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Library

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Home   Ubuntu_1

Activities   Terminal   May 6 02:05

exam@exam: ~/kubernetes_pod_demo

exam@exam: ~/kubernetes_pod_demo   exam@exam: ~

```
exam@exam:~$ sudo apt install snapd
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
snapd is already the newest version (2.67.1+22.04).
snapd set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
exam@exam:~$ sudo systemctl enable --now snapd
exam@exam:~$ sudo snap install microk8s --classic --channel=1.28
microk8s (1.28/stable) v1.28.15 from Canonical** installed
exam@exam:~$ sudo usermod -a -G microk8s $USER
exam@exam:~$ sudo chown -f -R $USER ~/.kube
exam@exam:~$ su - $USER
Password:
exam@exam:~$ microk8s status --wait-ready
microk8s is running
high-availability: no
  datastore master nodes: 127.0.0.1:19001
  datastore standby nodes: none
addons:
  enabled:
    dns                    # (core) CoreDNS
    ha-cluster             # (core) Configure high availability on the current node
    helm                   # (core) Helm - the package manager for Kubernetes
    helm3                  # (core) Helm 3 - the package manager for Kubernetes
  disabled:
    cert-manager           # (core) Cloud native certificate management
    cis-hardening          # (core) Apply CIS K8s hardening
    community              # (core) The community addons repository
    dashboard              # (core) The Kubernetes dashboard
    gpu                    # (core) Automatic enablement of Nvidia CUDA
    host-access            # (core) Allow Pods connecting to Host services smoothly
    hostpath-storage       # (core) Storage class; allocates storage from host directory
    ingress                # (core) Ingress controller for external access
    kube-ovn               # (core) An advanced network fabric for Kubernetes
```

To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

Type here to search   29°C Partly cloudy   ENG   20:35
                                                                          IN   05-05-2025

```
    storage              # (core) Alias to hostpath-storage add-on, deprecated
exam@exam:~$ microk8s kubectl get nodes
NAME    STATUS    ROLES     AGE    VERSION
exam    Ready     <none>    89s    v1.28.15
Files  xam:~$ microk8s kubectl get services
NAME          TYPE         CLUSTER-IP       EXTERNAL-IP    PORT(S)    AGE
kubernetes    ClusterIP    10.152.183.1     <none>         443/TCP    96s
exam@exam:~$ echo "alias kubectl='microk8s kubectl'">> ~/.bashrc
exam@exam:~$ source ~/.bashrc
exam@exam:~$ kubectl get nodes
NAME    STATUS    ROLES     AGE       VERSION
exam    Ready     <none>    2m44s     v1.28.15
exam@exam:~$ sudo apt-get install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
apache2 is already the newest version (2.4.52-1ubuntu4.14).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
exam@exam:~$ mkdir demo
exam@exam:~$ cd demo
exam@exam:~/demo$ kubectl create deployment my-apache --image httpd
deployment.apps/my-apache created
exam@exam:~/demo$ kubectl get deploy
NAME         READY    UP-TO-DATE    AVAILABLE    AGE
my-apache    1/1      1             1            15s
exam@exam:~/demo$ kubectl get pods
NAME                         READY    STATUS     RESTARTS    AGE
my-apache-5bd7979764-6vtqp   1/1      Running    0           43s
exam@exam:~/demo$ kubectl scale deployment my-apache --replicas 5
deployment.apps/my-apache scaled
exam@exam:~/demo$ kubectl get pods
NAME                         READY    STATUS     RESTARTS    AGE
my-apache-5bd7979764-27jtm   1/1      Running    0           13s
my-apache-5bd7979764-6vtqp   1/1      Running    0           103s
my-apache-5bd7979764-958cx   1/1      Running    0           13s
```

```
my-apache-5bd7979764-958cx    1/1       Running    0          13s
my-apache-5bd7979764-97nmn    1/1       Running    0          13s
my-apache-5bd7979764-rfjzh    1/1       Running    0          13s
exam@exam:~/demo$ kubectl get rs
NAME                  DESIRED    CURRENT    READY    AGE
my-apache-5bd7979764    5          5          5       115s
exam@exam:~/demo$ kubectl delete pod my-apache 5bd7979764-27jtm
Error from server (NotFound): pods "my-apache" not found
Error from server (NotFound): pods "5bd7979764-27jtm" not found
exam@exam:~/demo$ kubectl get pods
NAME                           READY    STATUS     RESTARTS    AGE
my-apache-5bd7979764-27jtm    1/1       Running    0          107s
my-apache-5bd7979764-6vtqp    1/1       Running    0          3m17s
my-apache-5bd7979764-958cx    1/1       Running    0          107s
my-apache-5bd7979764-97nmn    1/1       Running    0          107s
my-apache-5bd7979764-rfjzh    1/1       Running    0          107s
                       $ kubectl delete pod my-apache 27jtm
Error from server (NotFound): pods "my-apache" not found
Error from server (NotFound): pods "27jtm" not found
exam@exam:~/demo$ kubectl delete pod my-apache-5bd7979764-27jtm
pod "my-apache-5bd7979764-27jtm" deleted
exam@exam:~/demo$ kubectl get pods
NAME                           READY    STATUS     RESTARTS    AGE
my-apache-5bd7979764-6vtqp    1/1       Running    0          4m33s
my-apache-5bd7979764-958cx    1/1       Running    0          3m3s
my-apache-5bd7979764-97nmn    1/1       Running    0          3m3s
my-apache-5bd7979764-nvxp4    1/1       Running    0          8s
my-apache-5bd7979764-rfjzh    1/1       Running    0          3m3s
exam@exam:~/demo$ kubectl get rs
NAME                  DESIRED    CURRENT    READY    AGE
my-apache-5bd7979764    5          5          5       4m43s
exam@exam:~/demo$ cd ..
exam@exam:~$ mkdir kubernetes_pod_demo
exam@exam:~$ cd kubernetes_pod_demo/
exam@exam:~/kubernetes_pod_demo$ sudo nano nginx-cdac.yaml
```

```
exam@exam:~/kubernetes_pod_demo$ kubectl get pods
kubectl get services
NAME                            READY    STATUS     RESTARTS    AGE
my-apache-5bd7979764-6vtqp      1/1      Running    0           14m
my-apache-5bd7979764-958cx      1/1      Running    0           12m
my-apache-5bd7979764-97nmn      1/1      Running    0           12m
my-apache-5bd7979764-nvxp4      1/1      Running    0           9m40s
my-apache-5bd7979764-rfjzh      1/1      Running    0           12m
NAME          TYPE         CLUSTER-IP      EXTERNAL-IP    PORT(S)    AGE
kubernetes    ClusterIP    10.152.183.1    <none>         443/TCP    20m
exam@exam:~/kubernetes_pod_demo$ sudo nano nginx-cdac.yaml
exam@exam:~/kubernetes_pod_demo$ kubectl apply -f nginx-cdac.yaml
configmap/nginx-homepage-config created
pod/nginx-cdac created
service/nginx-cdac-service created
```
Ubuntu 22.04.3 LTS amd64 `_pod_demo$ kubectl get nodes -o wide`
```
NAME    STATUS    ROLES      AGE    VERSION     INTERNAL-IP      EXTERNAL-IP    OS-IMAGE            KERNEL-VERSION     CONTAINER-RUNTIME
exam    Ready     <none>     25m    v1.28.15    192.168.30.31    <none>         Ubuntu 22.04.5 LTS  6.8.0-59-generic   containerd://1.6.28
```

```
exam@exam:~/demo1/nginx-html$ sudo nano index.html
exam@exam:~/demo1/nginx-html$ cat index.html
echo "<!DOCTYPE html>

<head>
    <title>Welcome to CDAC</title>
</head>
<body>
    <h1>Welcome to CDAC</h1>
    <p>This is a custom Nginx page.</p>
</body>
</html>" > ~/demo1/nginx-html/index.html
exam@exam:~/demo1/nginx-html$ kubectl create configmap nginx-html --from-file=~/demo1/nginx-html/index.html
error: error reading ~/demo1/nginx-html/index.html: no such file or directory
exam@exam:~/demo1/nginx-html$ kubectl create configmap nginx-html --from-file=/home/exam/demo1/nginx-html/index.html
configmap/nginx-html created
exam@exam:~/demo1/nginx-html$ cd
exam@exam:~$ cd /demo1/nginx-html
-bash: cd: /demo1/nginx-html: No such file or directory
exam@exam:~$ cd demo1
exam@exam:~/demo1$
```

Help

exam@exam: ~/demo1

exam@exam: ~/demo1   ×   exam@exam: ~/demo1

```
exam@exam:~/demo1$ newgrp microk8s
exam@exam:~/demo1$ kubectl get nodes
NAME    STATUS   ROLES    AGE    VERSION
exam    Ready    <none>   28m    v1.28.15
exam@exam:~/demo1$ kubectl apply -f nginx-deployment.yaml
Warning: resource deployments/my-nginx is missing the kubectl.kubernetes.io/last-applied-configuration annotation which is required by kubectl app
ly. kubectl apply should only be used on resources created declaratively by either kubectl create --save-config or kubectl apply. The missing anno
tation will be patched automatically.
deployment.apps/my-nginx configured
exam@exam:~/demo1$ kubectl get deployments
NAME        READY   UP-TO-DATE   AVAILABLE   AGE
my-nginx    1/1     1            1           22m
exam@exam:~/demo1$ kubectl get pods
NAME                      READY   STATUS    RESTARTS   AGE
my-nginx                  1/1     Running   0          23m
my-nginx-df6cbd98-bwpw9   1/1     Running   0          54s
exam@exam:~/demo1$ kubectl get services
NAME         TYPE        CLUSTER-IP     EXTERNAL-IP   PORT(S)   AGE
kubernetes   ClusterIP   10.152.183.1   <none>        443/TCP   30m
exam@exam:~/demo1$ kubectl apply -f nginx-deployment.yaml
deployment.apps/my-nginx unchanged
exam@exam:~/demo1$ kubectl get nodes -o wide
NAME    STATUS   ROLES    AGE    VERSION    INTERNAL-IP     EXTERNAL-IP   OS-IMAGE            KERNEL-VERSION    CONTAINER-RUNTIME
exam    Ready    <none>   32m    v1.28.15   192.168.30.31   <none>        Ubuntu 22.04.5 LTS   6.8.0-59-generic   containerd://1.6.28
exam@exam:~/demo1$ kubectl get configmaps
NAME             DATA   AGE
kube-root-ca.crt   1    41m
nginx-html         1    17m
exam@exam:~/demo1$ sudo nano nginx-service.yaml
[sudo] password for exam:
exam@exam:~/demo1$ kubectl apply -f nginx-service.yaml
service/my-nginx-service created
exam@exam:~/demo1$ kubectl get services
NAME         TYPE        CLUSTER-IP     EXTERNAL-IP   PORT(S)   AGE
kubernetes   ClusterIP   10.152.183.1   <none>        443/TCP   45m
```

echo "

Welcome to CDAC

This is a custom Nginx page.

" > ~/demo1/nginx-html/index.html