R Read File   ^\ Replace     ^U Paste     ^J Justify   ^/ Go To Line M-E Redo    M-6 Copy       ^Q Where Was
```

docker

Install

Install	Name ↓	Released
☑	Docker Pipeline 592.v1001d948426c pipeline DevOps Deployment docker Build and use Docker containers from pipelines.	3 days 9 hr ago
☑	docker-build-step 2.12 Build Tools docker This plugin allows to add various docker commands to your job as build steps. Warning: This plugin version may not be safe to use. Please review the following security notices: • CSRF vulnerability and missing permission check	8 mo 1 day ago

Build Steps

Execute shell ?

Command

See the list of available environment variables

```
docker build -t nodeimg .
docker images
```

Dashboard > dockernodebuild > #1 > Console Output

```
[91mnpm[0m[91m [0m[91mnotice[0m[91m
[0m[91mnpm[0m[91m [0m[91mnotice[0m[91m New major version of npm available! 10.5.0 -> 11.0.0
[0m[91mnpm[0m[91m [0m[91mnotice[0m[91m Changelog: <https://github.com/npm/cli/releases/tag/v11.0.0>
[0m[91mnpm[0m[91m [0m[91mnotice[0m[91m Run `npm install -g npm@11.0.0` to update!
[0m[91mnpm[0m[91m [0m[91mnotice[0m[91m
[0m ---> Removed intermediate container e2d3c582e0b1
 ---> 932cf5fbf259
Step 5/7 : COPY . .
 ---> 0731856c9b4c
Step 6/7 : EXPOSE 3000
 ---> Running in eb1dcf99c71f
 ---> Removed intermediate container eb1dcf99c71f
 ---> c39260977d8f
Step 7/7 : CMD ["node","index.js"]
 ---> Running in 135d670574c0
 ---> Removed intermediate container 135d670574c0
 ---> 618eacbbbc45
Successfully built 618eacbbbc45
Successfully tagged nodeimg:latest
+ docker images
REPOSITORY        TAG       IMAGE ID       CREATED                  SIZE
nodeimg           latest    618eacbbbc45   Less than a second ago   1.13GB
jenkins/jenkins   lts       44c1caefd796   2 weeks ago              468MB
jenkins/jenkins   latest    a9032bc6efac   2 weeks ago              468MB
node              21        5c8697e82213   8 months ago             1.1GB
Finished: SUCCESS
```

Dockernodetest

New Item

Enter an item name

dockernodetest

Select an item type

Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

Maven project
Build a maven project. Jenkins takes advantage of your POM files and drastically reduces the configuration.

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

OK

Git

Repositories

Repository URL

https://github.com/SushantAher02/dockernodejenkin.git

Build Triggers

Trigger builds remotely (e.g., from scripts)

Build after other projects are built

Projects to watch

dockernodebuild,

Execute shell

Command

See the list of available environment variables

```
docker stop nodeconatiner | true
docker rm nodecontainer | true
docker run -d -p80:3000 --name nodecontainer nodeimg
docker ps
```

Dashboard > dockernodetest > #1 > Console Output

```
Checking out Revision 994a8e9931e7a0f651ae6ddb1f45a085dc0966e7 (refs/remotes/origin/master)
 > git config core.sparsecheckout # timeout=10
 > git checkout -f 994a8e9931e7a0f651ae6ddb1f45a085dc0966e7 # timeout=10
Commit message: "firstcommit"
First time build. Skipping changelog.
[dockernodetest] $ /bin/sh -xe /tmp/jenkins434362227981067834.sh
+ true
+ docker stop nodeconatiner
Error response from daemon: No such container: nodeconatiner
+ true
+ docker rm nodecontainer
Error response from daemon: No such container: nodecontainer
+ docker run -d -p80:3000 --name nodecontainer nodeimg
d982795cdded3ae29162152095f8567fe3c1730235111a202c80d91e28649f5a
+ docker ps
CONTAINER ID   IMAGE                 COMMAND                  CREATED          STATUS                  PORTS
NAMES
d982795cdded   nodeimg               "docker-entrypoint.s…"   1 second ago     Up Less than a second   0.0.0.0:80-
>3000/tcp, :::80->3000/tcp                  nodecontainer
3b7f4f82e1e9   jenkins/jenkins:lts   "/usr/bin/tini -- /u…"   13 minutes ago   Up 13 minutes           0.0.0.0:8080-
>8080/tcp, :::8080->8080/tcp, 50000/tcp   jenkins
Finished: SUCCESS
```

Execute shell

Command

See the list of available environment variables

```
max_attempts=10
current_attempt=0

while [ $current_attempt -lt $max_attempts ]; do
    # Capture the container status
```

Dashboard > dockernodetest > #2 > Console Output

```
Checking out Revision 994a8e9931e7a0f651ae6ddb1f45a085dc0966e7 (refs/remotes/origin/master)
 > git config core.sparsecheckout # timeout=10
 > git checkout -f 994a8e9931e7a0f651ae6ddb1f45a085dc0966e7 # timeout=10
Commit message: "firstcommit"
 > git rev-list --no-walk 994a8e9931e7a0f651ae6ddb1f45a085dc0966e7 # timeout=10
[dockernodetest] $ /bin/sh -xe /tmp/jenkins1783089542938547512.sh
+ true
+ docker stop nodecontainer
+ true
+ docker rm nodecontainer
+ docker run -d -p80:3000 --name nodecontainer nodeimg
eb70c2163dcb47b20a09b030ea6114d56862481b7a29c5b6941273f456912b42
+ max_attempts=10
+ current_attempt=0
+ [ 0 -lt 10 ]
+ docker ps --format {{.Names}}: {{.Status}}
+ grep nodecontainer
+ awk -F:  {print $2}
+ container_status=Up Less than a second
+ grep -q ^Up
+ echo Up Less than a second
+ echo Container 'nodecontainer' is running successfully!
Container 'nodecontainer' is running successfully!
+ break
+ [ 0 -eq 10 ]
Finished: SUCCESS
```

Live Server SetUp

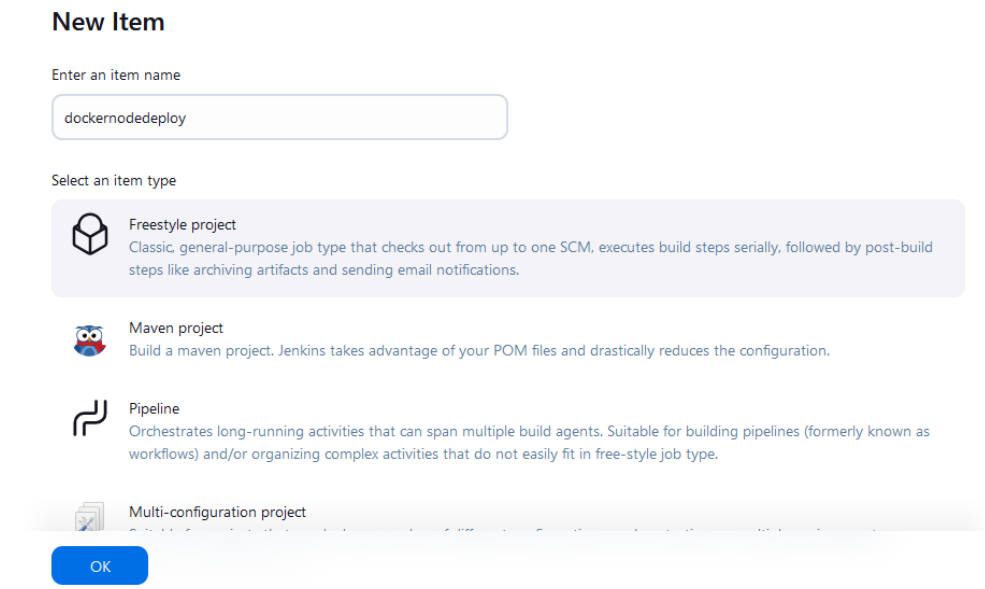
```
[ec2-user@ip-172-31-30-60 ~]$ sudo yum install docker
Last metadata expiration check: 0:00:39 ago on Fri Jan 24 04:44:20 2025.
Dependencies resolved.
================================================================================================================================
 Package                                Architecture            Version                                  Repository                  Size
================================================================================================================================
Installing:
 docker                                 x86_64                  25.0.6-1.amzn2023.0.2                    amazonlinux                  44 M
Installing dependencies:
 containerd                             x86_64                  1.7.23-1.amzn2023.0.1                    amazonlinux                  36 M
 iptables-libs                          x86_64                  1.8.8-3.amzn2023.0.2                     amazonlinux                 401 k
 iptables-nft                           x86_64                  1.8.8-3.amzn2023.0.2                     amazonlinux                 183 k
 libcgroup                              x86_64                  3.0-1.amzn2023.0.1                       amazonlinux                  75 k
 libnetfilter_conntrack                 x86_64                  1.0.8-2.amzn2023.0.2                     amazonlinux                  58 k
 libnfnetlink                           x86_64                  1.0.1-19.amzn2023.0.2                    amazonlinux                  30 k
 libnftnl                               x86_64                  1.2.2-2.amzn2023.0.2                     amazonlinux                  84 k
 pigz                                   x86_64                  2.5-1.amzn2023.0.3                       amazonlinux                  83 k
 runc                                   x86_64                  1.1.14-1.amzn2023.0.1                    amazonlinux                 3.2 M
```

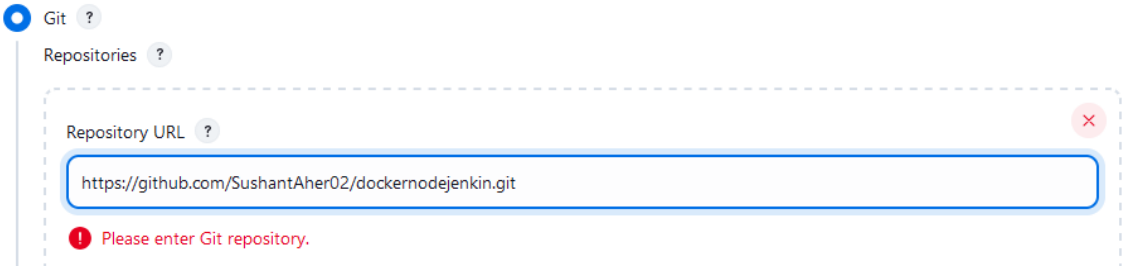
```
[ec2-user@ip-172-31-30-60 ~]$ cd dockernode
[ec2-user@ip-172-31-30-60 dockernode]$ git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /home/ec2-user/dockernode/.git/
[ec2-user@ip-172-31-30-60 dockernode]$ git remote add origin https://github.com/SushantAher02/dockernodejenkin.git
[ec2-user@ip-172-31-30-60 dockernode]$ git pull origin master
remote: Enumerating objects: 8, done.
remote: Counting objects: 100% (8/8), done.
remote: Compressing objects: 100% (8/8), done.
remote: Total 8 (delta 0), reused 8 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (8/8), 1.56 KiB | 1.56 MiB/s, done.
From https://github.com/SushantAher02/dockernodejenkin
 * branch            master     -> FETCH_HEAD
 * [new branch]      master     -> origin/master
[ec2-user@ip-172-31-30-60 dockernode]$ ls
Dockerfile  index.js  package.json  test
[ec2-user@ip-172-31-30-60 dockernode]$
```

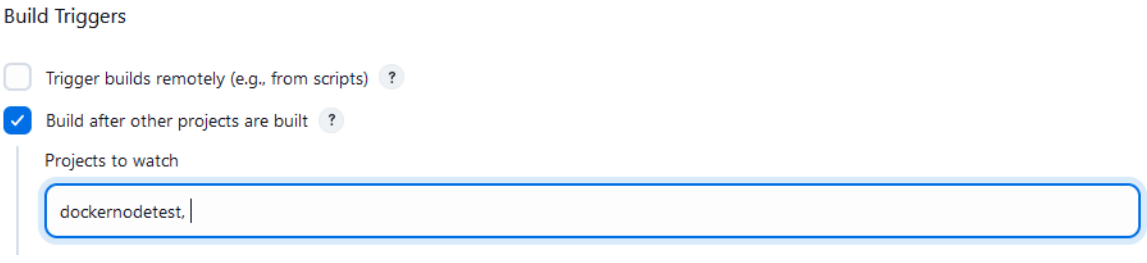
```
[root@ip-172-31-30-60 dockernode]# service docker start
Redirecting to /bin/systemctl start docker.service
[root@ip-172-31-30-60 dockernode]# docker build -t nodeimg .
[+] Building 37.3s (10/10) FINISHED                                                                                  docker:default
 => [internal] load build definition from Dockerfile                                                                          0.1s
 => => transferring dockerfile: 550B                                                                                          0.0s
 => [internal] load metadata for docker.io/library/node:21                                                                    0.4s
 => [internal] load .dockerignore                                                                                             0.0s
 => => transferring context: 2B                                                                                               0.0s
 => [1/5] FROM docker.io/library/node:21@sha256:4b232062fa976e3a966c49e9b6279efa56c8d207a67270868f51b3d155c4e33d             24.1s
 => => resolve docker.io/library/node:21@sha256:4b232062fa976e3a966c49e9b6279efa56c8d207a67270868f51b3d155c4e33d               0.0s
 => => sha256:5c8697e822135f8d9b38b54a5aa2bbd3286a092d13a68eb1bc160a883636f9b5 7.41kB / 7.41kB                                0.0s
 => => sha256:891494355808bdd3db5552f0d3723fd0fa826675f774853796fafa221d850d42 24.05MB / 24.05MB                              1.5s
 => => sha256:6582c62583ef22717db8d306b1d6a0c288089ff607d9c0d2d81c4f8973cbfee3 64.14MB / 64.14MB                              2.6s
 => => sha256:866cb83013581c86f474a7b5530abddcbdefca9559837ee2e0b893ed7e688d39 2.00kB / 2.00kB                                0.0s
 => => sha256:c6cf28de8a067787ee0d08f8b01d7f1566a508b56f6e549687b41dfd375f12c7 49.58MB / 49.58MB                              1.8s
 => => sha256:4b232062fa976e3a966c49e9b6279efa56c8d207a67270868f51b3d155c4e33d 1.21kB / 1.21kB                                0.0s
 => => sha256:bf2c3e352f3d2eed4eda4feeed44a1022a881058df20ac0584db70c138b041e2 211.21MB / 211.21MB                            6.3s
```

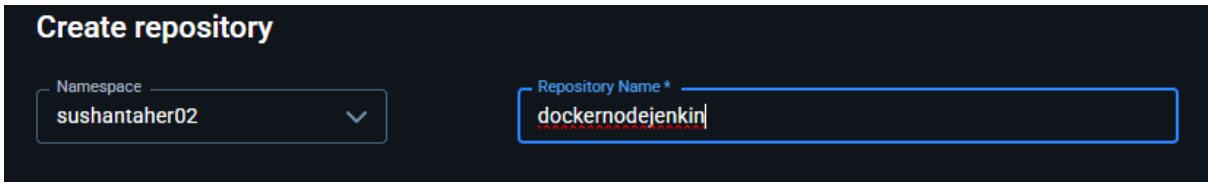
```
[root@ip-172-31-30-60 dockernode]# docker images
REPOSITORY   TAG       IMAGE ID       CREATED          SIZE
nodeimg      latest    334b5a0c13fb   30 seconds ago   1.13GB
[root@ip-172-31-30-60 dockernode]# docker run -d -p80:3000 --name nodecontainer nodeimg
3ab6d8401c6fea3e8fdb49acf6c4b4ee4ff1046168db672a284723734196dd6f
[root@ip-172-31-30-60 dockernode]# docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED         STATUS         PORTS                                   NAMES
3ab6d8401c6f   nodeimg   "docker-entrypoint.s…"   5 seconds ago   Up 3 seconds   0.0.0.0:80->3000/tcp, :::80->3000/tcp   nodecontainer
[root@ip-172-31-30-60 dockernode]#
```

Deploynodedeploy









Create access token

A personal access token is similar to a password except you can have many tokens and revoke access to each one at any time. Learn more

Access token description
jenkinkeliye

Expiration date
None

Optional

Access permissions
Read & Write

Read & Write tokens allow you to push images to any repository managed by your account.

Cancel | Generate

Execute shell ?

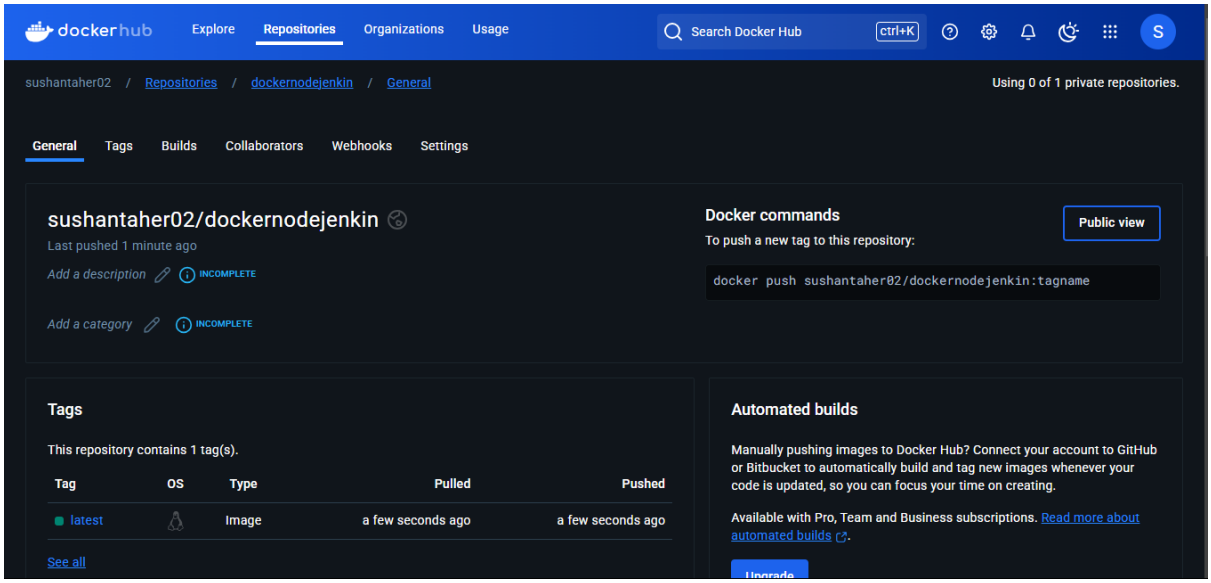
Command

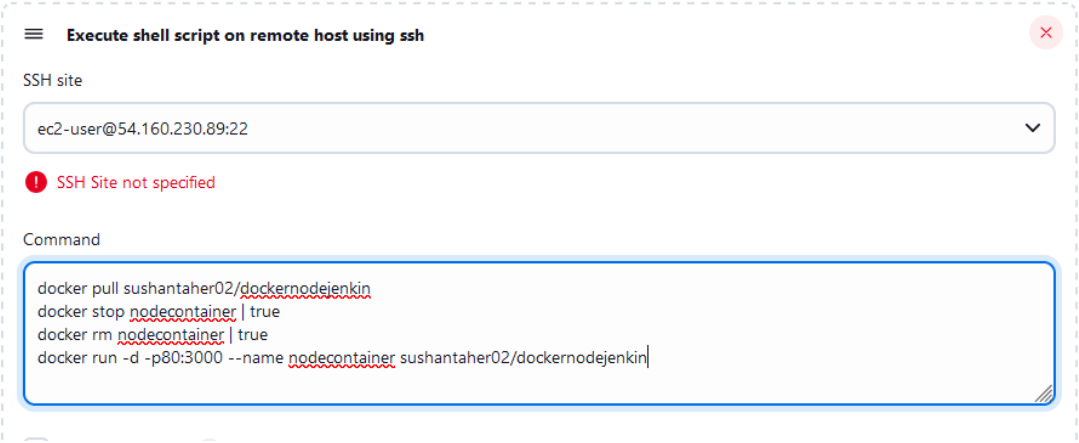
See the list of available environment variables

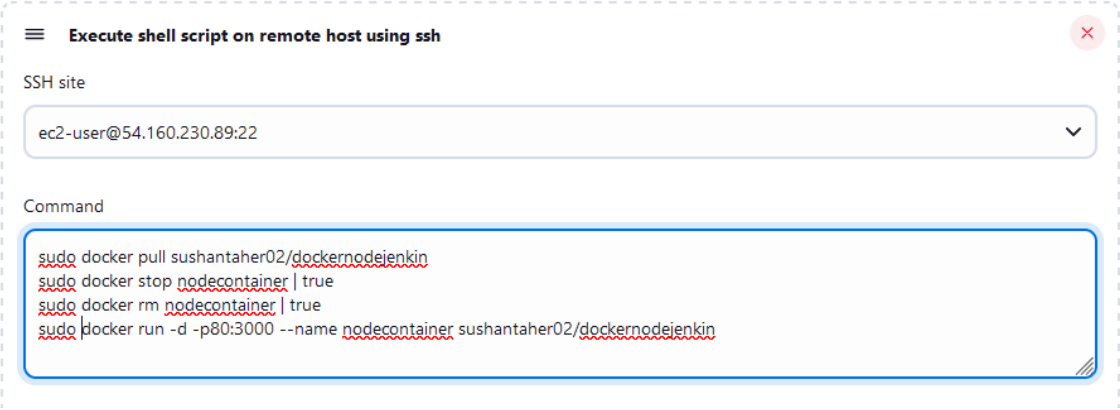
```
docker build -t nodeimg .
docker login -u sushantaher02 -p [redacted]
docker tag nodeimg sushantaher02/dockernodejenkin
docker push sushantaher02/dockernodejenkin
```

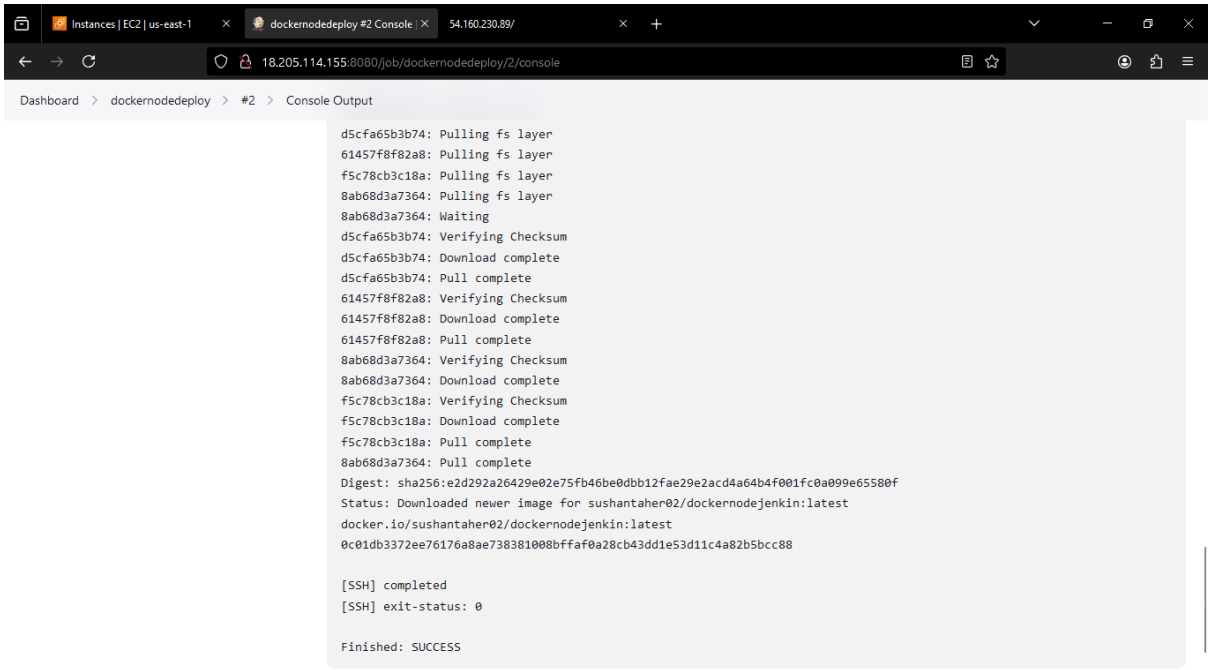
Dashboard > dockernodedeploy > #1 > Console Output

```
f2d41d232990: Preparing
734c0f0b65c2: Preparing
8845ab872c1c: Preparing
d7d4c2f9d26b: Preparing
bbe1a212f7e9: Preparing
f1002853dbeb: Waiting
d4b3538c973e: Waiting
f2d41d232990: Waiting
734c0f0b65c2: Waiting
8845ab872c1c: Waiting
d7d4c2f9d26b: Waiting
bbe1a212f7e9: Waiting
956e01595c54: Mounted from library/node
f1002853dbeb: Mounted from library/node
4a11c1d26256: Pushed
d4b3538c973e: Mounted from library/node
c10ce33fb25a: Pushed
9f44bcf4eee4: Pushed
f2d41d232990: Mounted from library/node
d7d4c2f9d26b: Mounted from library/node
8845ab872c1c: Mounted from library/node
734c0f0b65c2: Mounted from library/node
bbe1a212f7e9: Mounted from library/node
f10f089fa25f: Pushed
latest: digest: sha256:e2d292a26429e02e75fb46be0dbb12fae29e2acd4a64b4f001fc0a099e65580f size: 2838
Finished: SUCCESS
```

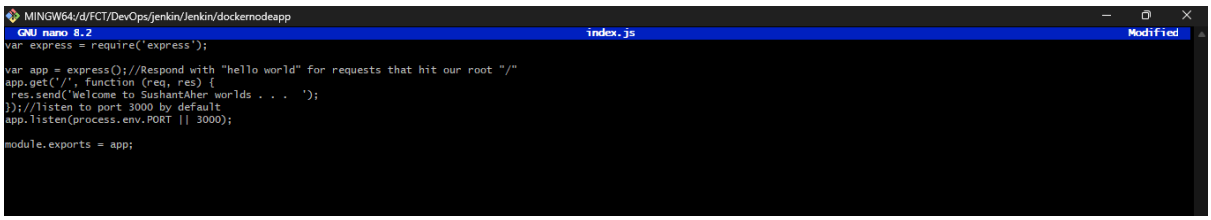

dockerhub
Explore
Repositories
Organizations
Usage
Search Docker Hub
ctrl+K
sushantaher02 / Repositories / dockernodejenkin / General
Using 0 of 1 private repositories.
General
Tags
Builds
Collaborators
Webhooks
Settings
sushantaher02/dockernodejenkin
Last pushed 1 minute ago
Add a description
INCOMPLETE
Add a category
INCOMPLETE
Docker commands
To push a new tag to this repository:
Public view
docker push sushantaher02/dockernodejenkin:tagname
Tags
This repository contains 1 tag(s).
Tag
OS
Type
Pulled
Pushed
latest
Image
a few seconds ago
a few seconds ago
See all
Automated builds
Manually pushing images to Docker Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.
Available with Pro, Team and Business subscriptions. Read more about automated builds.

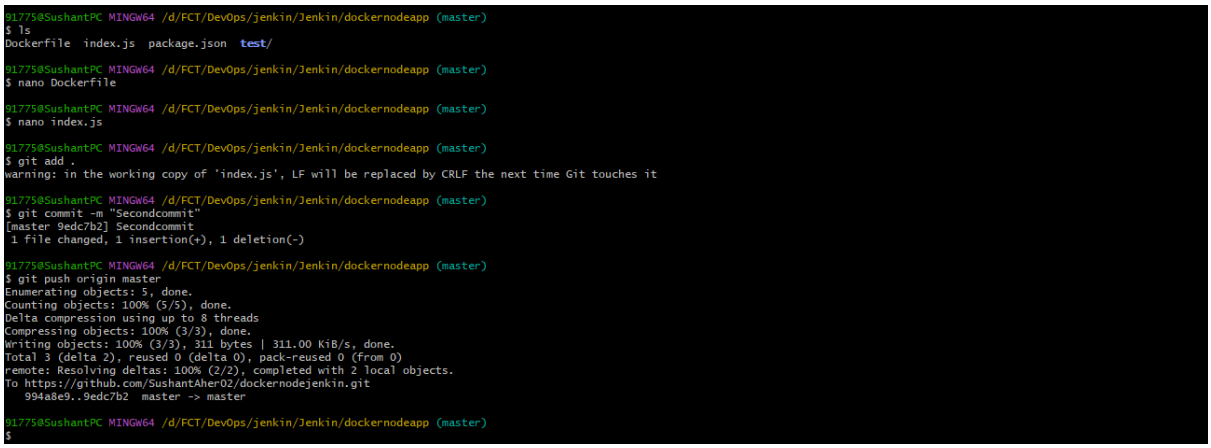

Execute shell script on remote host using ssh
SSH site
ec2-user@54.160.230.89:22
SSH Site not specified
Command
docker pull sushantaher02/dockernodejenkin
docker stop nodecontainer | true
docker rm nodecontainer | true
docker run -d -p80:3000 --name nodecontainer sushantaher02/dockernodejenkin

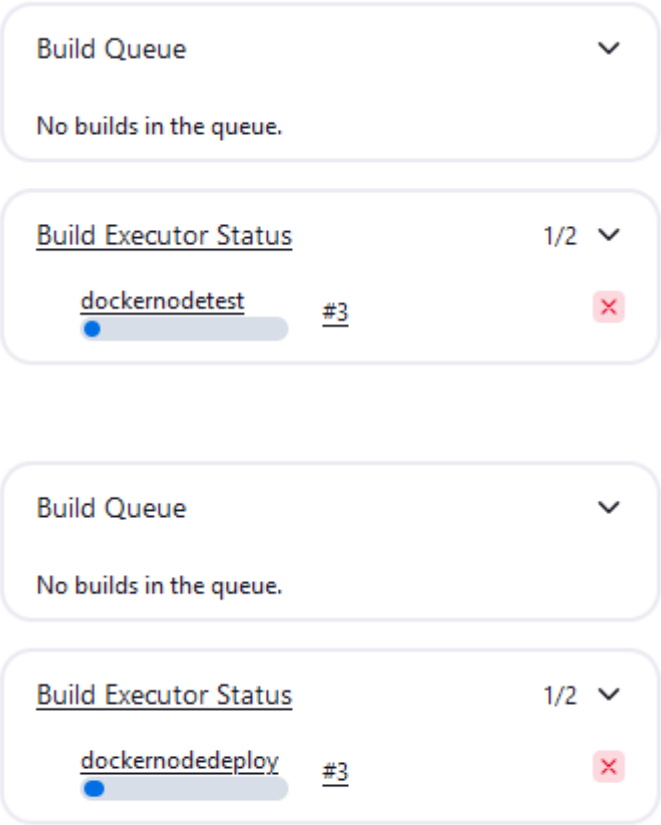

Execute shell script on remote host using ssh
SSH site
ec2-user@54.160.230.89:22
Command
sudo docker pull sushantaher02/dockernodejenkin
sudo docker stop nodecontainer | true
sudo docker rm nodecontainer | true
sudo docker run -d -p80:3000 --name nodecontainer sushantaher02/dockernodejenkin

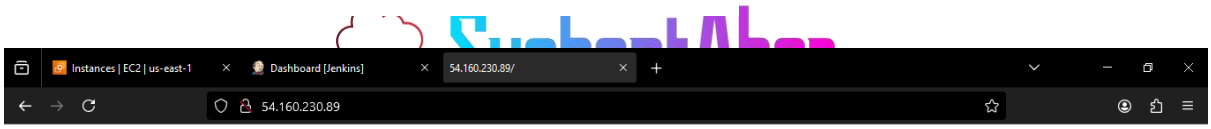


Testing of Jenkins for docker NodeJS project

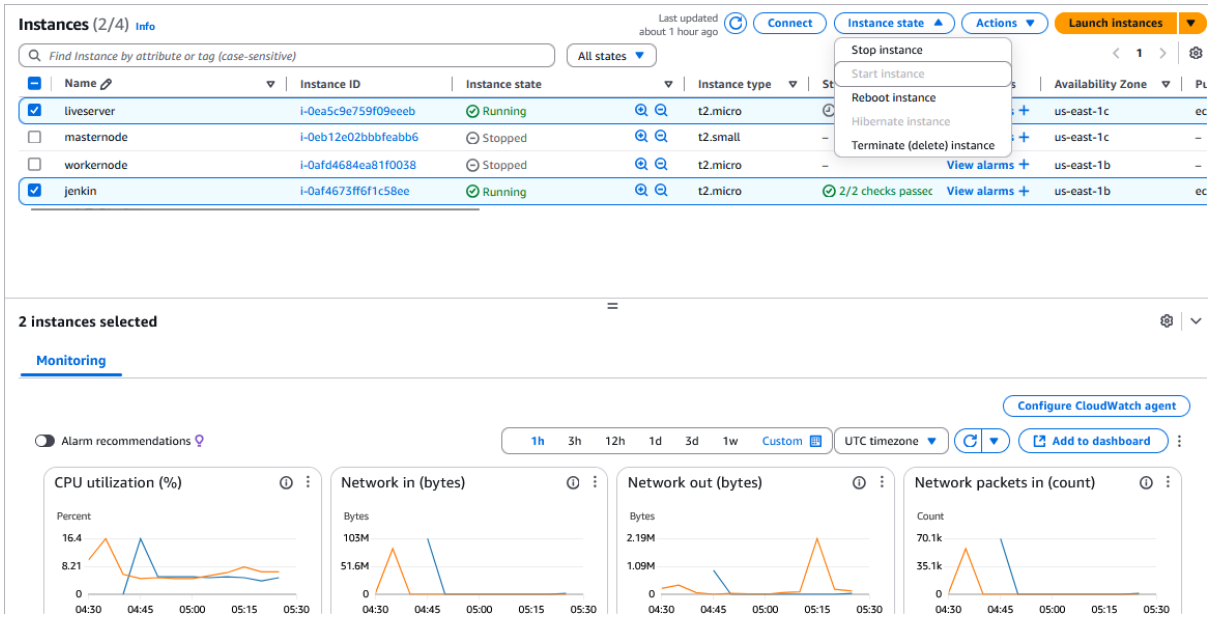








Welcome to SushantAher worlds . . .



Jenkin installation on Amazon Linux

Steps –

sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo

sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key

sudo yum upgrade

sudo dnf install java-17-amazon-corretto -y

sudo yum install jenkins -y

sudo systemctl enable Jenkins

SushantAher

sudo systemctl start Jenkins

sudo systemctl status Jenkins

sudo cat /var/lib/Jenkins/secrete/initialAdminPassword

#Steps while disk space is minimum

df -h

sudo mount -o remount,size=2G /tmp

sudo nano /etc/fstab

tmpfs /tmp tmpfs defaults,size=2G,noatime,nosuid 0 0

sudo mount -o remount /tmp

df -h

sudo service Jenkins restart

sudo yum install git

```
[ec2-user@ip-172-31-88-122 ~]$ sudo su
[root@ip-172-31-88-122 ec2-user]# sudo wget -O /etc/yum.repos.d/jenkins.repo  https://pkg.jenkins.io/redhat-stable/jenkins.repo
--2025-01-24 13:11:41--  https://pkg.jenkins.io/redhat-stable/jenkins.repo
Resolving pkg.jenkins.io (pkg.jenkins.io)... 146.75.34.133, 2a04:4e42:79::645
Connecting to pkg.jenkins.io (pkg.jenkins.io)|146.75.34.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 85
Saving to: '/etc/yum.repos.d/jenkins.repo'

/etc/yum.repos.d/jenkins.repo        100%[===================================================================>]      85  --.-KB/s    in 0s

2025-01-24 13:11:41 (7.96 MB/s) - '/etc/yum.repos.d/jenkins.repo' saved [85/85]

[root@ip-172-31-88-122 ec2-user]# sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key
[root@ip-172-31-88-122 ec2-user]# sudo yum upgrade
Jenkins-stable                                                                                                    501 kB/s |  30 kB     00:00
==================================================================================================================================================
```

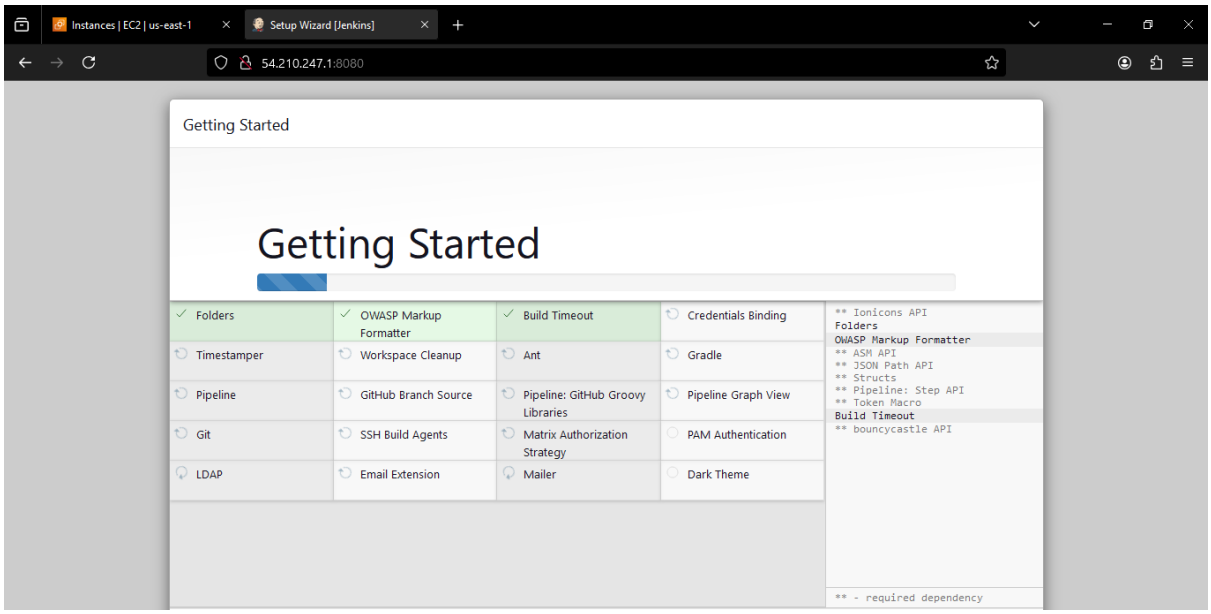
```
[root@ip-172-31-88-122 ec2-user]# sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key
[root@ip-172-31-88-122 ec2-user]# sudo yum upgrade
Jenkins-stable                                                                                                    501 kB/s |  30 kB     00:00
==================================================================================================================================================
WARNING:
  A newer release of "Amazon Linux" is available.

  Available Versions:

  Version 2023.6.20250115:
    Run the following command to upgrade to 2023.6.20250115:

      dnf upgrade --releasever=2023.6.20250115

    Release notes:
     https://docs.aws.amazon.com/linux/al2023/release-notes/relnotes-2023.6.20250115.html

==================================================================================================================================================
Dependencies resolved.
Nothing to do.
Complete!
```

```
[root@ip-172-31-88-122 ec2-user]# sudo dnf install java-17-amazon-corretto -y
Last metadata expiration check: 0:00:12 ago on Fri Jan 24 13:12:12 2025.
Dependencies resolved.
==================================================================================================================================================
 Package                                    Architecture          Version                                    Repository                   Size
==================================================================================================================================================
Installing:
 java-17-amazon-corretto                    x86_64                1:17.0.13+11-1.amzn2023.1                  amazonlinux                 213 k
Installing dependencies:
 alsa-lib                                   x86_64                1.2.7.2-1.amzn2023.0.2                     amazonlinux                 504 k
 cairo                                      x86_64                1.18.0-4.amzn2023.0.1                      amazonlinux                 718 k
 dejavu-sans-fonts                          noarch                2.37-16.amzn2023.0.2                       amazonlinux                 1.3 M
 dejavu-sans-mono-fonts                     noarch                2.37-16.amzn2023.0.2                       amazonlinux                 467 k
 dejavu-serif-fonts                         noarch                2.37-16.amzn2023.0.2                       amazonlinux                 1.0 M
 fontconfig                                 x86_64                2.13.94-2.amzn2023.0.2                     amazonlinux                 273 k
 fonts-filesystem                           noarch                1:2.0.5-12.amzn2023.0.2                    amazonlinux                 9.5 k
 freetype                                   x86_64                2.13.2-5.amzn2023.0.1                      amazonlinux                 423 k
 giflib                                     x86_64                5.2.1-9.amzn2023.0.1                       amazonlinux                  49 k
 google-noto-fonts-common                   noarch                20201206-2.amzn2023.0.2                    amazonlinux                  15 k
 google-noto-sans-vf-fonts                  noarch                20201206-2.amzn2023.0.2                    amazonlinux                 492 k
 graphite2                                  x86_64                1.3.14-7.amzn2023.0.2                      amazonlinux                  97 k
 harfbuzz                                   x86_64                7.0.0-2.amzn2023.0.1                       amazonlinux                 868 k
 java-17-amazon-corretto-headless           x86_64                1:17.0.13+11-1.amzn2023.1                  amazonlinux                  91 M
```

```
[root@ip-172-31-88-122 ec2-user]# sudo dnf install java-17-amazon-corretto -y
Last metadata expiration check: 0:00:12 ago on Fri Jan 24 13:12:12 2025.
Dependencies resolved.
==================================================================================================================================================
 Package                                    Architecture          Version                                    Repository                   Size
==================================================================================================================================================
Installing:
 java-17-amazon-corretto                    x86_64                1:17.0.13+11-1.amzn2023.1                  amazonlinux                 213 k
Installing dependencies:
 alsa-lib                                   x86_64                1.2.7.2-1.amzn2023.0.2                     amazonlinux                 504 k
 cairo                                      x86_64                1.18.0-4.amzn2023.0.1                      amazonlinux                 718 k
 dejavu-sans-fonts                          noarch                2.37-16.amzn2023.0.2                       amazonlinux                 1.3 M
 dejavu-sans-mono-fonts                     noarch                2.37-16.amzn2023.0.2                       amazonlinux                 467 k
 dejavu-serif-fonts                         noarch                2.37-16.amzn2023.0.2                       amazonlinux                 1.0 M
 fontconfig                                 x86_64                2.13.94-2.amzn2023.0.2                     amazonlinux                 273 k
 fonts-filesystem                           noarch                1:2.0.5-12.amzn2023.0.2                    amazonlinux                 9.5 k
 freetype                                   x86_64                2.13.2-5.amzn2023.0.1                      amazonlinux                 423 k
 giflib                                     x86_64                5.2.1-9.amzn2023.0.1                       amazonlinux                  49 k
 google-noto-fonts-common                   noarch                20201206-2.amzn2023.0.2                    amazonlinux                  15 k
 google-noto-sans-vf-fonts                  noarch                20201206-2.amzn2023.0.2                    amazonlinux                 492 k
 graphite2                                  x86_64                1.3.14-7.amzn2023.0.2                      amazonlinux                  97 k
 harfbuzz                                   x86_64                7.0.0-2.amzn2023.0.1                       amazonlinux                 868 k
 java-17-amazon-corretto-headless           x86_64                1:17.0.13+11-1.amzn2023.1                  amazonlinux                  91 M
 javapackages-filesystem                    noarch                6.0.0-7.amzn2023.0.6                       amazonlinux                  12 k
 langpacks-core-font-en                     noarch                3.0-21.amzn2023.0.4                        amazonlinux                  10 k
 libICE                                     x86_64                1.1.1-3.amzn2023.0.1                       amazonlinux                  76 k
 libSM                                      x86_64                1.2.4-3.amzn2023.0.1                       amazonlinux                  45 k
 libX11                                     x86_64                1.8.10-2.amzn2023.0.1                      amazonlinux                 659 k
 libX11-common                              noarch                1.8.10-2.amzn2023.0.1                      amazonlinux                 147 k
 libXau                                     x86_64                1.0.11-6.amzn2023.0.1                      amazonlinux                  33 k
 libXext                                    x86_64                1.3.6-1.amzn2023.0.1                       amazonlinux                  42 k
 libXi                                      x86_64                1.8.2-1.amzn2023.0.1                       amazonlinux                  42 k
```

```
[root@ip-172-31-88-122 ec2-user]# sudo yum install jenkins
Last metadata expiration check: 0:00:38 ago on Fri Jan 24 13:12:12 2025.
Dependencies resolved.
================================================================================================================================
 Package                    Architecture                Version                          Repository                     Size
================================================================================================================================
Installing:
 jenkins                    noarch                      2.479.3-1.1                      jenkins                        92 M

Transaction Summary
================================================================================================================================
Install  1 Package

Total download size: 92 M
Installed size: 92 M
Is this ok [y/N]: y
Downloading Packages:
jenkins-2.479.3-1.1.noarch.rpm                                                                  21 MB/s |  92 MB     00:04
```

```
[root@ip-172-31-88-122 ec2-user]# sudo systemctl enable jenkins
Created symlink /etc/systemd/system/multi-user.target.wants/jenkins.service → /usr/lib/systemd/system/jenkins.service.
[root@ip-172-31-88-122 ec2-user]# sudo systemctl start jenkins
[root@ip-172-31-88-122 ec2-user]# sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
     Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: disabled)
     Active: active (running) since Fri 2025-01-24 13:13:43 UTC; 7s ago
   Main PID: 27982 (java)
      Tasks: 46 (limit: 1111)
     Memory: 365.1M
        CPU: 15.014s
     CGroup: /system.slice/jenkins.service
             └27982 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

Jan 24 13:13:37 ip-172-31-88-122.ec2.internal jenkins[27982]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Jan 24 13:13:37 ip-172-31-88-122.ec2.internal jenkins[27982]: *************************************************************
Jan 24 13:13:37 ip-172-31-88-122.ec2.internal jenkins[27982]: *************************************************************
Jan 24 13:13:37 ip-172-31-88-122.ec2.internal jenkins[27982]: *************************************************************
Jan 24 13:13:43 ip-172-31-88-122.ec2.internal jenkins[27982]: 2025-01-24 13:13:43.598+0000 [id=30]	INFO	jenkins.InitReactorRunner$1#o>
Jan 24 13:13:43 ip-172-31-88-122.ec2.internal jenkins[27982]: 2025-01-24 13:13:43.617+0000 [id=23]	INFO	hudson.lifecycle.Lifecycle#on>
Jan 24 13:13:43 ip-172-31-88-122.ec2.internal systemd[1]: Started jenkins.service - Jenkins Continuous Integration Server.
Jan 24 13:13:43 ip-172-31-88-122.ec2.internal jenkins[27982]: 2025-01-24 13:13:43.870+0000 [id=46]	INFO	h.m.DownloadService$Downloada>
```




```
[root@ip-172-31-88-122 ec2-user]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M     0  4.0M   0% /dev
tmpfs           475M     0  475M   0% /dev/shm
tmpfs           190M  480K  190M   1% /run
/dev/xvda1      8.0G  5.5G  2.5G  69% /
tmpfs           475M  4.5M  471M   1% /tmp
/dev/xvda128     10M  1.3M  8.7M  13% /boot/efi
tmpfs            95M     0   95M   0% /run/user/1000
[root@ip-172-31-88-122 ec2-user]#
```

```
[root@ip-172-31-88-122 ec2-user]# sudo mount -o remount,size=2G /tmp
[root@ip-172-31-88-122 ec2-user]#
```

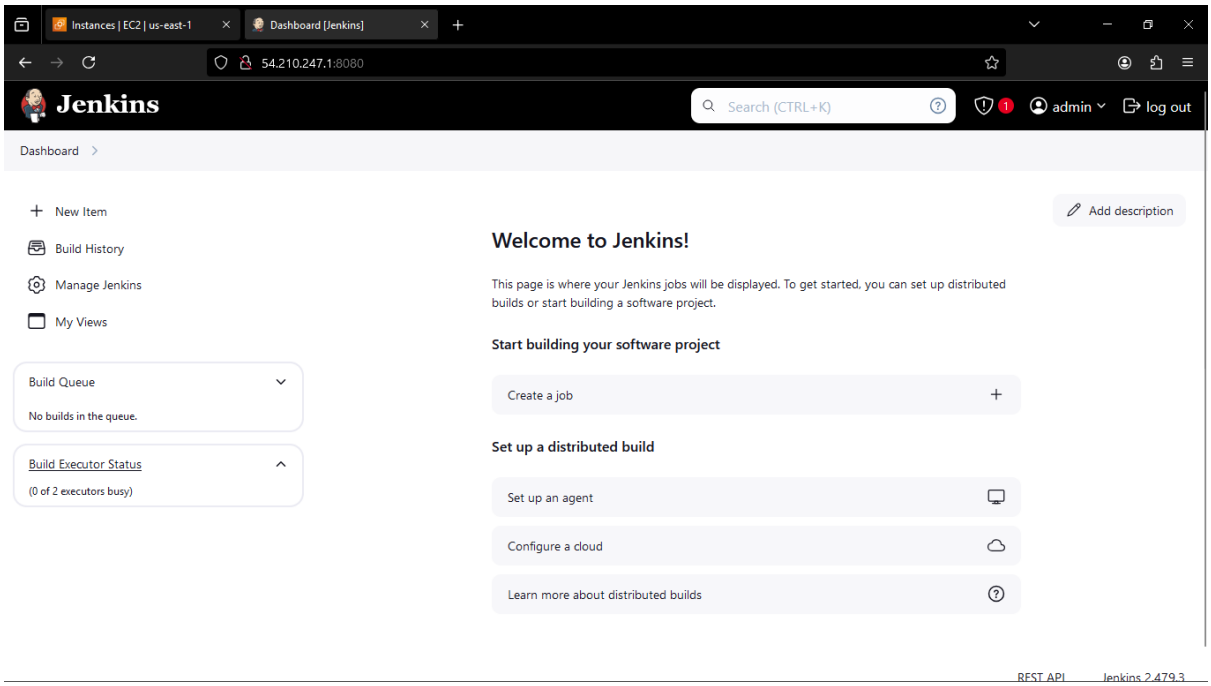
```
root@ip-172-31-88-122:/home
  GNU nano 5.8                          /etc/fstab                          Modified
#
UUID=73e034f4-2887-4ec9-8b40-0d35c0091a37     /           xfs    defaults,noatime  1   1
UUID=9F37-3C35        /boot/efi       vfat    defaults,noatime,uid=0,gid=0,umask=0077,shortname=winnt,x-systemd.automount 0 2
tmpfs /tmp tmpfs defaults,size=2G,noatime,nosuid 0 0
```

```
[root@ip-172-31-88-122 ec2-user]# sudo mount -o remount /tmp
[root@ip-172-31-88-122 ec2-user]#
```

```
[root@ip-172-31-88-122 ec2-user]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M     0  4.0M   0% /dev
tmpfs           475M     0  475M   0% /dev/shm
tmpfs           190M  480K  190M   1% /run
/dev/xvda1      8.0G  5.5G  2.5G  69% /
tmpfs           2.0G  4.5M  2.0G   1% /tmp
/dev/xvda128     10M  1.3M  8.7M  13% /boot/efi
tmpfs            95M     0   95M   0% /run/user/1000
[root@ip-172-31-88-122 ec2-user]#
```

```
[root@ip-172-31-88-122 ec2-user]# sudo service jenkins restart
Redirecting to /bin/systemctl restart jenkins.service
[root@ip-172-31-88-122 ec2-user]#
```

```
[root@ip-172-31-88-122 ec2-user]# sudo yum install git
Last metadata expiration check: 0:16:29 ago on Fri Jan 24 13:12:12 2025.
Dependencies resolved.
================================================================================================================================
 Package                        Architecture        Version                                  Repository                  Size
================================================================================================================================
Installing:
 git                            x86_64              2.40.1-1.amzn2023.0.3                    amazonlinux                 54 k
Installing dependencies:
 git-core                       x86_64              2.40.1-1.amzn2023.0.3                    amazonlinux                4.3 M
 git-core-doc                   noarch              2.40.1-1.amzn2023.0.3                    amazonlinux                2.6 M
 perl-Error                     noarch              1:0.17029-5.amzn2023.0.2                 amazonlinux                 41 k
 perl-File-Find                 noarch              1.37-477.amzn2023.0.6                    amazonlinux                 26 k
 perl-Git                       noarch              2.40.1-1.amzn2023.0.3                    amazonlinux                 42 k
 perl-TermReadKey               x86_64              2.38-9.amzn2023.0.2                      amazonlinux                 36 k
 perl-lib                       x86_64              0.65-477.amzn2023.0.6                    amazonlinux                 15 k

Transaction Summary
================================================================================================================================
Install  8 Packages

Total download size: 7.1 M
Installed size: 34 M
Is this ok [y/N]: y
Downloading Packages:
(1/8): git-2.40.1-1.amzn2023.0.3.x86_64.rpm                                      1.3 MB/s |  54 kB     00:00
(2/8): perl-Error-0.17029-5.amzn2023.0.2.noarch.rpm                              2.2 MB/s |  41 kB     00:00
(3/8): perl-File-Find-1.37-477.amzn2023.0.6.noarch.rpm                           728 kB/s |  26 kB     00:00
(4/8): git-core-2.40.1-1.amzn2023.0.3.x86_64.rpm                                  34 MB/s | 4.3 MB     00:00
(5/8): perl-Git-2.40.1-1.amzn2023.0.3.noarch.rpm                                 1.6 MB/s |  42 kB     00:00
(6/8): perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64.rpm                           922 kB/s |  36 kB     00:00
(7/8): perl-lib-0.65-477.amzn2023.0.6.x86_64.rpm                                 402 kB/s |  15 kB     00:00
(8/8): git-core-doc-2.40.1-1.amzn2023.0.3.noarch.rpm                              12 MB/s | 2.6 MB     00:00
```



Python hosting with Jenkins

#development laptop

mkdir pythonapp

git init

git add remote origin gitrepourl

git add .

git commit -m “message”

git push origin master

#check in GitHub code push or not

#Build job

Name – pythonappbuild

Add git repo

Trigger – github hook

Build step execute shell

```
python3 -m venv myenv
source myenv/bin/activate
pip install -r requirements.txt
```

build now

#Test Job

Name – pythonapptest

Freestyle project

Add git repo

Trigger – build after other project pythonappbuild

Build step execute shell

```
python3 -m venv myenv
source myenv/bin/activate
pip install -r requirements.txt
python3 -m unittest discover -s test
```

#live Server Setup

SushantAher

```
python3 -v
sudo yum install python3-pip python3-virtualenv
pip -v
sudo yum install git -y
git clone githubrepo
ls
cd pythonapp
ls
python3 -m venv myenv
source myenv/bin/activate
pip install -r requirements.txt
```

```
sudo yum install nginx
sudo service nginx start
sudo nano /etc/nginx/nginx.conf
    location / {
        proxy_pass http://locathost:5000;
            }
sudo service nginx reload
gunicorn - - workers3 - - bind 0.0.0.0:5000 app:app&
#copy ip and test works or not
```

#Deploy job

Name – pythonappdeploy

Freestyle job

Add git repo

Trigger – build after other project are built pythonapptest

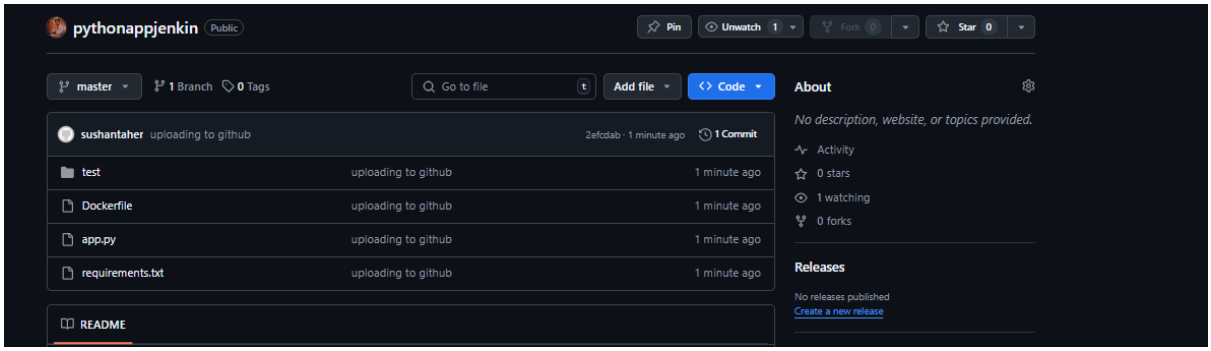
Build step – execute shell using ssh

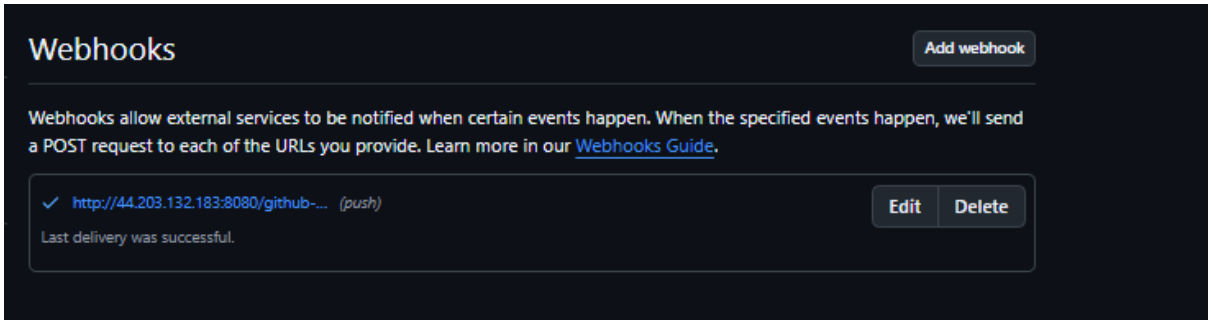
```
cd pythonapp
git pull origin master
pip install -r requirements.txt
killall gunicorn
gunicorn --workers 3 --bind 0.0.0.0:5000 app:app&
```

build now

#Create changes in development laptop and Test hole Jenkins project.

```
91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/pythonjenkin (master)
$ git remote add origin https://github.com/SushantAher02/pythonappjenkin.git

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/pythonjenkin (master)
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Dockerfile
        app.py
        requirements.txt
        test/

nothing added to commit but untracked files present (use "git add" to track)

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/pythonjenkin (master)
$ git add .
warning: in the working copy of 'Dockerfile', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'app.py', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'test/test.py', LF will be replaced by CRLF the next time Git touches it

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/pythonjenkin (master)
$ git commit -m "uploading to github "
[master (root-commit) 2efcdab] uploading to github
 4 files changed, 53 insertions(+)
 create mode 100644 Dockerfile
 create mode 100644 app.py
 create mode 100644 requirements.txt
 create mode 100644 test/test.py

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/pythonjenkin (master)
$ git status
On branch master
nothing to commit, working tree clean

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/pythonjenkin (master)
$ git push origin master
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (7/7), 1.14 KiB | 232.00 KiB/s, done.
Total 7 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/SushantAher02/pythonappjenkin.git
 * [new branch]      master -> master

91775@SushantPC MINGW64 /d/FCT/DevOps/jenkin/Jenkin/pythonjenkin (master)
$
```





New Item

Enter an item name

pythonappbuild

Select an item type

Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

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

OK

Git ?

Repositories ?

Repository URL ?

https://github.com/SushantAher02/pythonappjenkin.git

Please enter Git repository.

Build Triggers

- [ ] Trigger builds remotely (e.g., from scripts) ?
- [ ] Build after other projects are built ?
- [ ] Build periodically ?
- [x] GitHub hook trigger for GITScm polling ?
- [ ] Poll SCM ?

Build Steps

Execute shell ?

Command

See the list of available environment variables

```
python3 -m venv myenv
source myenv/bin/activate
pip install -r requirements.txt
```

Build Executor Status 1/2

pythonappbuild #1

Dashboard > pythonappbuild > #1 > Console Output

```
Collecting click==8.0.3
  Downloading click-8.0.3-py3-none-any.whl (97 kB)
Collecting colorama==0.4.4
  Downloading colorama-0.4.4-py2.py3-none-any.whl (16 kB)
Collecting Flask==2.0.2
  Downloading Flask-2.0.2-py3-none-any.whl (95 kB)
Collecting itsdangerous==2.0.1
  Downloading itsdangerous-2.0.1-py3-none-any.whl (18 kB)
Collecting Jinja2==3.0.3
  Downloading Jinja2-3.0.3-py3-none-any.whl (133 kB)
Collecting MarkupSafe==2.0.1
  Downloading MarkupSafe-2.0.1-cp39-cp39-
manylinux_2_5_x86_64.manylinux1_x86_64.manylinux_2_12_x86_64.manylinux2010_x86_64.whl (30 kB)
Collecting Werkzeug==2.0.2
  Downloading Werkzeug-2.0.2-py3-none-any.whl (288 kB)
Collecting gunicorn==20.1.0
  Downloading gunicorn-20.1.0-py3-none-any.whl (79 kB)
Requirement already satisfied: setuptools>=3.0 in ./myenv/lib/python3.9/site-packages (from gunicorn==20.1.0->-r
requirements.txt (line 8)) (59.6.0)
Installing collected packages: MarkupSafe, Werkzeug, Jinja2, itsdangerous, click, gunicorn, Flask, colorama
Successfully installed Flask-2.0.2 Jinja2-3.0.3 MarkupSafe-2.0.1 Werkzeug-2.0.2 click-8.0.3 colorama-0.4.4
gunicorn-20.1.0 itsdangerous-2.0.1
```

New Item

Enter an item name

pythonapptest

Select an item type

Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

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

OK

Git ?

Repositories ?

Repository URL ?

https://github.com/SushantAher02/pythonappjenkin.git

Please enter Git repository.

Build Triggers

Trigger builds remotely (e.g., from scripts) ?

Build after other projects are built ?

Projects to watch

pythonappbuild,

Trigger only if build is stable

Trigger even if the build is unstable

Build Steps

Execute shell ?

Command

See the list of available environment variables

```
python3 -m venv myenv
source myenv/bin/activate
pip install -r requirements.txt
python3 -m unittest discover -s test
```

Dashboard > pythonapptest > #1 > Console Output

```
Collecting itsdangerous==2.0.1
  Using cached itsdangerous-2.0.1-py3-none-any.whl (18 kB)
Collecting Jinja2==3.0.3
  Using cached Jinja2-3.0.3-py3-none-any.whl (133 kB)
Collecting MarkupSafe==2.0.1
  Using cached MarkupSafe-2.0.1-cp39-cp39-
manylinux_2_5_x86_64.manylinux1_x86_64.manylinux_2_12_x86_64.manylinux2010_x86_64.whl (30 kB)
Collecting Werkzeug==2.0.2
  Using cached Werkzeug-2.0.2-py3-none-any.whl (288 kB)
Collecting gunicorn==20.1.0
  Using cached gunicorn-20.1.0-py3-none-any.whl (79 kB)
Requirement already satisfied: setuptools>=3.0 in ./myenv/lib/python3.9/site-packages (from gunicorn==20.1.0->-r
requirements.txt (line 8)) (59.6.0)
Installing collected packages: MarkupSafe, Werkzeug, Jinja2, itsdangerous, click, gunicorn, Flask, colorama
Successfully installed Flask-2.0.2 Jinja2-3.0.3 MarkupSafe-2.0.1 Werkzeug-2.0.2 click-8.0.3 colorama-0.4.4
gunicorn-20.1.0 itsdangerous-2.0.1
WARNING: You are using pip version 21.3.1; however, version 24.3.1 is available.
You should consider upgrading via the '/var/lib/jenkins/workspace/pythonapptest/myenv/bin/python3 -m pip install --
upgrade pip' command.
+ python3 -m unittest discover -s test
.
----------------------------------------------------------------------
Ran 1 test in 0.003s

OK
Finished: SUCCESS
```

```
[ec2-user@ip-172-31-30-60 ~]$ sudo yum install python3
Last metadata expiration check: 1 day, 0:50:02 ago on Fri Jan 24 04:44:20 2025.
Package python3-3.9.20-1.amzn2023.0.2.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[ec2-user@ip-172-31-30-60 ~]$
```

```
[ec2-user@ip-172-31-30-60 ~]$ sudo yum install python3-pip
Last metadata expiration check: 1 day, 0:50:34 ago on Fri Jan 24 04:44:20 2025.
Dependencies resolved.
================================================================================================================================
 Package                        Architecture        Version                                Repository                        S
================================================================================================================================
Installing:
 python3-pip                    noarch              21.3.1-2.amzn2023.0.10                 amazonlinux                     1
Installing weak dependencies:
 libxcrypt-compat               x86_64              4.4.33-7.amzn2023                      amazonlinux                     9

Transaction Summary
```

```
[ec2-user@ip-172-31-30-60 ~]$ sudo yum install python3-virtualenv
Last metadata expiration check: 1 day, 0:51:12 ago on Fri Jan 24 04:44:20 2025.
Dependencies resolved.
================================================================================================================================
 Package                        Architecture        Version                                Repository                      Size
================================================================================================================================
Installing:
 python3-virtualenv             noarch              20.4.0-3.amzn2023.0.3                  amazonlinux                    233 k
Installing dependencies:
 python3-appdirs                noarch              1.4.4-2.amzn2023.0.2                   amazonlinux                     23 k
 python3-distlib                noarch              0.3.1-4.amzn2023.0.2                   amazonlinux                    188 k
 python3-filelock               noarch              3.0.12-9.amzn2023.0.2                  amazonlinux                     22 k
 python3-wheel-wheel            noarch              1:0.37.1-1.amzn2023.0.3                amazonlinux                     43 k

Transaction Summary
================================================================================================================================
Install  5 Packages
```

```
[ec2-user@ip-172-31-30-60 ~]$ pip --version
pip 21.3.1 from /usr/lib/python3.9/site-packages/pip (python 3.9)
[ec2-user@ip-172-31-30-60 ~]$
```

```
[ec2-user@ip-172-31-30-60 ~]$ git clone https://github.com/SushantAher02/pythonappjenkin.git
Cloning into 'pythonappjenkin'...
remote: Enumerating objects: 7, done.
remote: Counting objects: 100% (7/7), done.
remote: Compressing objects: 100% (6/6), done.
remote: Total 7 (delta 0), reused 7 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (7/7), done.
[ec2-user@ip-172-31-30-60 ~]$
```

```
[ec2-user@ip-172-31-30-60 ~]$ ls
dockernode  nodeappjenkin  pythonappjenkin
[ec2-user@ip-172-31-30-60 ~]$ cd pythonappjenkin/
[ec2-user@ip-172-31-30-60 pythonappjenkin]$ ls
Dockerfile  app.py  requirements.txt  test
[ec2-user@ip-172-31-30-60 pythonappjenkin]$
```

```
  server {
      listen       80;
      listen       [::]:80;
      server_name  _;
      root         /usr/share/nginx/html;
      location / {
      proxy_pass http://localhost:5000;
      }
      # Load configuration files for the default server block.
```

Python App Hosting jhala

```
[ec2-user@ip-172-31-30-60 pythonappjenkin]$ python3 -m venv myenv
[ec2-user@ip-172-31-30-60 pythonappjenkin]$ source myenv/bin/activate
(myenv) [ec2-user@ip-172-31-30-60 pythonappjenkin]$ pip install -r requirements.txt
Collecting click==8.0.3
  Downloading click-8.0.3-py3-none-any.whl (97 kB)
     |████████████████████████████████| 97 kB 6.2 MB/s
Collecting colorama==0.4.4
  Downloading colorama-0.4.4-py2.py3-none-any.whl (16 kB)
Collecting Flask==2.0.2
  Downloading Flask-2.0.2-py3-none-any.whl (95 kB)
     |████████████████████████████████| 95 kB 6.2 MB/s
Collecting itsdangerous==2.0.1
  Downloading itsdangerous-2.0.1-py3-none-any.whl (18 kB)
Collecting Jinja2==3.0.3
  Downloading Jinja2-3.0.3-py3-none-any.whl (133 kB)
     |████████████████████████████████| 133 kB 39.0 MB/s
Collecting MarkupSafe==2.0.1
  Downloading MarkupSafe-2.0.1-cp39-cp39-manylinux_2_5_x86_64.manylinux1_x86_64.manylinux_2_12_x86_64.manylinux2010_x86_64.whl (30 kB)
Collecting Werkzeug==2.0.2
  Downloading Werkzeug-2.0.2-py3-none-any.whl (288 kB)
     |████████████████████████████████| 288 kB 89.6 MB/s
Collecting gunicorn==20.1.0
  Downloading gunicorn-20.1.0-py3-none-any.whl (79 kB)
     |████████████████████████████████| 79 kB 14.5 MB/s
Requirement already satisfied: setuptools>=3.0 in ./myenv/lib/python3.9/site-packages (from gunicorn==20.1.0->-r requirements.txt (line 8)) (59.6.0)
Installing collected packages: MarkupSafe, Werkzeug, Jinja2, itsdangerous, click, gunicorn, Flask, colorama
Successfully installed Flask-2.0.2 Jinja2-3.0.3 MarkupSafe-2.0.1 Werkzeug-2.0.2 click-8.0.3 colorama-0.4.4 gunicorn-20.1.0 itsdangerous-2.0.1
WARNING: You are using pip version 21.3.1; however, version 24.3.1 is available.
You should consider upgrading via the '/home/ec2-user/pythonappjenkin/myenv/bin/python3 -m pip install --upgrade pip' command.
(myenv) [ec2-user@ip-172-31-30-60 pythonappjenkin]$ sudo yum install nginx
Last metadata expiration check: 1 day, 1:46:35 ago on Fri Jan 24 04:44:20 2025.
```

```
(myenv) [ec2-user@ip-172-31-30-60 pythonappjenkin]$ sudo service nginx start
Redirecting to /bin/systemctl start nginx.service
(myenv) [ec2-user@ip-172-31-30-60 pythonappjenkin]$ sudo nano /etc/nginx/nginx.conf
(myenv) [ec2-user@ip-172-31-30-60 pythonappjenkin]$ sudo service nginx reload
Redirecting to /bin/systemctl reload nginx.service
(myenv) [ec2-user@ip-172-31-30-60 pythonappjenkin]$ gunicorn --workers 3 --bind 0.0.0.0:5000 app:app&
[1] 2488
(myenv) [ec2-user@ip-172-31-30-60 pythonappjenkin]$ [2025-01-25 06:33:10 +0000] [2488] [INFO] Starting gunicorn 20.1.0
[2025-01-25 06:33:10 +0000] [2488] [INFO] Listening at: http://0.0.0.0:5000 (2488)
[2025-01-25 06:33:10 +0000] [2488] [INFO] Using worker: sync
[2025-01-25 06:33:10 +0000] [2489] [INFO] Booting worker with pid: 2489
[2025-01-25 06:33:10 +0000] [2490] [INFO] Booting worker with pid: 2490
[2025-01-25 06:33:10 +0000] [2491] [INFO] Booting worker with pid: 2491
```

New Item

Enter an item name

pythonappdeploy

Select an item type

Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

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

OK

Git ?

Repositories ?

Repository URL ?

https://github.com/SushantAher02/pythonappjenkin.git

Please enter Git repository.

Build Triggers

- [ ] Trigger builds remotely (e.g., from scripts) ?
- [x] Build after other projects are built ?

Projects to watch

pythonapptest,

(•) Trigger only if build is stable

Install	Name ↓	Released
[x]	SSH 158.ve2a_e90fb_7319 Build Wrappers This plugin executes shell commands remotely using SSH protocol. Warning: This plugin version may not be safe to use. Please review the following security notices: • CSRF vulnerability and missing permission checks allow capturing credentials • Missing permission check allows enumerating credentials IDs	2 mo 7 days ago

serverAliveInterval ?

timeout ?

Successfull connection

Check connection

Execute shell script on remote host using ssh

SSH site

ec2-user@3.80.119.147:22

SSH Site not specified

Command

```
cd pythonappjenkin
git pull origin master
pip install -r requirements.txt
killall gunicorn
gunicorn --workers 3 --bind 0.0.0.0:5000 app:app&
```

Dashboard > pythonappdeploy > #1 > Console Output

```
Collecting Flask==2.0.2
  Using cached Flask-2.0.2-py3-none-any.whl (95 kB)
Collecting itsdangerous==2.0.1
  Using cached itsdangerous-2.0.1-py3-none-any.whl (18 kB)
Collecting Jinja2==3.0.3
  Using cached Jinja2-3.0.3-py3-none-any.whl (133 kB)
Collecting MarkupSafe==2.0.1
  Using cached MarkupSafe-2.0.1-cp39-cp39-
manylinux_2_5_x86_64.manylinux1_x86_64.manylinux_2_12_x86_64.manylinux2010_x86_64.whl (30 kB)
Collecting Werkzeug==2.0.2
  Using cached Werkzeug-2.0.2-py3-none-any.whl (288 kB)
Collecting gunicorn==20.1.0
  Using cached gunicorn-20.1.0-py3-none-any.whl (79 kB)
Requirement already satisfied: setuptools>=3.0 in /usr/lib/python3.9/site-packages (from gunicorn==20.1.0->-r
requirements.txt (line 8)) (59.6.0)
Installing collected packages: MarkupSafe, Werkzeug, Jinja2, itsdangerous, click, gunicorn, Flask
Successfully installed Flask-2.0.2 Jinja2-3.0.3 MarkupSafe-2.0.1 Werkzeug-2.0.2 click-8.0.3 gunicorn-20.1.0
itsdangerous-2.0.1
[2025-01-25 07:02:37 +0000] [3454] [INFO] Starting gunicorn 20.1.0
[2025-01-25 07:02:37 +0000] [3454] [INFO] Listening at: http://0.0.0.0:5000 (3454)
[2025-01-25 07:02:37 +0000] [3454] [INFO] Using worker: sync
[2025-01-25 07:02:37 +0000] [3455] [INFO] Booting worker with pid: 3455
[2025-01-25 07:02:37 +0000] [3456] [INFO] Booting worker with pid: 3456
[2025-01-25 07:02:37 +0000] [3457] [INFO] Booting worker with pid: 3457
```

MINGW64:/d/FCT/DevOps/jenkin/Jenkin/pythonjenkin

```
  GNU nano 8.2                    app.py                    Modified
from flask import Flask
import os
app = Flask(__name__)

@app.route('/')
def hello_geek():
    return 'Created by Sushant Aher learning Jenkin'
@app.route('/hi')
def hell():
    return '<h1>Hiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii from Flask & Docker</h1>'

if __name__ == "__main__":
    port = int(os.environ.get('PORT', 5000))
    app.run(debug=True, host='0.0.0.0', port=port)
```

MINGW64:/d/FCT/DevOps/jenkin/Jenkin/pythonjenkin/test

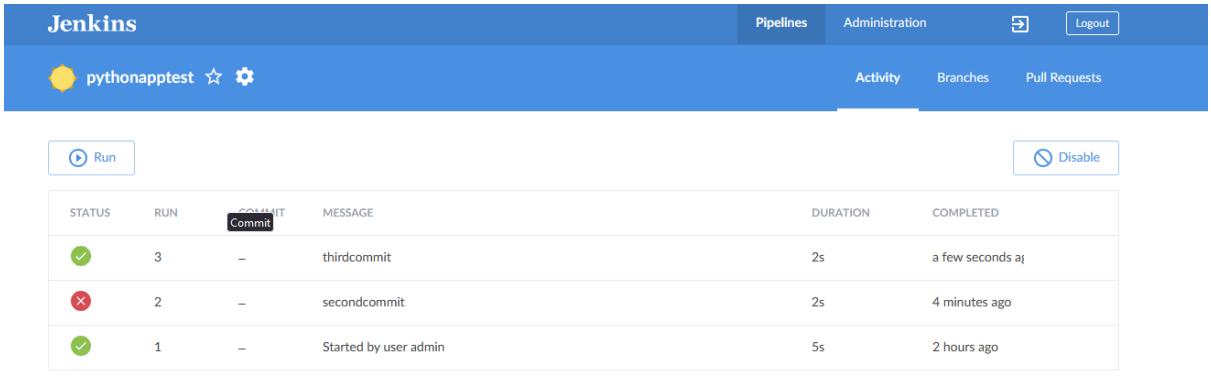
```
  GNU nano 8.2                    test.py                   Modified
import unittest
from app import app

class TestApp(unittest.TestCase):
    def test_home(self):
        tester = app.test_client()
        response = tester.get('/')
        self.assertEqual(response.status_code, 200)
        self.assertEqual(response.data, b"'Created by Sushant Aher learning Jenkin")


if __name__ == "__main__":
    unittest.main()
```

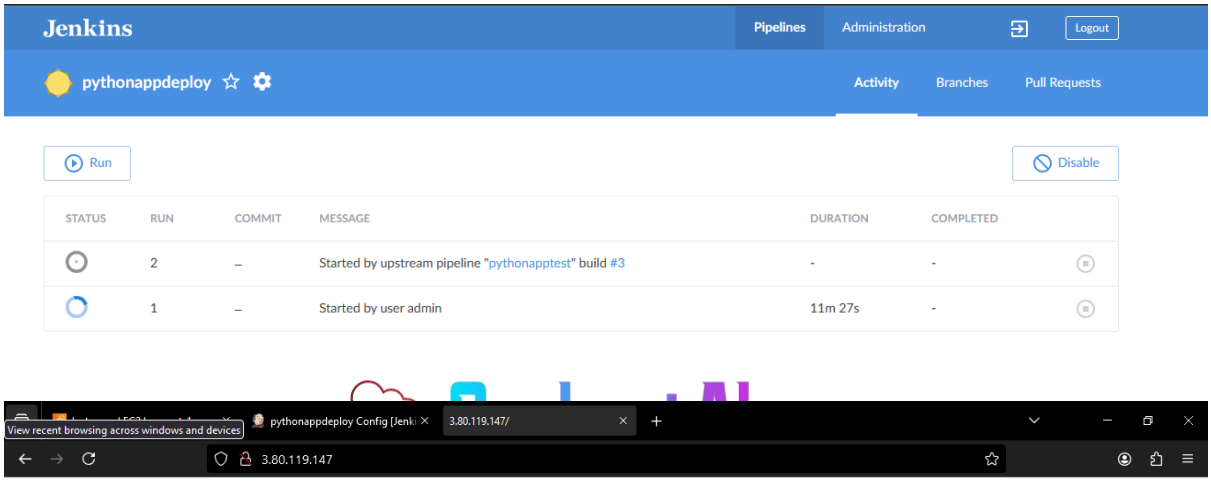
Jenkins | Pipelines | Administration | Logout

pythonappbuild | Activity | Branches | Pull Requests

Run | Disable

STATUS	RUN	COMMIT	MESSAGE	DURATION	COMPLETED
✓	2	–	secondcommit	2s	a few seconds a
✓	1	–	Started by user admin	8s	2 hours ago


Jenkins
Pipelines
Administration
Logout
pythonapptest
Activity
Branches
Pull Requests
Run
Disable
STATUS
RUN
Commit
MESSAGE
DURATION
COMPLETED
3
–
thirdcommit
2s
a few seconds a
2
–
secondcommit
2s
4 minutes ago
1
–
Started by user admin
5s
2 hours ago


Jenkins
Pipelines
Administration
Logout
pythonappdeploy
Activity
Branches
Pull Requests
Run
Disable
STATUS
RUN
COMMIT
MESSAGE
DURATION
COMPLETED
2
–
Started by upstream pipeline "pythonapptest" build #3
-
-
1
–
Started by user admin
11m 27s
-
View recent browsing across windows and devices
pythonappdeploy Config [Jenk
3.80.119.147/
3.80.119.147
SushantAher

CICD pipeline With Nodejs

Jenkins Pipeline is a suite of plugins that support implementing and integrating continuous delivery (CD) pipelines into Jenkins. It allows defining complex build, test, and deployment processes as code.

Types of Pipelines in Jenkins

1. Declarative Pipeline – Uses a predefined structure and syntax.
2. Scripted Pipeline – Uses Groovy scripting for flexibility.

NodeJS with Pipeline:

→ New item
→ Name: nodejswithpipeline
→ Select pipeline
→ Write description
→ Add git link under git section
→ Github hook trigger
→ Pipeline script
→ Hello world
→ Build now
→ Write pipeline script for NodeJS
→ Pipeline syntax sample step checkout: check out from version control
→ Configure node by in Tool
→ Establish Live server and SSH agent from deploy stage.

SushantAher

New Item

Enter an item name

nodejswithpipeline

Select an item type

Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

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

OK

Dashboard > nodejswithpipeline > Configuration

Configure

- General
- Pipeline
- Advanced

General

Enabled

Description

This will be the nodejs pipeline for showing my skills in jenkins pipeline.

Plain text Preview

- [ ] Discard old builds
- [ ] Do not allow concurrent builds
- [ ] Do not allow the pipeline to resume if the controller restarts
- [x] GitHub project

Project url

https://github.com/SushantAher02/nodeappjenkin.git

Save Apply

Pipeline

Define your Pipeline using Groovy directly or pull it from source control.

Definition

Pipeline script

Script ?

Hello World

```
pipeline {
    agent any

    stages {
        stage('Hello') {
            steps {
                echo 'Hello World'
            }
        }
    }
}
```

Jenkins

Search (CTRL+K)

admin log out

Dashboard > nodejswithpipeline > #1 > Pipeline Console

Build #1

Rebuild Overview Configure

Success 13 sec ago in 4.3 sec

Hello

Stage 'Hello'

Started 1 min 14 sec ago

Queued 0 ms

Took 0.16 sec

Success

Running on Jenkins

View as plain text

Hello World

Print Message

12 ms

0 Hello World

Sample Step

checkout: Check out from version control

checkout ?

SCM

Git

Repositories ?

Repository URL ?

https://github.com/SushantAher02/nodepipeline.git

Please enter Git repository.

Pipeline

Define your Pipeline using Groovy directly or pull it from source control.

Definition

Pipeline script

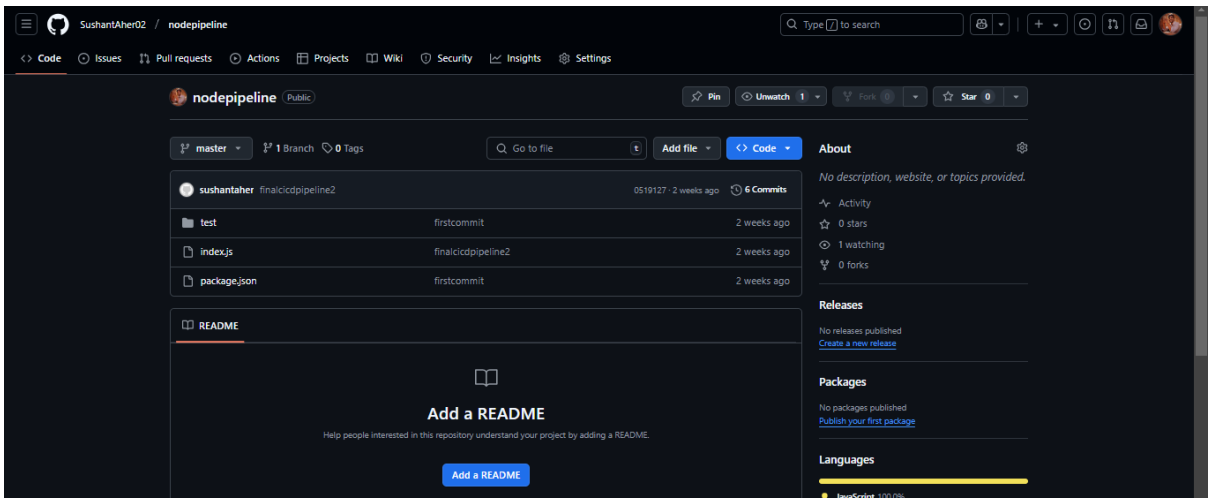
Script ?

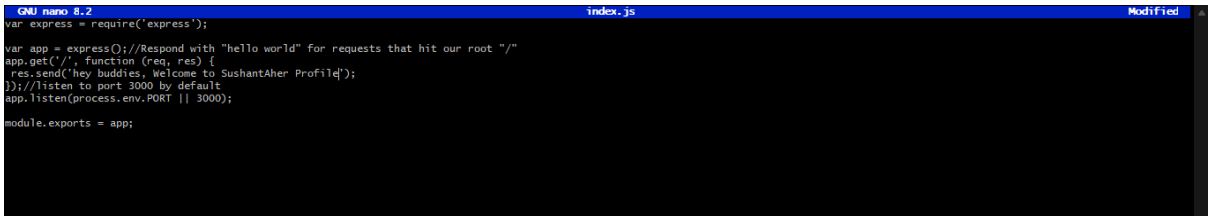
try sample Pipeline...

```
pipeline {
    agent any
    tools{
        nodejs 'mynode'
    }
    stages {
        stage('git cloning') {
            steps {
                echo 'cloning files from github'
                checkout scmGit(branches: [[name: '*/master']], extensions: [], userRemoteConfigs: [[url: 'https://
            }
        }
        stage('Build') {
            steps {
                echo 'Building nodejs project'
                sh 'npm install'
            }
        }
```

Use Groovy Sandbox ?

Save Apply





Script ?

```
pipeline {
    agent any
    tools{
        nodejs 'mynode'
    }
    stages {
        stage('git cloning') {
            steps {
                echo 'cloning files from github'
                checkout scmGit(branches: [[name: '*/master']], extensions: [], userRemoteConfigs: [[url: 'https://
            }
        }
        stage('Build') {
            steps {
                echo 'Building nodejs project'
                sh 'npm install'
            }
        }
        stage('Test') {
            steps {
                echo 'Testing nodejs project'
                sh './node_modules/mocha/bin/_mocha --exit ./test/test.js'
            }
        }
        stage('Deploy') {
            steps {
                echo 'Deploying nodejs project on live server'
            }
        }
    }
}
```

Jenkins

Search (CTRL+K) admin log out

Dashboard > Manage Jenkins > Plugins

Plugins

nodejs

Install

Updates 8

Available plugins

Installed plugins

Advanced settings

Install	Name ↓	Released
✓	NodeJS 1.6.3 npm NodeJS Plugin executes NodeJS script as a build step.	10 days ago

NodeJS

Name

mynode

Install automatically ?

Install from nodejs.org

Version

NodeJS 18.0.0

For the underlying architecture, if available, force the installation of the 32bit package. Otherwise the build will fail

Force 32bit architecture

Build #3

Rebuild Console Configure

Pipeline

Start *Tool Install* git cloning Build Test Deploy End

Details

Manually run by admin

Started 2 min 53 sec ago

Queued 46 ms

Took 34 sec

Jenkins

Search (CTRL+K) admin log out

Dashboard > nodejswithpipeline > #3 > Pipeline Console

Build #3

Rebuild Overview Configure

Success 6 min 37 sec ago in 34 sec

- Tool Install
- git cloning
- Build
- Test
- Deploy

Stage 'Deploy'

Started 6 min 48 sec ago

Queued 0 ms

Took 0.18 sec

Success

Running on Jenkins

View as plain text

mynode
Use a tool from a predefined Tool Installation 43 ms

Fetches the environment variables for a given tool in a list of 'FOO=bar' strings suitable for the with... 43 ms

Deploying nodejs project on live server
Print Message 6 ms

```
ubuntu@ip-172-31-87-242:~$
ubuntu@ip-172-31-87-242:~$ sudo apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
```

```
ubuntu@ip-172-31-87-242:~$ mkdir nodeapp
ubuntu@ip-172-31-87-242:~$ ls
nodeapp
ubuntu@ip-172-31-87-242:~$ cd nodeapp/
ubuntu@ip-172-31-87-242:~/nodeapp$ git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /home/ubuntu/nodeapp/.git/
ubuntu@ip-172-31-87-242:~/nodeapp$
```

```
ubuntu@ip-172-31-87-242:~/nodeapp$ sudo apt install npm
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

```
ubuntu@ip-172-31-87-242:~/nodeapp$ npm --version
9.2.0
ubuntu@ip-172-31-87-242:~/nodeapp$ node --version
v18.19.1
ubuntu@ip-172-31-87-242:~/nodeapp$
```

Jenkins

Search (CTRL+K) admin log out

Dashboard > Manage Jenkins > Plugins

Plugins

- Updates 8
- Available plugins
- Installed plugins
- Advanced settings

ssh

Install

Install	Name ↓	Released
☑	SSH Agent 376.v8933585c69d3 This plugin allows you to provide SSH credentials to builds via a ssh-agent in Jenkins.	6 mo 2 days ago
☐	Publish Over SSH 383.v4eb_4c44da_2dd Artifact Uploaders Build Tools Send build artifacts over SSH	2 mo 10 days ago

3.86.89.188:8080/manage/credentials/store/system/domain/_/

Jenkins

Search (CTRL+K) admin log out

Dashboard > Manage Jenkins > Credentials > System > Global credentials (unrestricted) >

Global credentials (unrestricted)

+ Add Credentials

Credentials that should be available irrespective of domain specification to requirements matching.

ID	Name	Kind	Description
[redacted]	ec2-user	SSH Username with private key	
[redacted]	ec2-user	SSH Username with private key	
[redacted]	ubuntu	SSH Username with private key	

Icon: S M L

Dashboard > nodejswithpipeline > Pipeline Syntax

- Snippet Generator
- Declarative Directive Generator
- Declarative Online Documentation
- Steps Reference
- Global Variables Reference
- Online Documentation
- Examples Reference
- IntelliJ IDEA GDSL

Overview

This **Snippet Generator** will help you learn the Pipeline Script code which can be used to define various steps. Pick a step you are interested in from the list, configure it, click **Generate Pipeline Script**, and you will see a Pipeline Script statement that would call the step with that configuration. You may copy and paste the whole statement into your script, or pick up just the options you care about. (Most parameters are optional and can be omitted in your script, leaving them at default values.)

Steps

Sample Step

sshagent: SSH Agent

sshagent ?

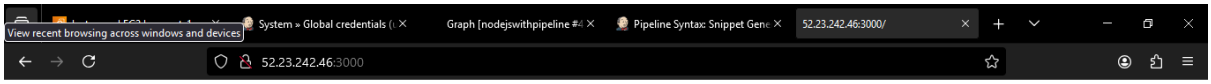
ubuntu ?

+ Add

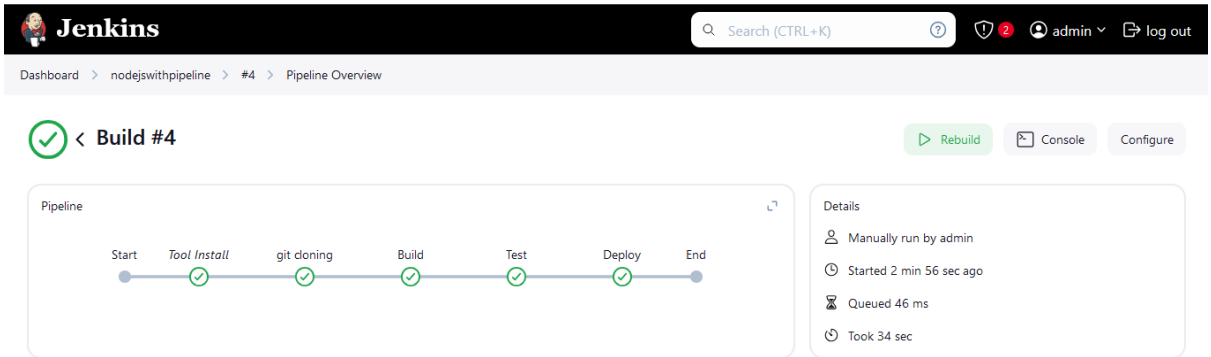
Ignore missing credentials ?

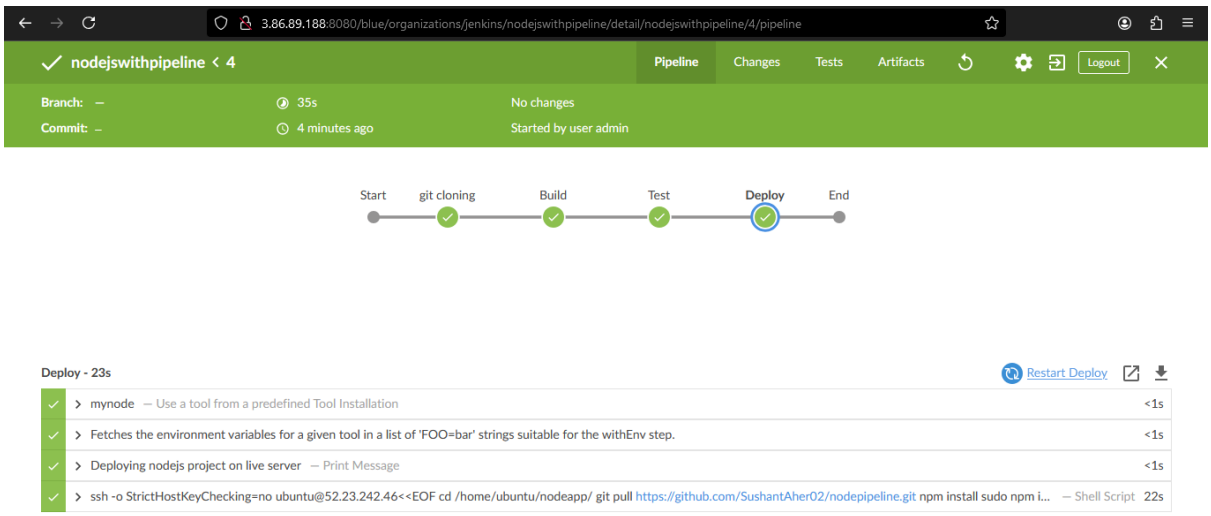
Generate Pipeline Script

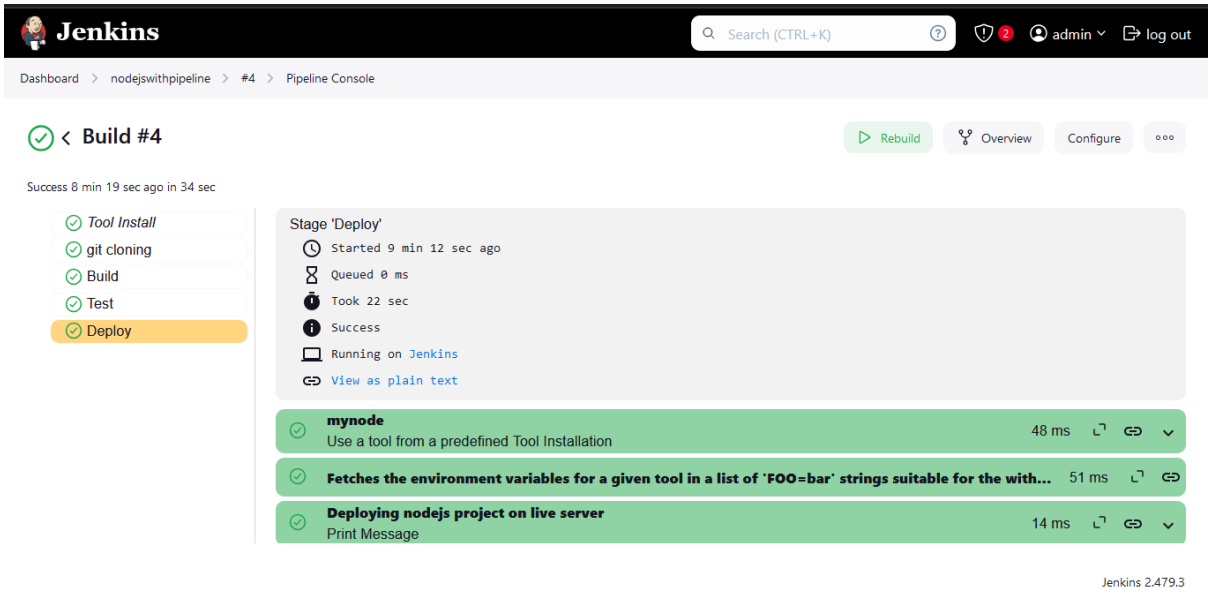
```
    agent any
    tools{
        nodejs 'mynode'
    }
    stages {
        stage('git cloning') {
            steps {
                echo 'cloning files from github'
                checkout scmGit(branches: [[name: '*/master']], extensions: [], userRemoteConfigs: [[url: 'https://
            }
        }
        stage('Build') {
            steps {
                echo 'Building nodejs project'
                sh 'npm install'
            }
        }
        stage('Test') {
            steps {
                echo 'Testing nodejs project'
                sh './node_modules/mocha/bin/_mocha --exit ./test/test.js'
            }
        }
        stage('Deploy') {
            steps {
                echo 'Deploying nodejs project on live server'
                script{
                    sshagent(['4ee59636-d0af-48b9-a509-5fccca72e693']) {
                        sh '''
                            ssh -o StrictHostKeyChecking=no ubuntu@52.23.242.46<<EOF
                            cd /home/ubuntu/nodeapp/
                            git pull https://github.com/SushantAher02/nodepipeline.git
                            npm install
                            sudo npm install -g pm2
                            pm2 restart index.js || pm2 start index.js
                            exit
                            EOF
                            '''

                }
                }
```

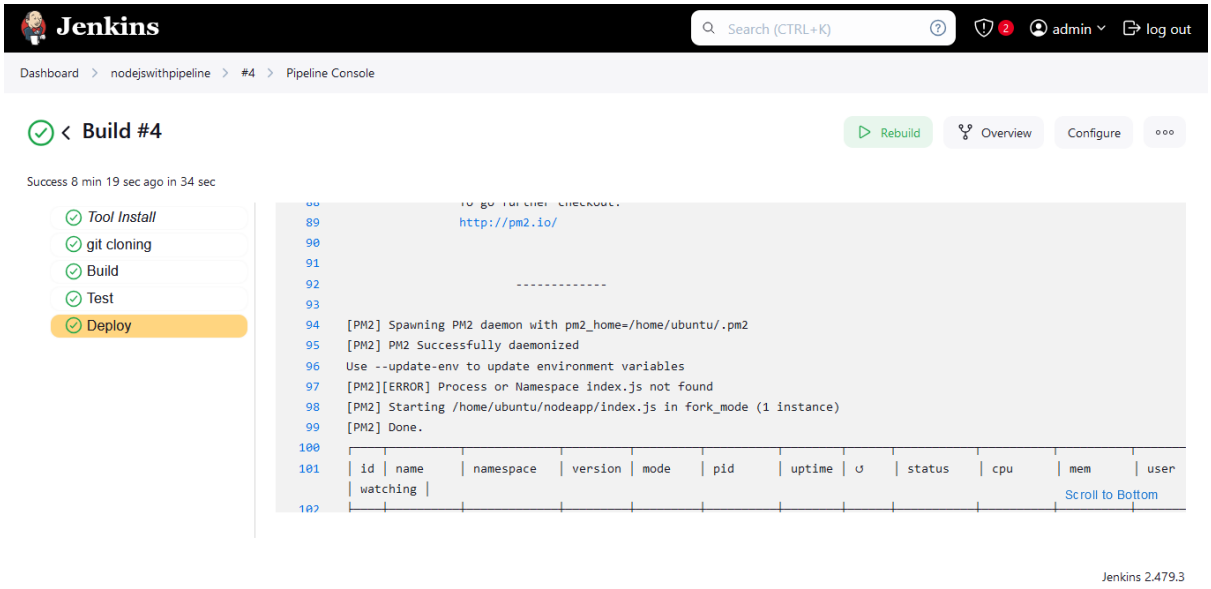


hey buddies, Welcome to SushantAher Profile

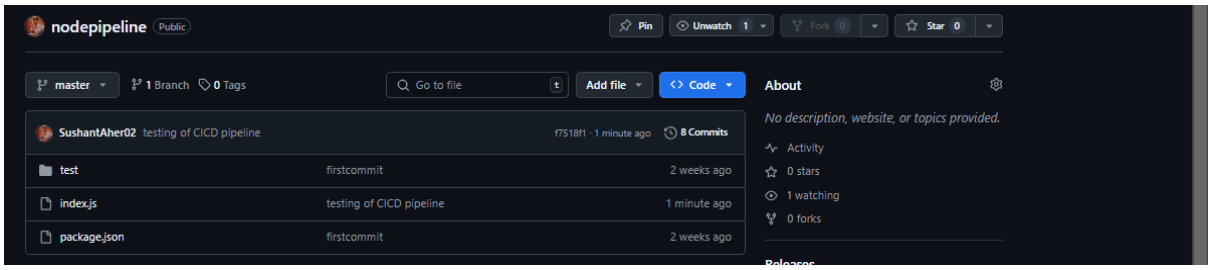


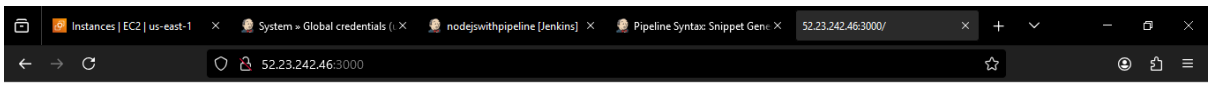






#Again Testing.





hey buddies, Welcome to SushantAher Profile I am learned CICD pipeline