

## Lab: Working with hostpath

### Introduction:

A **hostPath** volume mounts a file or directory from the host node's filesystem into your Pod. This is not something that most Pods will need, but it offers a powerful escape hatch for some applications.

Kubernetes supports hostPath for development and testing on a single-node cluster.

### Objective:

- Create Pod with hostPath Volume Type
- Cleanup

Ensure that you have logged-in as **root** user on **eoc-controller** node.

### 1 Create pod with hostPath Volume type

1.1 Let's **view** the yaml manifest file by executing below command

```
# cat -n ~/kubernetes/storage-hostpath.yml
```

#### Output:

```
[root@eoc-controller ~]#cat ~/kubernetes/storage-hostpath.yml
apiVersion: v1
kind: Pod
metadata:
  name: test-pd-hostpth
spec:
  containers:
  - name: test-container
    image: nginx

    volumeMounts:
      - mountPath: "/usr/share/nginx/html"
        name: test-hostpath

  volumes:
  - name: test-hostpath
    hostPath:
      path: /data
      nodeName: eoc-node1
```

1.2 Let's create a pod using the manifest file ~/kubernetes/storage-hostpath.yml by executing the below command.

```
# kubectl apply -f ~/kubernetes/storage-hostpath.yml
```

Output:

```
[root@eoc-controller ~]# kubectl apply -f ~/kubernetes/storage-hostpath.yml
pod/test-pd-hostpth created
```

1.3 Let's verify the status of the Pods by executing the below command.

```
# kubectl get pod test-pd-hostpth -o wide
```

Output:

```
[root@eoc-controller ~]# kubectl get pod test-pd-hostpth -o wide
NAME          READY   STATUS    RESTARTS   AGE   IP          NODE          NOMINATED NODE   READINESS GATES
test-pd-hostpth 1/1     Running   0           62s   10.32.0.2   eoc-node1     <none>           <none>
```

1.4 Let's create the index.html file on node1 by executing the below command.

```
# ssh eoc-node1 "echo "Hello from Kubernetes Storage" >
/data/index.html"
```

Output:

```
[root@eoc-controller ~]# ssh eoc-node1 "echo "Hello from Kubernetes Storage" > /data/index.html"
The authenticity of host 'eoc-node1 (192.168.100.12)' can't be established.
ECDSA key fingerprint is SHA256:YrOuOyOQ4jIELYfwadyIQUykoBff3ze50NIcYzH7eos.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'eoc-node1,192.168.100.12' (ECDSA) to the list of known hosts.
root@eoc-node1's password:
```

1.5 Let's access to the shell of the Pod by executing the below command

```
# kubectl exec -it test-pd-hostpth -- /bin/bash
```

1.6 Let's access the index.html by executing the below command.

```
# curl http://localhost/
```

Output:

```
[root@eoc-controller ~]# kubectl exec -it test-pd-hostpth -- /bin/bash
root@test-pd-hostpth:/# curl http://localhost/
Hello from Kubernetes Storage
```

**Note:** The Output shows the text that you wrote to the index.html file on the hostPath volume. You have successfully configured a Pod to use storage from a PersistentVolumeClaim.

1.7 Let's exit from the pod by executing the below pod.

```
# exit
```

## 2 Cleanup.

2.1 Let's **delete** the pod named **test-pd-hostPath** by executing the below command.

```
# kubectl delete pod test-pd-hostpth
```

Output:

```
[root@eoc-controller ~]# kubectl delete pod test-pd-hostpth  
pod "test-pd-hostpth" deleted
```