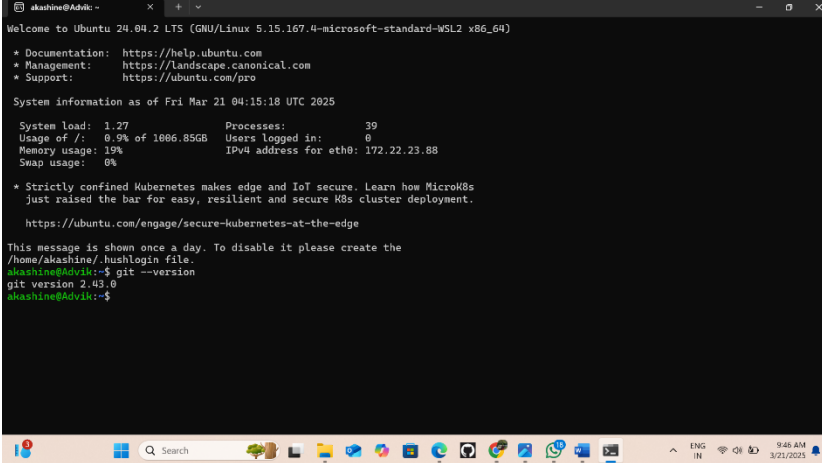


DEVOPS

DAY 3 Task

Git installation

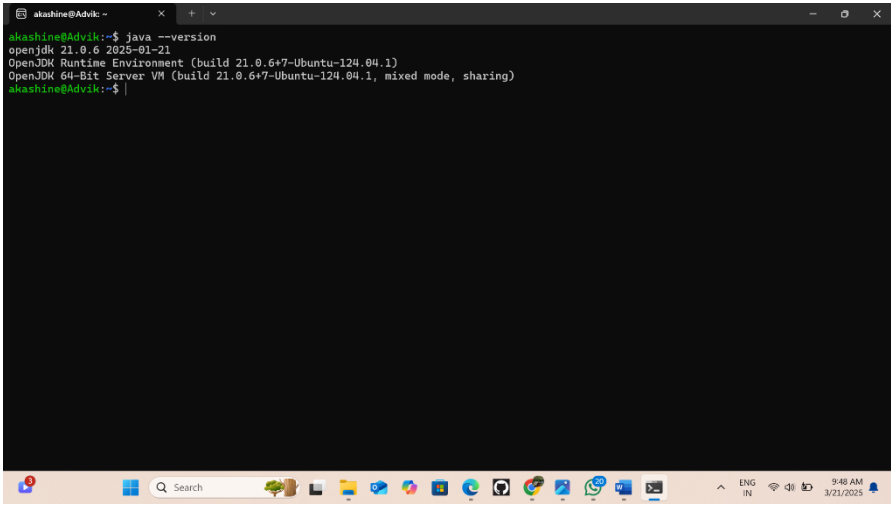
1. sudo apt update
2. sudo apt install git
3. git --version
4. git config --global user.name "Your Name"
5. git config --global user.email "your.email@example.com"



```
akashine@Advik: ~  
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 5.15.167.4-microsoft-standard-WSL2 x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/pro  
  
System information as of Fri Mar 21 04:15:18 UTC 2025  
  
System load:  1.27          Processes:      39  
Usage of /:   0.9% of 1086.85GB  Users logged in:  0  
Memory usage: 19%          IPv4 address for eth0: 172.22.23.88  
Swap usage:   0%  
  
* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s  
  just raised the bar for easy, resilient and secure K8s cluster deployment.  
  https://ubuntu.com/engage/secure-kubernetes-at-the-edge  
  
This message is shown once a day. To disable it please create the  
/home/akashine/.hushlogin file.  
akashine@Advik:~$ git --version  
git version 2.43.0  
akashine@Advik:~$
```

JDK installation

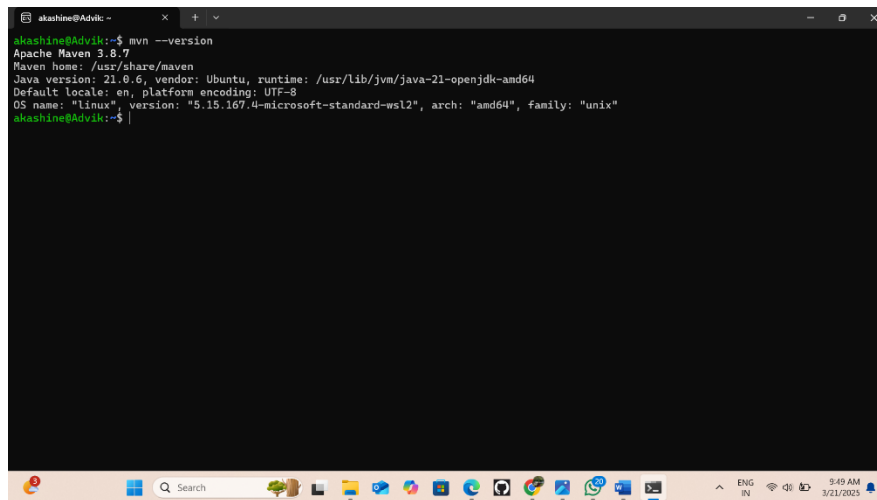
1. sudo apt update
2. sudo apt upgrade -y
3. sudo apt install default-jdk -y
4. java -version



```
akashine@Advik: ~  
akashine@Advik:~$ java --version  
openjdk 21.0.6 2025-01-21  
OpenJDK Runtime Environment (build 21.0.6+7-Ubuntu-124.04.1)  
OpenJDK 64-Bit Server VM (build 21.0.6+7-Ubuntu-124.04.1, mixed mode, sharing)  
akashine@Advik:~$
```

Maven installation

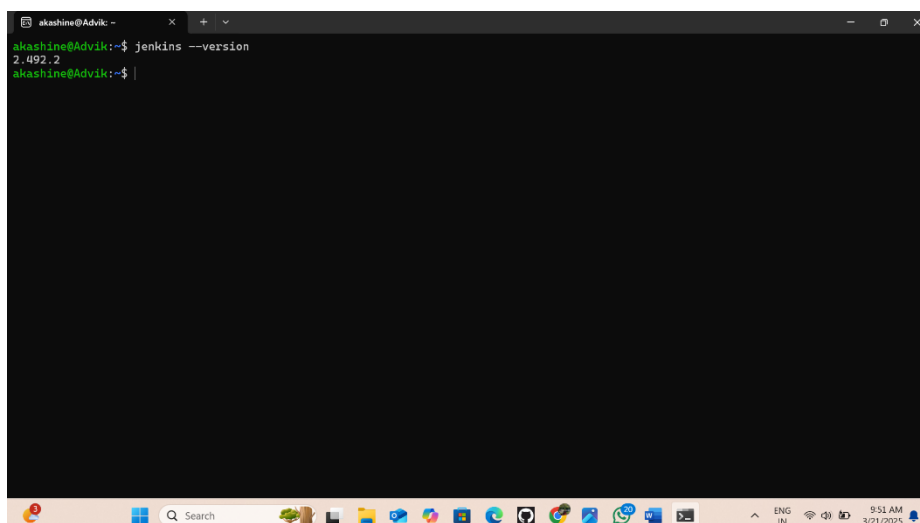
1. `sudo apt install maven -y`
2. `mvn -version`

A terminal window titled 'akashine@Advik: ~' showing the output of the 'mvn --version' command. The output displays Maven 3.8.7 details, including the home directory, Java version (21.0.6), vendor (Ubuntu), runtime, default locale, platform encoding, OS name, version, architecture, and family.

```
akashine@Advik:~$ mvn --version
Apache Maven 3.8.7
Maven home: /usr/share/maven
Java version: 21.0.6, vendor: Ubuntu, runtime: /usr/lib/jvm/java-21-openjdk-amd64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "5.15.167.4-microsoft-standard-WSL2", arch: "amd64", family: "unix"
akashine@Advik:~$
```

Jenkins installation

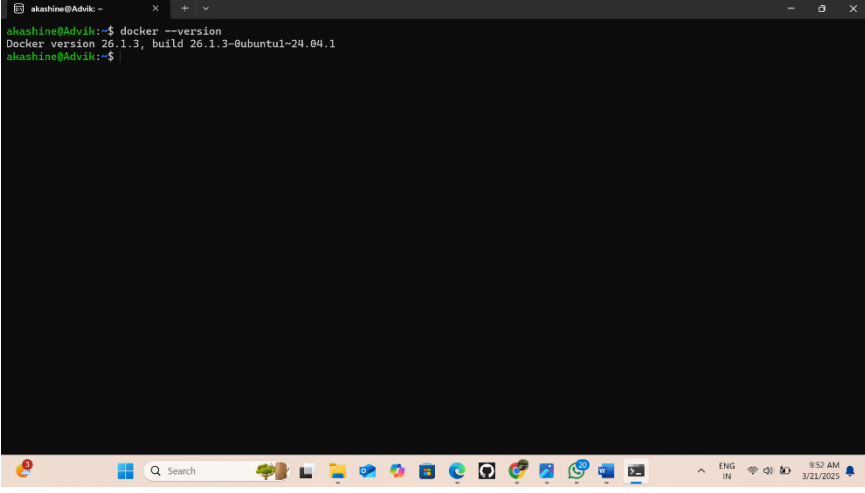
1. `sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \ https://pkg.jenkins.io/debian-stable/jenkins.io-2023.keyecho "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc]" \ https://pkg.jenkins.io/debian-stable binary/ | sudo tee \ /etc/apt/sources.list.d/jenkins.list > /dev/nullsudo apt-get updatesudo apt-get install jenkins`
2. `sudo service Jenkins restart`
3. `sudo service Jenkins status`
4. `sudo cat /var/lib/jenkins/secrets/initialAdminPassword`

A terminal window titled 'akashine@Advik: ~' showing the output of the 'jenkins --version' command. The output displays Jenkins version 2.492.2.

```
akashine@Advik:~$ jenkins --version
2.492.2
akashine@Advik:~$
```

Docker installation

1. `sudo apt install docker-compose -y`
2. `sudo service docker restart`
3. `sudo service docker status`
4. `sudo usermod -aG docker $USER`
5. `docker images`
6. `docker ps`
7. `sudo chmod 666 /var/run/docker.sock`

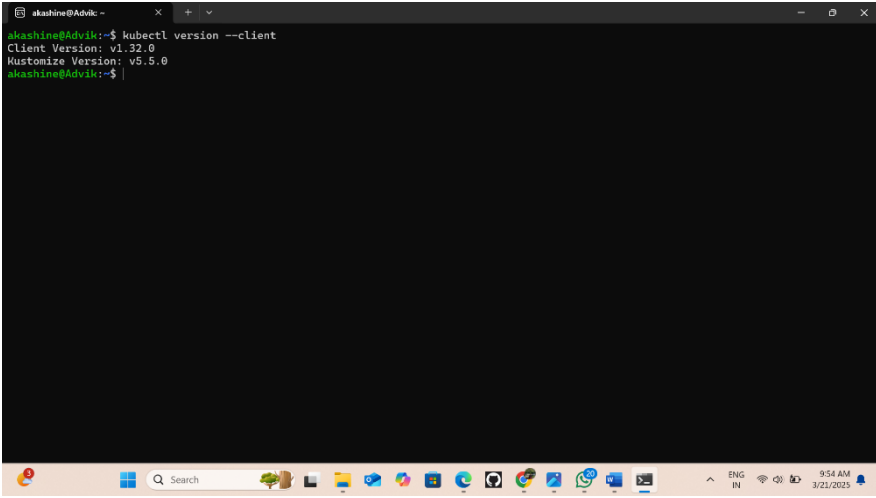


```
akashine@Advik: ~$ docker --version
Docker version 26.1.3, build 26.1.3-0ubuntu1-24.04.1
akashine@Advik: ~$
```

A terminal window titled 'akashine@Advik: ~' showing the command `docker --version` being executed. The output is 'Docker version 26.1.3, build 26.1.3-0ubuntu1-24.04.1'. The prompt returns to `akashine@Advik: ~$`. The terminal is running on a Linux desktop environment with a taskbar at the bottom showing various application icons and system status indicators like 'ENG IN' and '9:52 AM 3/21/2025'.

Kubernetes installation

1. Go to <https://kubernetes.io/docs/tasks/tools/install-kubectl-linux/>
2. `curl -LO https://dl.k8s.io/release/v1.32.0/bin/linux/amd64/kubectl`
3. `sudo install -o root -g root -m 0755 kubectl /usr/local/bin/kubectl`
4. `chmod +x kubectl`
`mkdir -p ~/.local/bin`
`mv ./kubectl ~/.local/bin/kubectl`
5. `kubectl version --client`

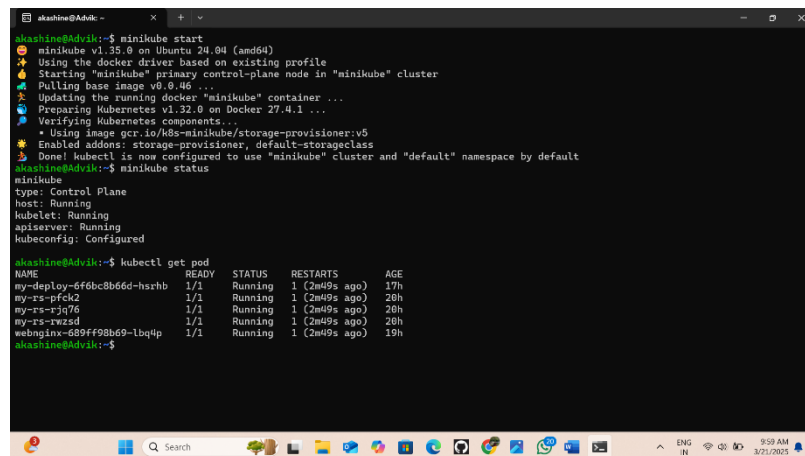


```
akashine@Advik: ~$ kubectl version --client
Client Version: v1.32.0
Kustomize Version: v5.5.0
akashine@Advik: ~$
```

A terminal window titled 'akashine@Advik: ~' showing the command `kubectl version --client` being executed. The output shows 'Client Version: v1.32.0' and 'Kustomize Version: v5.5.0'. The prompt returns to `akashine@Advik: ~$`. The terminal is running on the same Linux desktop environment as the previous screenshot.

Minikube installation

1. Go to <https://minikube.sigs.k8s.io/docs/start/?arch=%2Fwindows%2Fx86-64%2Fstable%2F.exe+download>
2. `curl -LO https://github.com/kubernetes/minikube/releases/latest/download/minikube-linux-amd64`
3. `sudo install minikube-linux-amd64 /usr/local/bin/minikube && rm minikube-linux-amd64`
4. `minikube start`
5. `minikube status`
6. `kubectl get pod`
7. `kubectl get deploy`
8. `kubectl get replica or rs or replicaaset`
9. `kubectl get pod -o wide`

A screenshot of a terminal window titled 'akashine@Advic: ~'. The terminal shows the execution of 'minikube start' and 'minikube status'. The 'minikube start' command outputs a series of progress messages: 'minikube v1.35.0 on Ubuntu 24.04 (amd64)', 'Using the docker driver based on existing profile', 'Starting "minikube" primary control-plane node in "minikube" cluster', 'Pulling base image v0.0.46 ...', 'Updating the running docker "minikube" container ...', 'Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...', and 'Verifying Kubernetes components...'. It then shows 'Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default'. The 'minikube status' command outputs a summary: 'minikube type: Control Plane, host: Running, kubelet: Running, apiserver: Running, kubeconfig: Configured'. Finally, the 'kubectl get pod' command is executed, showing a table of pods with columns NAME, READY, STATUS, RESTARTS, and AGE. The table lists five pods: my-deploy-6f6bc0b66d-hsrhb, my-rs-pfck2, my-rs-rjq76, my-rs-rwzsd, and webengine-689ff98b69-lbq4p, all in a 'Running' state.

```
akashine@Advic:~$ minikube start
minikube v1.35.0 on Ubuntu 24.04 (amd64)
Using the docker driver based on existing profile
Starting "minikube" primary control-plane node in "minikube" cluster
Pulling base image v0.0.46 ...
Updating the running docker "minikube" container ...
Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...
Verifying Kubernetes components...
  * Using image gcr.io/k8s-minikube/storage-provisioner:v5
Enabled addons: storage-provisioner, default-storageclass
Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
akashine@Advic:~$ minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured
akashine@Advic:~$ kubectl get pod
NAME                READY   STATUS    RESTARTS   AGE
my-deploy-6f6bc0b66d-hsrhb  1/1     Running   1 (2m49s ago)    17h
my-rs-pfck2           1/1     Running   1 (2m49s ago)    20h
my-rs-rjq76           1/1     Running   1 (2m49s ago)    20h
my-rs-rwzsd           1/1     Running   1 (2m49s ago)    20h
webengine-689ff98b69-lbq4p  1/1     Running   1 (2m49s ago)    19h
akashine@Advic:~$
```

Docker compose

1. `sudo apt install docker-compose -y`
2. `sudo nano docker-compose.yml`

```
{
  version: '3'

  services:
    web:
      image: nginx:latest
      ports:
        - "80:80"

    db:
      image: mysql:latest
      environment:
        MYSQL_ROOT_PASSWORD: secret
}
```

3. `docker-compose up -d`
4. `docker-compose images`
5. `docker-compose ps`
6. `sudo docker exec -it Akashine_db_1 bash`
7. `mysql -u root -p`

```
akashine@Advik: ~
GNU nano 7.2 docker-compose.yaml
version: '3'

services:
  web:
    image: nginx:latest
    ports:
      - 80:80
  db:
    image: mysql:latest
    environment:
      - MYSQL_ROOT_PASSWORD=secret

[ Read 12 lines ]
^G Help      ^O Write Out ^M Where Is  ^R Cut       ^J Execute   ^C Location  ^U Undo      ^-A Set Mark
^X Exit      ^R Read File ^N Replace   ^P Paste     ^_ Justify   ^/_ Go To Line ^-E Redo     ^-6 Copy
```

```
akashine@Advik: ~$ docker-compose images
WARNING: Found multiple config files with supported names: docker-compose.yaml, docker-compose.yml
WARNING: Using docker-compose.yml

Container      Repository    Tag      Image Id      Size
-----
akashine_db_1  mysql        latest   fa262c3a6564  797 MB
akashine_web_1 nginx        latest   53a18edff809  192 MB
akashine@Advik: ~$ docker-compose ps
WARNING: Found multiple config files with supported names: docker-compose.yaml, docker-compose.yml
WARNING: Using docker-compose.yml

Name                Command                  State      Ports
-----
akashine_db_1       docker-entrypoint.sh mysqld    Exit 255   3306/tcp, 33060/tcp
akashine_web_1      /docker-entrypoint.sh nginx ... Exit 255   0.0.0.0:80->80/tcp, :::80->80/tcp
akashine@Advik: ~$
```