**Step-by-Step Guide to Install and Configure Minikube on RHEL 8.6**

Minikube is a lightweight tool that allows you to run Kubernetes clusters locally. Follow these steps to install and configure Minikube on **RHEL 8.6**.

**✅ Step 1: Update System and Install Dependencies**

Before installing Minikube, ensure your system is updated and has the required packages.

Run the following commands:

**$ sudo dnf update -y**

**$ sudo dnf install -y curl wget conntrack socat git**

**✅ Step 2: Install Container Runtime**

Minikube requires a container runtime such as **Docker** or **Podman**.

**Option 1: Install Docker (Recommended)**

Add the Docker repository:

sudo dnf config-manager --add-repo=https://download.docker.com/linux/centos/docker-ce.repo

Install Docker:

sudo dnf install -y docker-ce docker-ce-cli containerd.io

Start and enable Docker:

sudo systemctl enable --now docker

Verify Docker installation:

docker --version

**Option 2: Install Podman (Alternative)**

If you prefer **Podman**, install it with:

sudo dnf install -y podman

Verify the installation:

podman --version

**✅ Step 3: Install Minikube**

Download the latest Minikube binary:

curl -LO <https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64>

Move the binary to /usr/local/bin and make it executable:

sudo install minikube-linux-amd64 /usr/local/bin/minikube

Verify Minikube installation:

minikube version

**✅ Step 4: Install kubectl (Kubernetes CLI)**

To interact with the Kubernetes cluster, install kubectl:

Download the latest kubectl binary:

curl -LO "[https://dl.k8s.io/release/$(curl -L -s https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl](https://dl.k8s.io/release/$(curl%20-L%20-s%20https:/dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl)"

Move kubectl to /usr/local/bin and make it executable:

sudo install kubectl /usr/local/bin/

Verify installation:

kubectl version --client

**✅ Step 5: Start Minikube**

Now, start Minikube with the desired driver:

**If using Docker (Recommended)**

minikube start --driver=docker

**If using Podman**

minikube start --driver=podman

Check Minikube status:

minikube status

Expected output:

host: Running

kubelet: Running

apiserver: Running

kubeconfig: Configured

**✅ Step 6: Verify Kubernetes Cluster**

Check the Kubernetes nodes:

kubectl get nodes

Expected output:

NAME STATUS ROLES AGE VERSION

minikube Ready master 2m v1.XX.X

**✅ Step 7: Enable the Kubernetes Dashboard (Optional)**

To access the Kubernetes dashboard, run:

minikube dashboard --url

It will generate a URL like:

<http://127.0.0.1:56789/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/>

If you want to expose the dashboard on **all IPs**, use:

kubectl port-forward -n kubernetes-dashboard service/kubernetes-dashboard 0.0.0.0:30000:443 --address 0.0.0.0

Now, access it using:

http://<Minikube-IP>:30000

**✅ Step 8: Deploy a Sample Application**

To verify that Minikube works, deploy the **hello-minikube** application:

Create a deployment:

kubectl create deployment hello-minikube --image=kicbase/echo-server:1.0

Expose the application:

kubectl expose deployment hello-minikube --type=NodePort --port=8080

Get the Minikube IP:

minikube ip

Example output:

192.168.49.2

Get the service port:

kubectl get svc

Example output:

NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE

hello-minikube NodePort 10.96.32.145 <none> 8080:32000/TCP 1m

Here, 32000 is the **NodePort**.

Access the application:

<http://192.168.49.2:32000>

**✅ Step 9: Enable Minikube Auto-Start (Optional)**

To ensure Minikube starts automatically on reboot, create a systemd service:

Create a new systemd service file:

sudo nano /etc/systemd/system/minikube.service

Add the following content:

[Unit]

Description=Minikube Service

After=network.target docker.service

[Service]

User=root

ExecStart=/usr/local/bin/minikube start --driver=docker

ExecStop=/usr/local/bin/minikube stop

Restart=always

[Install]

WantedBy=multi-user.target

Save the file and reload systemd:

sudo systemctl daemon-reload

Enable the service:

sudo systemctl enable minikube

Start Minikube on boot:

sudo systemctl start minikube

**🎯 Conclusion**

You have successfully installed and configured Minikube on **RHEL 8.6**! 🚀

* + ✅ Installed dependencies
  + ✅ Installed Docker or Podman
  + ✅ Installed Minikube and kubectl
  + ✅ Started Minikube and verified the cluster
  + ✅ Enabled Kubernetes Dashboard
  + ✅ Deployed a sample application😊

**Note: Prepared by - K.T. Harsha . Images are taken from the web site, used only for training and understanding purpose**