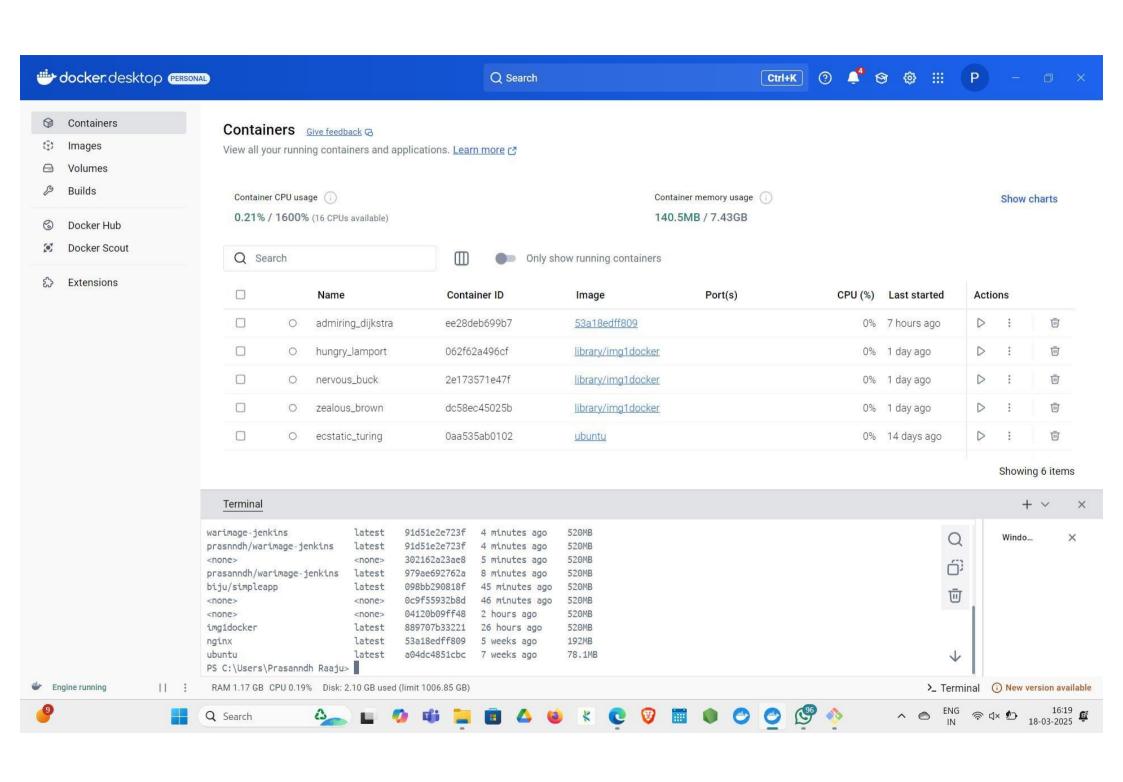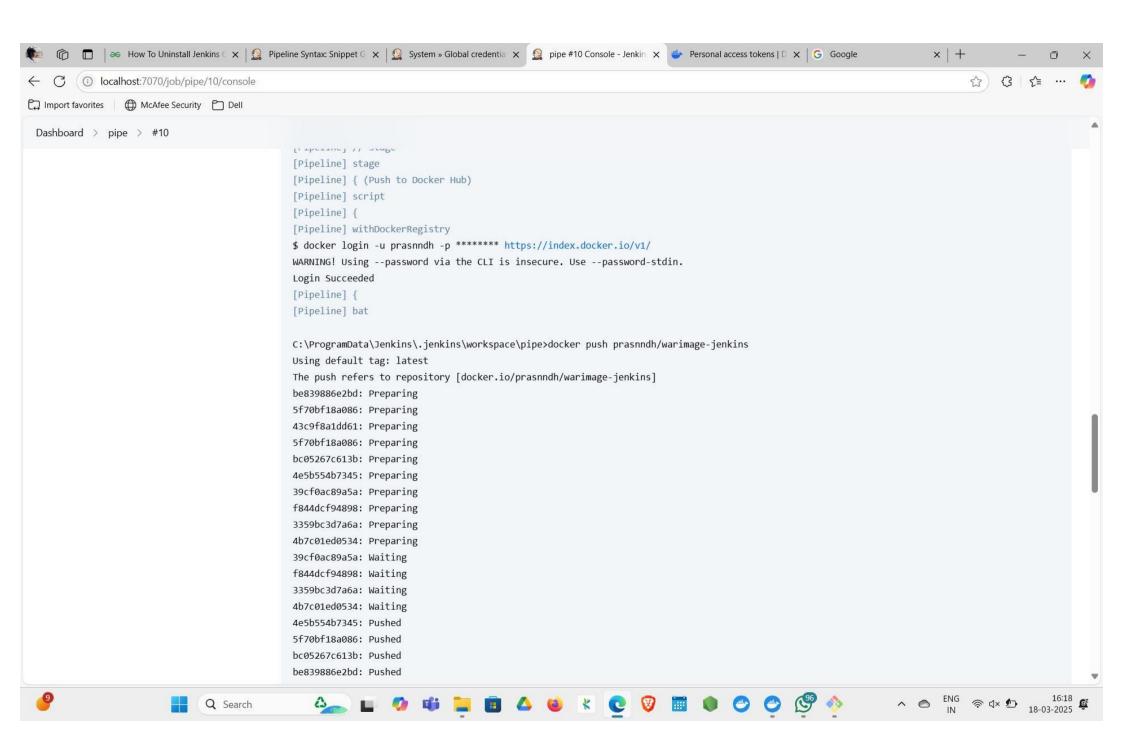DevOps Day 2 – Automation using Jenkins push image from github to docker hub using jenkins automation

docker desktop PERSONAL

Q Search   Ctrl+K

Containers   Give feedback

View all your running containers and applications. Learn more

Container CPU usage (i)	Container memory usage (i)	Show charts
0.16% / 1600% (16 CPUs available)	**140.5MB / 7.43GB**	

Q Search   ▯▯   ⬤ Only show running containers

		Name	Container ID	Image	Port(s)	CPU (%)	Last started	Actions
☐	○	admiring_dijkstra	ee28deb699b7	53a18edff809		0%	7 hours ago	▷ ⋮ 🗑
☐	○	hungry_lamport	062f62a496cf	library/img1docker		0%	1 day ago	▷ ⋮ 🗑
☐	○	nervous_buck	2e173571e47f	library/img1docker		0%	1 day ago	▷ ⋮ 🗑
☐	○	zealous_brown	dc58ec45025b	library/img1docker		0%	1 day ago	▷ ⋮ 🗑
☐	○	ecstatic_turing	0aa535ab0102	ubuntu		0%	14 days ago	▷ ⋮ 🗑

Showing 6 items

Sidebar:
- Containers
- Images
- Volumes
- Builds
- Docker Hub
- Docker Scout
- Extensions

Terminal

```
<none>                  <none>    04120b09ff48   2 hours ago    520MB
img1docker              latest    889707b33221   26 hours ago   520MB
nginx                   latest    53a18edff809   5 weeks ago    192MB
ubuntu                  latest    a04dc4851cbc   7 weeks ago    78.1MB
PS C:\Users\Prasanndh Raaju> docker ls
docker: 'ls' is not a docker command.
See 'docker --help'
PS C:\Users\Prasanndh Raaju> docker ps
CONTAINER ID   IMAGE          COMMAND            CREATED       STATUS        PORTS                    NAMES
d7df4719a60b   04120b09ff48   "catalina.sh run"  2 hours ago   Up 2 hours    0.0.0.0:8888->8080/tcp   war-container
PS C:\Users\Prasanndh Raaju>
```

Windo... ✕

Engine running || ⋮   RAM 1.16 GB   CPU 0.25%   Disk: 2.10 GB used (limit 1006.85 GB)   >_ Terminal   (i) New version available

Q Search   Ctrl+K

Containers

- Containers
- Images
- Volumes
- Builds

- Docker Hub
- Docker Scout

- Extensions

Containers Give feedback

View all your running containers and applications. Learn more

Container CPU usage (i)

0.21% / 1600% (16 CPUs available)

Container memory usage (i)

140.5MB / 7.43GB

Show charts

Q Search   Only show running containers

		Name	Container ID	Image	Port(s)	CPU (%)	Last started	Actions
☐	○	admiring_dijkstra	ee28deb699b7	53a18edff809		0%	7 hours ago	▷ ⋮ 🗑
☐	○	hungry_lamport	062f62a496cf	library/img1docker		0%	1 day ago	▷ ⋮ 🗑
☐	○	nervous_buck	2e173571e47f	library/img1docker		0%	1 day ago	▷ ⋮ 🗑
☐	○	zealous_brown	dc58ec45025b	library/img1docker		0%	1 day ago	▷ ⋮ 🗑
☐	○	ecstatic_turing	0aa535ab0102	ubuntu		0%	14 days ago	▷ ⋮ 🗑

Showing 6 items

Terminal

```
warimage-jenkins              latest    91d51e2e723f    4 minutes ago     520MB
prasnndh/warimage-jenkins     latest    91d51e2e723f    4 minutes ago     520MB
<none>                        <none>    302162a23ae8    5 minutes ago     520MB
prasanndh/warimage-jenkins    latest    979ae692762a    8 minutes ago     520MB
biju/simpleapp                latest    098bb290818f    45 minutes ago    520MB
<none>                        <none>    0c9f55932b8d    46 minutes ago    520MB
<none>                        <none>    04120b09ff48    2 hours ago       520MB
img1docker                    latest    889707b33221    26 hours ago      520MB
nginx                         latest    53a18edff809    5 weeks ago       192MB
ubuntu                        latest    a04dc4851cbc    7 weeks ago       78.1MB
PS C:\Users\Prasanndh Raaju>
```

Windo... ×

🐳 Engine running || ⋮   RAM 1.17 GB CPU 0.19%   Disk: 2.10 GB used (limit 1006.85 GB)   >_ Terminal   (i) New version available

```
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Push to Docker Hub)
[Pipeline] script
[Pipeline] {
[Pipeline] withDockerRegistry
$ docker login -u prasnndh -p ******** https://index.docker.io/v1/
WARNING! Using --password via the CLI is insecure. Use --password-stdin.
Login Succeeded
[Pipeline] {
[Pipeline] bat

C:\ProgramData\Jenkins\.jenkins\workspace\pipe>docker push prasnndh/warimage-jenkins
Using default tag: latest
The push refers to repository [docker.io/prasnndh/warimage-jenkins]
be839886e2bd: Preparing
5f70bf18a086: Preparing
43c9f8a1dd61: Preparing
5f70bf18a086: Preparing
bc05267c613b: Preparing
4e5b554b7345: Preparing
39cf0ac89a5a: Preparing
f844dcf94898: Preparing
3359bc3d7a6a: Preparing
4b7c01ed0534: Preparing
39cf0ac89a5a: Waiting
f844dcf94898: Waiting
3359bc3d7a6a: Waiting
4b7c01ed0534: Waiting
4e5b554b7345: Pushed
5f70bf18a086: Pushed
bc05267c613b: Pushed
be839886e2bd: Pushed
```

localhost:7070/job/pipe/configure

Import favorites   McAfee Security   Dell

Dashboard > pipe > Configuration

Configure

- ⚙ General
- ⏱ Triggers
- ⤴ **Pipeline**
- 🔧 Advanced

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

Definition

Pipeline script   ∨

Script ?

```
 1 ▾ pipeline {
 2       agent any
 3
 4 ▾     stages {
 5 ▾         stage('Clone Git Repository') {
 6 ▾             steps {
 7                   git branch: 'main', url: 'https://github.com/PrasanndhRaaju-MR/DevOps.git'
 8               }
 9           }
10
11 ▾         stage('Build WAR File') {
12 ▾             steps {
13                   bat 'mvn clean package'  // Build WAR file using Maven
14               }
15           }
16
17 ▾         stage('Build Docker Image') {
```

✅ Use Groovy Sandbox ?

Pipeline Syntax

Advanced

Advanced ∨

Save   Apply

← C ⓘ localhost:7070/job/pipe/

Import favorites | McAfee Security | Dell

Jenkins

Q 🛡️ 1 👤 Prasanndh Raaju M R ∨ ➔ log out

Dashboard > pipe >

🗐 Status	✅ **pipe**
</> Changes	
▷ Build Now	**Permalinks**
⚙️ Configure	• Last build (#4), 1 min 49 sec ago
🗑️ Delete Pipeline	• Last stable build (#4), 1 min 49 sec ago
🐟 Stages	• Last successful build (#4), 1 min 49 sec ago
✏️ Rename	• Last failed build (#3), 4 min 27 sec ago
? Pipeline Syntax	• Last unsuccessful build (#3), 4 min 27 sec ago
	• Last completed build (#4), 1 min 49 sec ago

✏️ Add description

Builds   ∘∘∘ ⌐⌐

🔍 Filter   /

Today

✅ #4 2:41 PM   ∨
❌ #3 2:39 PM   ∨
❌ #2 2:31 PM   ∨
❌ #1 2:25 PM   ∨

localhost:7070/job/pipe/multi-pipeline-graph

REST API   Jenkins 2.501

🔥 8   ⊞ Q Search   ♻️ 📘 🟦 ✳️ 📊 📁 🗄️ 🔺 🦊 ⓚ 🔵 🛡️ 🗓️ 📦 🟠 🟠 💬 96 🔶   ∧ ☁️ ENG 🔊 ◀× ▢ 14:43 18-03-2025

```
#6 DONE 0.1s

#7 exporting to image
#7 exporting layers 0.1s done
#7 writing image sha256:04120b09ff485a72bfd1c54b7bcd890dc36384270905295ffde32d5d7e2b0603 done
#7 naming to docker.io/library/warimage-jenkins 0.0s done
#7 DONE 0.1s
[Pipeline] }
[Pipeline] // script
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Run Docker Container)
[Pipeline] script
[Pipeline] {
[Pipeline] bat

C:\ProgramData\Jenkins\.jenkins\workspace\pipe>docker run -d -p 8888:8080 --name war-container warimage-jenkins
d7df4719a60b728f2dec4a681c05813e7c90dd9bbaa208eea5c2472fa5043c14
[Pipeline] }
[Pipeline] // script
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

REST API   Jenkins 2.501

JENKINS

Jenkins is an open-source automation tool written in Java programming language that allows continuous integration. Jenkins offers a straightforward way to set up a continuous integration or continuous delivery environment for almost any combination of languages and source code repositories using pipelines, as well as automating other routine development tasks.

The following are the main or most popular Jenkins use cases:

● Continuous Integration: With Jenkins pipelines, we can achieve CI for both applications and infrastructure as code.

● Continuous Delivery: You can set up well-defined and automated application delivery workflows with Jenkins pipelines.

Jenkins achieves CI (Continuous Integration) and CD (Continuous Deployment) with the help of plugins. Plugins are used to allow the integration of various DevOps stages. If you want to integrate a particular tool, you must install the plugins for that tool.

docker

___
```
# sudo apt install docker.io -y
# sudo service docker restart
# sudo service docker status

# sudo usermod -aG docker $USER

docker images
docker ps

# sudo chmod 666 /var/run/docker.sock
curl -LO https://dl.k8s.io/release/v1.32.0/bin/linux/amd64/kubectl
sudo install -o root -g root -m 0755 kubectl /usr/local/bin/kubectl
chmod +x kubectl
mkdir -p ~/.local/bin
mv ./kubectl ~/.local/bin/kubectl
kubectl version –client
udo install -o root -g root -m 0755 kubectl /usr/local/bin/kubectl


chmod +x kubectl
mkdir -p ~/.local/bin
mv ./kubectl ~/.local/bin/kubectl

kubectl version –client
```

Pipeline code
```
pipeline {
    agent any
    tools {maven "maven"}
    stages {
        stage('SCM') {
            steps {
                git branch: 'master', url: 'https://github.com/PrasanndhRaaju-MR/DevOps.git'
            }
        }
        stage('Build') {
            steps {
                sh 'mvn clean package'
            }
```

```
        }
        stage('build to images') {
            steps {
                script {
                    sh 'docker build -t prasnndh/webapp1 .'
                }
            }
        }
        stage('push to hub') {
            steps {
                script {
                    withDockerRegistry(credentialsId: 'docker_cred', toolName: 'docker', url: 'https://index.docker.io/v1/') {
                        sh 'docker push prasnndh/webapp1'
                    }
                }
            }
        }
    }

}
}
```