**Lesson 3 Demo 9**

**Backing up and Restoring Etcd Cluster Data**

**Objective:** Learn to back up and restore the etcd cluster data

**Tools required:** kubeadm, kubectl, kubelet, and etcd

**Prerequisites:** kubeadm, kubectl, kubelet, and etcd should be installed

**Note 1:** Assisted Practice is based on Kubernetes version 1.23

**Note 2:** Make sure you have executed **sudo kubeadm reset** on all machines, which will clean up the entire cluster.

Steps to be followed:

1. Backing up the etcd cluster data
2. Retrieving the etcd cluster data

**Step 1: Backing up the etcd cluster data**

* 1. Use the following command to install the etcd-client:

**sudo apt install etcd-client**

Text

Description automatically generated

1.2 List all the pods of the kube-system namespace

**kubectl get pods -n kube-system**

Text

Description automatically generated

1.3 Describe the etcd pod of the kube-system namespace and copy the IP address of the --advertise-client-url flag:

**kubectl describe pods <etcd-pod-name> -n kube-system**

Text

Description automatically generated

1.4 Export the advertise-client-url to advertise\_url

**export advertise\_url=<<advertise-client-url>>**

**echo $advertise\_url**

|  |
| --- |
| **Note:** Replace <<advertise-client-url>> with the advertise-client-url copied from Step 1.3 |

Text

Description automatically generated

1.5 Use the following command to save the etcd backup:

**sudo ETCDCTL\_API=3 etcdctl \**

**--endpoints $advertise\_url \**

**--cacert /etc/kubernetes/pki/etcd/ca.crt \**

**--key /etc/kubernetes/pki/etcd/server.key \**

**--cert /etc/kubernetes/pki/etcd/server.crt snapshot save etcd\_backup.db**

Text

Description automatically generated

1.6 Use the following command to check the newly created **etcd\_backup.db** file:

**ls**

**Text

Description automatically generated**

**Step 2: Retrieving the etcd cluster data**

1. Type the following command to restore the etcd cluster data:

**sudo ETCDCTL\_API=3 etcdctl \**

**--endpoints $advertise\_url \**

**--cacert /etc/kubernetes/pki/etcd/ca.crt \**

**--key /etc/kubernetes/pki/etcd/server.key \**

**--cert /etc/kubernetes/pki/etcd/server.crt snapshot restore etcd\_backup.db**

Text

Description automatically generated

2.2 Set the ownership on the new data directory

**sudo chown -R etcd:etcd /var/lib/etcd**

|  |
| --- |
| **Note:** If you get an error of invalid user, find the user details by using the command:  **stat -c %U:%G /var/lib/etcd** |

**Text

Description automatically generated**

2.3 Verify the cluster

**sudo ETCDCTL\_API=3 etcdctl get cluster.name \**

**--endpoints $advertise\_url \**

**--cacert /etc/kubernetes/pki/etcd/ca.crt \**

**--key /etc/kubernetes/pki/etcd/server.key \**

**--cert /etc/kubernetes/pki/etcd/server.crt**

**Text

Description automatically generated**