

Kubernetes Task3 by Subiksha P R

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Definition:

Kubernetes is a tool that helps manage and run apps inside containers. It makes sure your apps stay up, scale with traffic, and recover if something goes wrong. It automates many tasks, so you don't have to worry about the details.

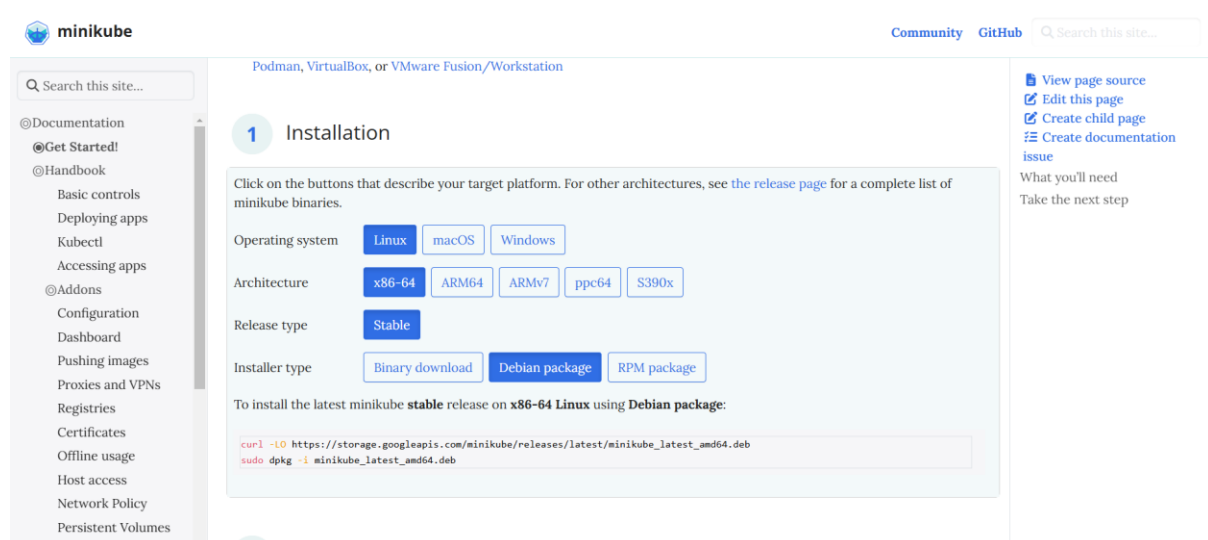
Commands to install,

Give these below commands in ubuntu terminal-

curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube_latest_amd64.deb

sudo dpkg -i minikube_latest_amd64.deb

minikube start



```
subiksha_ubuntu@SUBIKSHA:~$ minikube version --client
Error: unknown flag: --client
See 'minikube version --help' for usage.
subiksha_ubuntu@SUBIKSHA:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube_latest_amd64.deb
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 37.0M 100 37.0M 0 0 7332k 0 0:00:05 0:00:05 --:--:-- 9109k
subiksha_ubuntu@SUBIKSHA:~$ sudo dpkg -i minikube_latest_amd64.deb
(Reading database ... 42870 files and directories currently installed.)
Preparing to unpack minikube_latest_amd64.deb ...
Unpacking minikube (1.35.0-0) over (1.35.0-0) ...
Setting up minikube (1.35.0-0) ...
subiksha_ubuntu@SUBIKSHA:~$ 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 ...
👉 docker "minikube" container is missing, will recreate.
👉 Creating docker container (CPUs=2, Memory=2200MB) ...
👉 Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...
   ▪ Generating certificates and keys ...
   ▪ Booting up control plane ...
   ▪ Configuring RBAC rules ...
👉 Configuring bridge CNI (Container Networking Interface) ...
👉 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
E0205 15:51:45.591250 2254 logFile.go:53] failed to close the audit log: invalid argument
```

Working:

1. **kubectl create deployment deep --image=subiksha17/my_jenkins --port=80**

- a. **Purpose:** Create a deployment, run Jenkins.
- b. **What happens:** Creates a deployment using the specified image (subiksha17/my_jenkins) and exposes port 80.

2. **kubectl get deployments**

- a. **Purpose:** List all Kubernetes deployments.
- b. **What happens:** Displays details of all active deployments in the cluster.

3. **kubectl get pods**

- a. **Purpose:** List all Kubernetes pods.
- b. **What happens:** Shows all the pods, which are instances of your containers, running in the cluster.

4. **kubectl expose deployment deep --type=NodePort --port=80**

- a. **Purpose:** Expose deployment via NodePort.
- b. **What happens:** Creates a service to expose the deep deployment on port 80 with access from outside the cluster.

5. **kubectl get svc**

- a. **Purpose:** List all services in cluster.
- b. **What happens:** Displays the services, including the one created to expose the deep deployment.

6. **minikube service deep**

- a. **Purpose:** Access the service locally via Minikube.
- b. **What happens:** Opens a browser to access the deep service running inside the Minikube cluster.

Output:

```
subiksha_ubuntu@SUBIKSHA:~$ kubectl create deployment deep --image=subiksha17/my_jenkins --port=80
deployment.apps/deep created
subiksha_ubuntu@SUBIKSHA:~$ kubectl get deployments
NAME    READY   UP-TO-DATE   AVAILABLE   AGE
deep    1/1     1             1           26s
subiksha_ubuntu@SUBIKSHA:~$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
deep-7b7cf5b546-vmn2n              1/1     Running   0           30s
subiksha_ubuntu@SUBIKSHA:~$ kubectl expose deployment deep --type=NodePort --port=80
service/deep exposed
subiksha_ubuntu@SUBIKSHA:~$ kubectl get svc
NAME            TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)          AGE
deep            NodePort    10.98.34.148   <none>        80:32765/TCP     15s
kubernetes      ClusterIP   10.96.0.1     <none>        443/TCP          5m55s
subiksha_ubuntu@SUBIKSHA:~$ minicube service deep
Command 'minicube' not found, did you mean:
  command 'minitube' from deb minitube (3.9.3-2)
Try: sudo apt install <deb name>
subiksha_ubuntu@SUBIKSHA:~$ minikube service deep
+-----+-----+-----+-----+
| NAMESPACE | NAME | TARGET PORT | URL |
+-----+-----+-----+-----+
| default    | deep | 80           | http://192.168.49.2:32765 |
+-----+-----+-----+-----+
🌟 Starting tunnel for service deep.
+-----+-----+-----+-----+
| NAMESPACE | NAME | TARGET PORT | URL |
+-----+-----+-----+-----+
| default    | deep | 80           | http://127.0.0.1:36153 |
+-----+-----+-----+-----+
🚀 Opening service default/deep in default browser...
👉 http://127.0.0.1:36153
⚠️ Because you are using a Docker driver on linux, the terminal needs to be open to run it.
^C 🛑 Stopping tunnel for service deep.
E0205 16:00:49.960873 8299 logFile.go:53] failed to close the audit log: invalid argument
subiksha_ubuntu@SUBIKSHA:~$ minikube version
minikube version: v1.35.0
commit: dd5d320e41b5451cdf3c01891bc4e13d189586ed-dirty
```

