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Assignment 5: CI/CD Continuous Integration and Continuous Delivery

Jenkins Pipeline

Jenkins Pipeline is a suite of plugins which supports implementing and integrating continuous delivery pipelines into Jenkins.

A continuous delivery (CD) pipeline is an automated expression of your process for getting software from version control right through to your users and customers.

- Every change to your software goes through a complex process on its way to being released.
- This process involves building the software in a reliable and repeatable manner, as well as progressing the built software through multiple stages of testing and deployment.

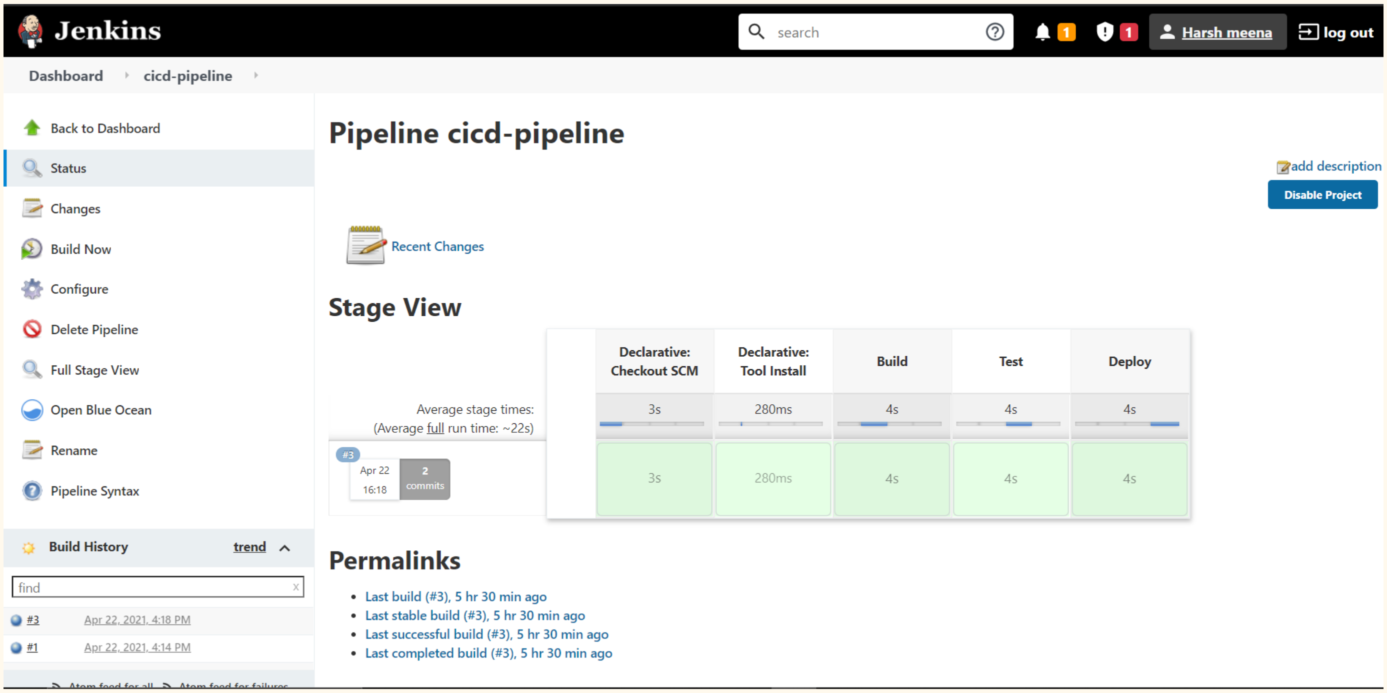
Integrating Jenkins

- We took a very simple software .
- We pushed the code on github repo and then started the main process of
- integrating it with the jenkin server locally.

Steps followed in order to integrate the jenkin server with our software.

- 1. At first we started the jenkin server and navigated to localhost:8080 on
- our local machine.
- 2. Now from this jenkin dashboard we clicked on manage plugins tab and
- navigated to the main settings screen.
- 3. There is an additional step of setting up the go installer in the jenkins

- as we can see from the pic.



Pipeline cicd-pipeline

Stage View

	Declarative: Checkout SCM	Declarative: Tool Install	Build	Test	Deploy
Average stage times: (Average full run time: ~22s)	3s	280ms	4s	4s	4s
#3 Apr 22 16:18 2 commits	3s	280ms	4s	4s	4s

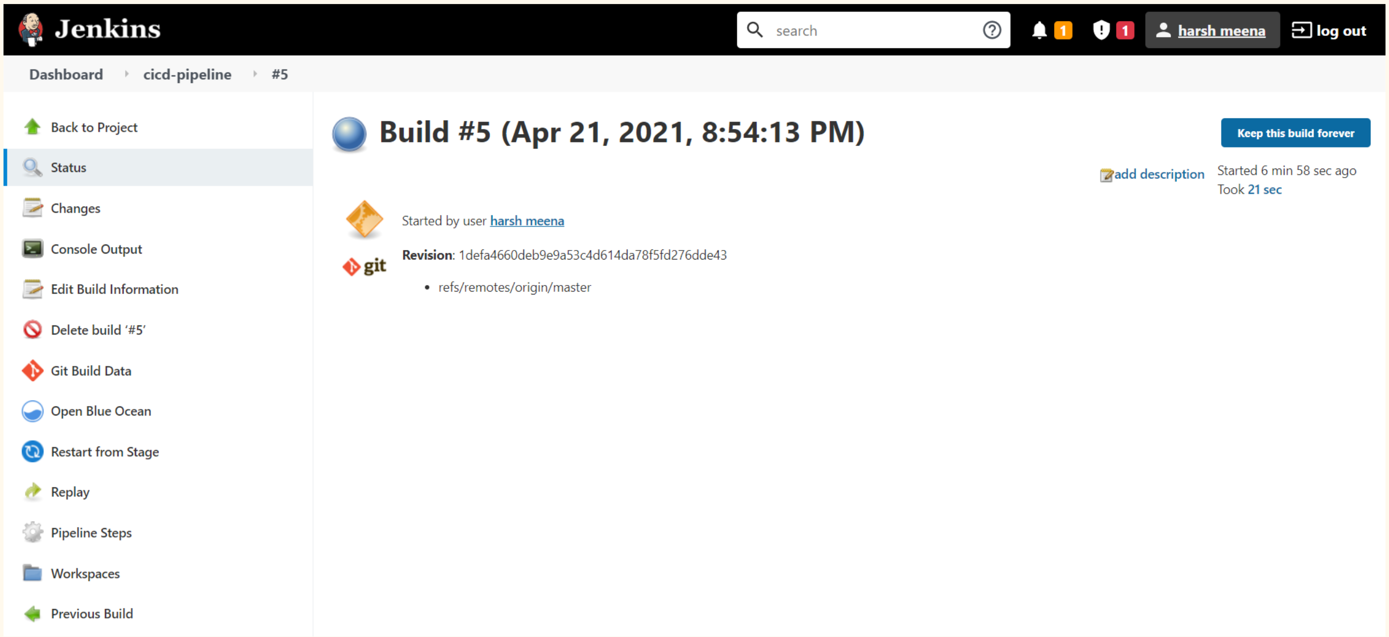
#3	Apr 22, 2021, 4:18 PM
#1	Apr 22, 2021, 4:14 PM

Permalinks

- Last build (#3), 5 hr 30 min ago
- Last stable build (#3), 5 hr 30 min ago
- Last successful build (#3), 5 hr 30 min ago
- Last completed build (#3), 5 hr 30 min ago

Manually tag builds

Jenkins can tag builds automatically as a post build action or you can manually tag of a build. The Tags are stored in the PerforceHelix Core server as automatic labels with the label view based on the workspace at the time of tagging. For information about tagging a build with a Post Build Action.



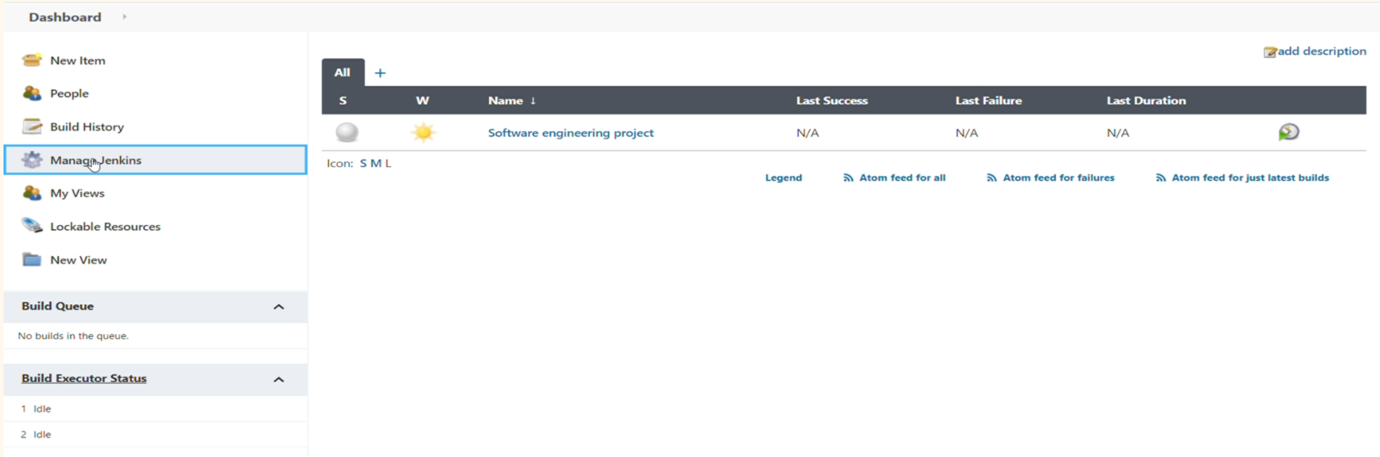
Build #5 (Apr 21, 2021, 8:54:13 PM)

Started 6 min 58 sec ago
Took 21 sec

Started by user harsh meena

Revision: 1defa4660deb9e9a53c4d614da78f5fd276dde43

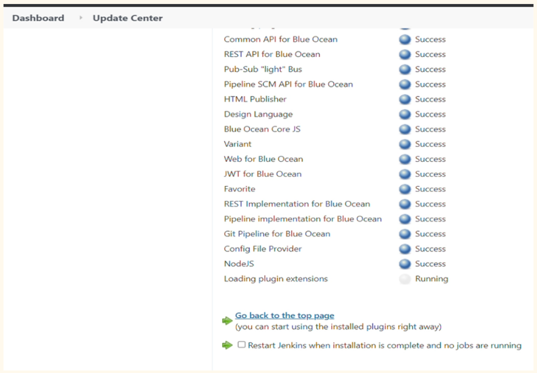
- refs/remotes/origin/master



No builds in the queue.

1 Idle
2 Idle

S	W	Name ↓	Last Success	Last Failure	Last Duration	
○	☀	Software engineering project	N/A	N/A	N/A	

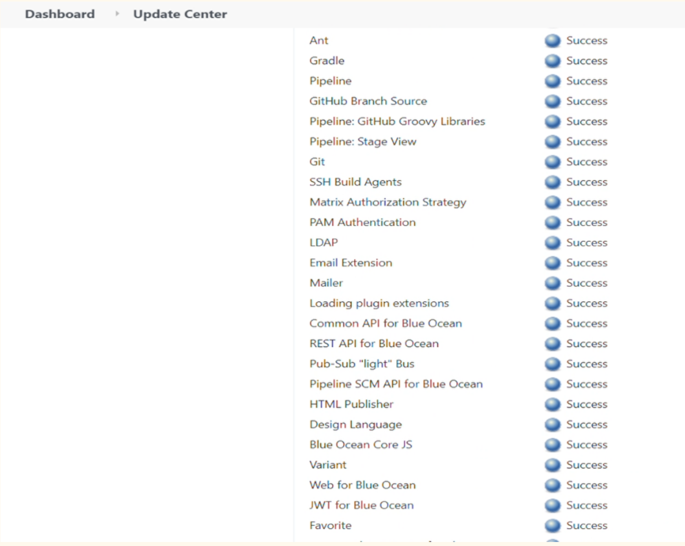


Dashboard › Update Center

Common API for Blue Ocean	Success
REST API for Blue Ocean	Success
Pub-Sub "light" Bus	Success
Pipeline SCM API for Blue Ocean	Success
HTML Publisher	Success
Design Language	Success
Blue Ocean Core JS	Success
Variant	Success
Web for Blue Ocean	Success
JWT for Blue Ocean	Success
Favorite	Success
REST Implementation for Blue Ocean	Success
Pipeline implementation for Blue Ocean	Success
Git Pipeline for Blue Ocean	Success
Config File Provider	Success
NodeJS	Success
Loading plugin extensions	Running

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



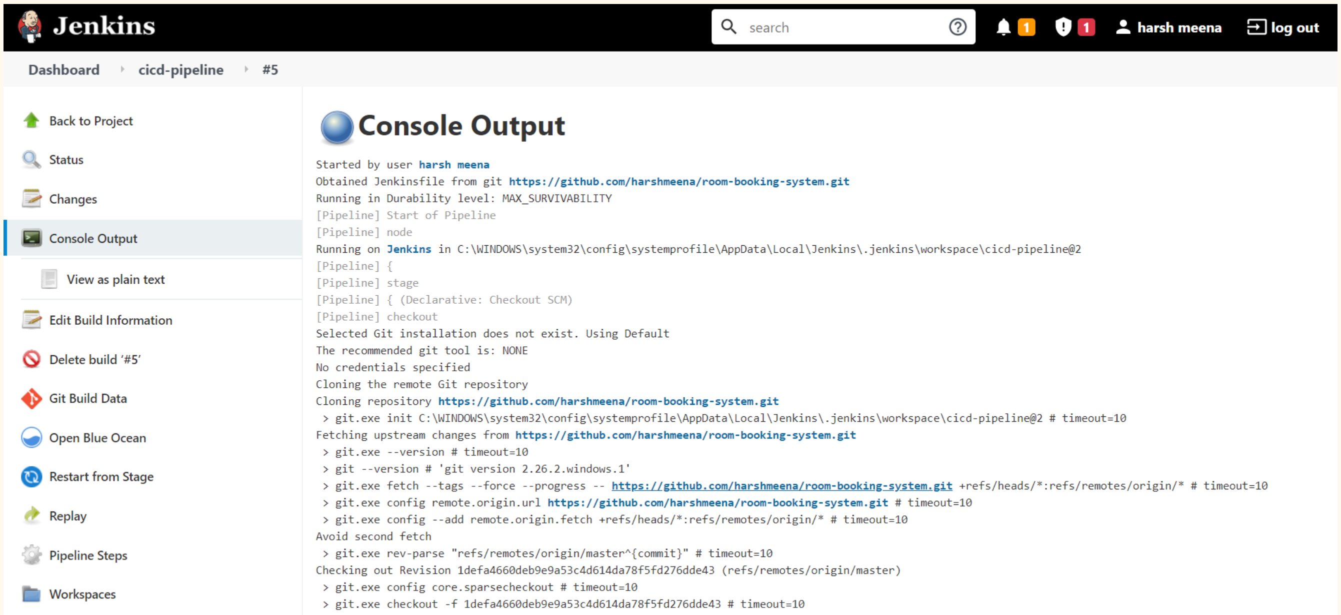
Dashboard › Update Center

Ant	Success
Gradle	Success
Pipeline	Success
GitHub Branch Source	Success
Pipeline: GitHub Groovy Libraries	Success
Pipeline: Stage View	Success
Git	Success
SSH Build Agents	Success
Matrix Authorization Strategy	Success
PAM Authentication	Success
LDAP	Success
Email Extension	Success
Mailer	Success
Loading plugin extensions	Success
Common API for Blue Ocean	Success
REST API for Blue Ocean	Success
Pub-Sub "light" Bus	Success
Pipeline SCM API for Blue Ocean	Success
HTML Publisher	Success
Design Language	Success
Blue Ocean Core JS	Success
Variant	Success
Web for Blue Ocean	Success
JWT for Blue Ocean	Success
Favorite	Success

Console Output: When your build is complete, you can view a detailed log of the build from the console output. If you need to contact Perforce Support about build problems you will need to supply the console output for the build to help them to diagnose any issues.

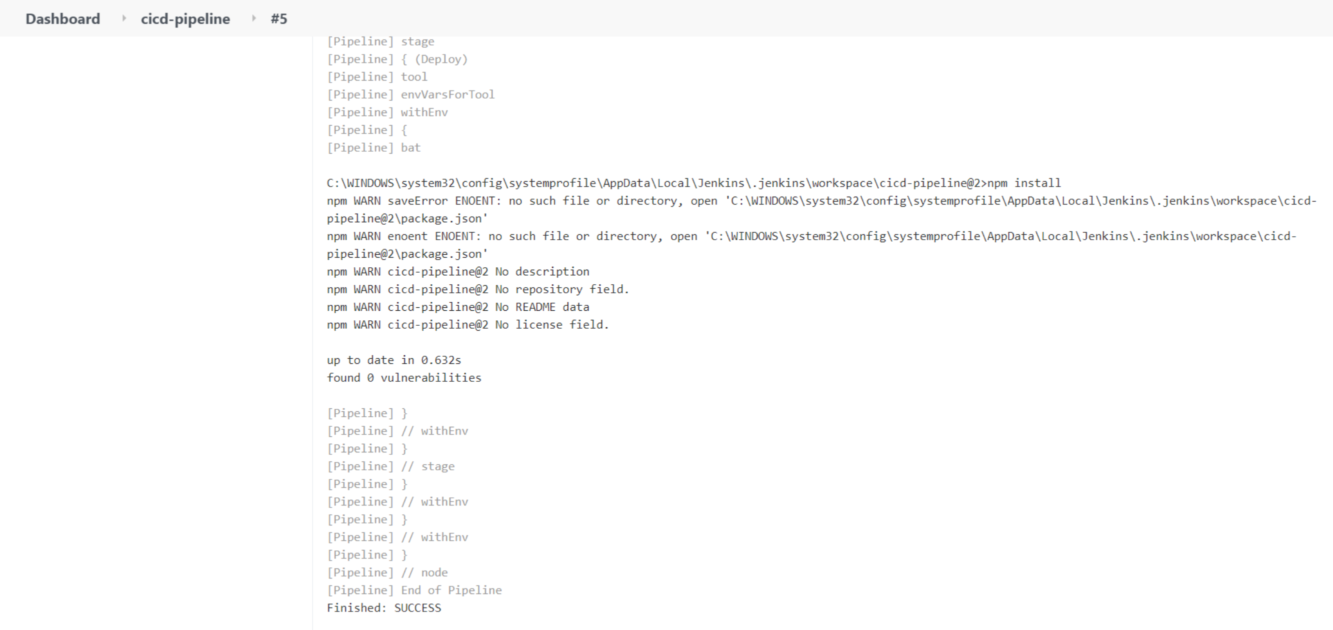
View the console output:

- From the Jenkins dashboard, click the job link name from the table.
- Click the build number in the Build History table in the sidebar.
- Click Console Output in the sidebar menu. The console output is displayed:



Console Output

```
Started by user harsh meena
Obtained Jenkinsfile from git https://github.com/harshmeena/room-booking-system.git
Running in Durability level: MAX_SURVIVABILITY
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in C:\WINDOWS\system32\config\systemprofile\AppData\Local\Jenkins\.jenkins\workspace\cicd-pipeline@2
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Declarative: Checkout SCM)
[Pipeline] checkout
Selected Git installation does not exist. Using Default
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/harshmeena/room-booking-system.git
 > git.exe init C:\WINDOWS\system32\config\systemprofile\AppData\Local\Jenkins\.jenkins\workspace\cicd-pipeline@2 # timeout=10
Fetching upstream changes from https://github.com/harshmeena/room-booking-system.git
 > git.exe --version # timeout=10
 > git --version # 'git version 2.26.2.windows.1'
 > git.exe fetch --tags --force --progress -- https://github.com/harshmeena/room-booking-system.git +refs/heads/*:refs/remotes/origin/* # timeout=10
 > git.exe config remote.origin.url https://github.com/harshmeena/room-booking-system.git # timeout=10
 > git.exe config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
 > git.exe rev-parse "refs/remotes/origin/master^{commit}" # timeout=10
Checking out Revision 1defa4660deb9e9a53c4d614da78f5fd276dde43 (refs/remotes/origin/master)
 > git.exe config core.sparsecheckout # timeout=10
 > git.exe checkout -f 1defa4660deb9e9a53c4d614da78f5fd276dde43 # timeout=10
```



```
[Pipeline] stage
[Pipeline] { (Deploy)
[Pipeline] tool
[Pipeline] envVarsForTool
[Pipeline] withEnv
[Pipeline] {
[Pipeline] bat

C:\WINDOWS\system32\config\systemprofile\AppData\Local\Jenkins\.jenkins\workspace\cicd-pipeline@2>npm install
npm WARN saveError ENOENT: no such file or directory, open 'C:\WINDOWS\system32\config\systemprofile\AppData\Local\Jenkins\.jenkins\workspace\cicd-
pipeline@2\package.json'
npm WARN enoent ENOENT: no such file or directory, open 'C:\WINDOWS\system32\config\systemprofile\AppData\Local\Jenkins\.jenkins\workspace\cicd-
pipeline@2\package.json'
npm WARN cicd-pipeline@2 No description
npm WARN cicd-pipeline@2 No repository field.
npm WARN cicd-pipeline@2 No README data
npm WARN cicd-pipeline@2 No license field.

up to date in 0.632s
found 0 vulnerabilities

[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```