

Prerequisites for Lab 6

Before performing Lab–6: Jenkins CI/CD with Docker & NGINX, students must ensure the following software and configurations are available and working on their system.

Basic System Requirements:

- Windows / Linux / macOS
- Minimum 8 GB RAM recommended
- Stable Internet Connection

1. Docker Installation

Docker must be installed and running on the system.

docker --version

docker ps

Docker daemon should be running without errors.

2. Git Installation

Git is required to clone and pull the project repository.

git --version

3. Jenkins Setup

Jenkins must be executed inside a Docker container with Docker socket access.

Command to Run Jenkins

- **docker pull jenkins/jenkins:lts**
- **docker build -t jenkins-docker -f Dockerfile.jenkins .**
- **docker run -d **
 **--name jenkins **
 **-p 8080:8080 **
 **-p 50000:50000 **
 **-v jenkins_home:/var/jenkins_home **

```
-v /var/run/docker.sock:/var/run/docker.sock \
--user root \
jenkins/jenkins:lts
```

4. Jenkins Access

- Open browser and navigate to:

`http://localhost:8080`

- Retrieve initial admin password using:

```
docker exec jenkins cat /var/jenkins_home/secrets/initialAdminPassword
```

- Complete Jenkins initial setup.

5. Required Jenkins Plugins

The following plugins must be installed:

- Git
- Pipeline
- Docker Pipeline

6. GitHub Repository

- Repository must be public
- Repository must contain all required lab files
- Jenkinsfile must be present in the root directory

7. Required Folder Structure

The repository should follow the structure shown below:

```
CC_LAB-6/
├── backend/
│   ├── Dockerfile
│   └── app.cpp
├── nginx/
│   └── default.conf
└── Jenkinsfile
```

8. Docker Image Availability

Ensure the following images can be pulled:

docker pull nginx

docker pull jenkins/jenkins:lts

9. Final Pre-Lab Checklist

- Docker is running
- Jenkins container is running
- Jenkins UI accessible on port 8080
- GitHub repository is accessible
- Jenkinsfile is syntactically correct

Note:

Without the mentioned prerequisites, you cannot proceed with the lab.