Lab: Validation of Cluster Configuration

Continue Using The Same Terminal

To validate the cluster configuration installed using k3s

- Verify the Kubernetes version.

```
kubectl version
```

```
root@ip-10-0-0-248:/home/ubuntu/ workspace# kubectl version
WARNING: This version information is deprecated and will be replaced with the output
 from kubectl version --short.  Use --output=yaml|json to get the full version.
Client Version: version.Info{Major:"1", Minor:"27", GitVersion:"v1.27.2", GitCommit:
"7f6f68fdabc4df88cfea2dcf9a19b2b830f1e647", GitTreeState:"clean", BuildDate:"2023-05
-17T14:20:07Z", GoVersion:"go1.20.4", Compiler:"gc", Platform:"linux/amd64"}
Kustomize Version: v5.0.1
Server Version: version.Info{Major:"1", Minor:"25", GitVersion:"v1.25.3", GitCommit:
"434bfd82814af038ad94d62ebe59b133fcb50506", GitTreeState:"clean", BuildDate:"2022-10
-25T19:35:11Z", GoVersion:"go1.19.2", Compiler:"gc", Platform:"linux/amd64"}
WARNING: version difference between client (1.27) and server (1.25) exceeds the supp
orted minor version skew of +/-1
```

- Verify that the nodes are ready and available.

```
kubectl get nodes
```

```
root@ip-10-0-0-248:/home/ubuntu/ workspace# kubectl get nodes
NAME                  STATUS   ROLES           AGE   VERSION
kind-control-plane    Ready    control-plane   11h   v1.25.3
kind-worker           Ready    <none>          11h   v1.25.3
kind-worker2          Ready    <none>          11h   v1.25.3
root@ip-10-0-0-248:/home/ubuntu/ workspace#
root@ip-10-0-0-248:/home/ubuntu/ workspace#
```

- Verify that the Kubernetes components are running.

```
kubectl get pods --all-namespaces
```

```
root@ip-10-0-0-248:/home/ubuntu/ workspace# kubectl get pods --all-namespaces
NAMESPACE           NAME                                        READY   STATUS    RESTARTS   AGE
default             hostipc-exec-pod                            1/1     Running   0          5h51m
default             hostnetwork-exec-pod                        1/1     Running   0          5h59m
default             non-hostipc-exec-pod                        1/1     Running   0          5h51m
default             non-hostnetwork-exec-pod                    1/1     Running   0          5h58m
default             priv-exec-pod                               1/1     Running   0          5h29m
kube-system         cilium-mlzr2                                 1/1     Running   0          11h
kube-system         cilium-ntt7m                                 1/1     Running   0          11h
kube-system         cilium-operator-6485c89c66-9l8z8            1/1     Running   0          11h
kube-system         cilium-x6jjm                                 1/1     Running   0          11h
kube-system         coredns-565d847f94-df8kh                    1/1     Running   0          11h
kube-system         coredns-565d847f94-xcqrp                    1/1     Running   0          11h
kube-system         etcd-kind-control-plane                     1/1     Running   0          11h
kube-system         kube-apiserver-kind-control-plane           1/1     Running   0          11h
kube-system         kube-controller-manager-kind-control-plane  1/1     Running   0          11h
kube-system         kube-proxy-cnfd2                            1/1     Running   0          11h
kube-system         kube-proxy-nx658                           1/1     Running   0          11h
kube-system         kube-proxy-wq2wp                           1/1     Running   0          11h
kube-system         kube-scheduler-kind-control-plane           1/1     Running   0          11h
local-path-storage  local-path-provisioner-684f458cdd-2n6qc     1/1     Running   0          11h
```

- Check the status of the Kubernetes API server.

```
kubectl get componentstatuses
```

```
root@ip-10-0-0-248:/home/ubuntu/ workspace# kubectl get componentstatuses
Warning: v1 ComponentStatus is deprecated in v1.19+
NAME                 STATUS      MESSAGE                          ERROR
scheduler            Healthy     ok
controller-manager   Healthy     ok
etcd-0               Healthy     {"health":"true","reason":""}
root@ip-10-0-0-248:/home/ubuntu/ workspace#
root@ip-10-0-0-248:/home/ubuntu/ workspace#
```

- Check the status of the Kubernetes network.

```
kubectl get svc --all-namespaces
```

```
root@ip-10-0-0-248:/home/ubuntu/ workspace# kubectl get svc --all-namespaces
NAMESPACE       NAME        TYPE        CLUSTER-IP    EXTERNAL-IP   PORT(S)                  AGE
default         kubernetes  ClusterIP   10.96.0.1     <none>        443/TCP                  11h
kube-system     kube-dns    ClusterIP   10.96.0.10    <none>        53/UDP,53/TCP,9153/TCP   11h
root@ip-10-0-0-248:/home/ubuntu/ workspace#
```

- Check the status of the kubernetes storage.

```
kubectl get storageclass
```

Kubernetes storage refers to manage and provision storage resources for

containerized applications running on a K8s cluster.

```
root@ip-10-0-0-248:/home/ubuntu/ workspace# kubectl get storageclass
NAME                PROVISIONER             RECLAIMPOLICY   VOLUMEBINDINGMODE      ALLOWVOLUMEEXPANSION   AGE
standard (default)  rancher.io/local-path   Delete          WaitForFirstConsumer  false                  11h
root@ip-10-0-0-248:/home/ubuntu/ workspace#
```