

CI/CD Pipeline – Complete Linux Commands Guide

1. System Update

Command: `sudo apt update && sudo apt upgrade -y`

Error: `dpkg lock error`

Fix: `sudo rm /var/lib/dpkg/lock*`

2. Java Installation

Command: `sudo apt install openjdk-17-jdk -y`

Verify: `java -version`

Error: `java not found` → Install Java again

3. Maven Installation

Command: `sudo apt install maven -y`

Verify: `mvn -version`

Error: `mvn not found` → PATH issue

4. Git Installation

Command: `sudo apt install git -y`

Verify: `git --version`

5. Docker Installation

Command: `sudo apt install docker.io -y`

Start: `sudo systemctl start docker`

Permission error fix: `sudo usermod -aG docker $USER`

6. Jenkins Installation

Command: `sudo apt install jenkins -y`

Start: `sudo systemctl start jenkins`

Access: `http://localhost:8080`

Error: Port blocked → `sudo ufw allow 8080`

7. Maven Project Creation

Command: `mvn archetype:generate`

Build: mvn clean package

8. Git Initialization

Commands: git init, git add ., git commit -m 'initial commit'

9. Docker Build & Run

Build Image: docker build -t myapp .

Run: docker run myapp

Error: Dockerfile not found → wrong directory

10. Docker Push

Login: docker login

Push: docker push username/myapp:tag

11. Docker Swarm

Init: docker swarm init

Deploy: docker service create --name app username/myapp

Error: swarm inactive → init swarm

12. Jenkins Pipeline

Jenkins automatically clones Git repo using credentials

Pipeline stages: Clone → Build → Docker → Push → Deploy