

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