Experiment 04: Getting started with k3d

Install k3d from the binary, build from a tap, or build it custom.

For MacOS:

$ **brew install k3d**

For Windows:

Download the binary here:

https://github.com/rancher/k3d/releases

Install in c:\k3d or a bin folder for executing, alternatively the %USERPROFILE%\go\bin is commonly used for this executable

Create a project folder for our k3d experiements

C:\> **mkdir c:\projects\k3d**

or

$ **mkdir ~/k3d**

We've already installed kubectl with kind, so won't need to reinstall.

For Windows:

We need to move the executable so that we can use k3d from the command line

C:\k3d> **dir**

```
 Volume in drive C is OS
 Volume Serial Number is 5081-CA53

 Directory of C:\k3d

09/09/2020  12:03 PM    <DIR>          .
09/09/2020  12:03 PM    <DIR>          ..
09/08/2020  10:05 PM         6,284,049 k3d-3.0.1.zip
09/08/2020  10:05 PM        22,014,464 k3d-windows-amd64.exe
               2 File(s)     28,298,513 bytes
               2 Dir(s)  175,237,222,400 bytes free
```

C:\k3d> **move k3d-windows-amd64.exe k3d.exe**

1 file(s) moved.

In Windows or MacOS:

k3d version

k3d version v3.0.1
k3s version v1.18.6-k3s1 (default)

k3d cluster list

NAME SERVERS AGENTS LOADBALANCER

k3d cluster create demo --servers 3 --agents 3

[36mINFO[0m[0000] Created network 'k3d-demo'
[36mINFO[0m[0000] Created volume 'k3d-demo-images'
[36mINFO[0m[0000] Creating initializing server node
[36mINFO[0m[0000] Creating node 'k3d-demo-server-0'
[36mINFO[0m[0001] Pulling image 'docker.io/rancher/k3s:v1.18.6-k3s1'
[36mINFO[0m[0089] Creating node 'k3d-demo-server-1'
[36mINFO[0m[0090] Creating node 'k3d-demo-server-2'
[36mINFO[0m[0091] Creating node 'k3d-demo-agent-0'
[36mINFO[0m[0092] Creating node 'k3d-demo-agent-1'
[36mINFO[0m[0094] Creating node 'k3d-demo-agent-2'
[36mINFO[0m[0096] Creating LoadBalancer 'k3d-demo-serverlb'
[36mINFO[0m[0097] Pulling image 'docker.io/rancher/k3d-proxy:v3.0.1'
[36mINFO[0m[0158] Cluster 'demo' created successfully!
[36mINFO[0m[0158] You can now use it like this:
kubectl cluster-info

In our example, you'll see that we've setup 3 servers (Kubernetes masters) in our control plane, and 3 agents (Kubernetes nodes) in our data plane.

You'll also see that we have the Load Balancer, k3d-demo-serverlb, which is our containerized Traefik instance running in our cluster.

k3d cluster list

NAME SERVERS AGENTS LOADBALANCER
demo 1/3 2/3 true

k3d node list

k3d-demo-agent-0 agent demo running
k3d-demo-agent-1 agent demo running
k3d-demo-agent-2 agent demo exited
k3d-demo-server-0 server demo exited
k3d-demo-server-1 server demo exited
k3d-demo-server-2 server demo running
k3d-demo-serverlb loadbalancer demo
running

On Windows:

C:\k3d> **set KUBECONFIG_FILE=C:\k3d\.kube\demo**

C:\k3d> **k3d kubeconfig get demo > %KUBECONFIG_FILE%**

C:\k3d> **set KUBECONFIG=%KUBECONFIG_FILE%**

kubectl cluster-info
Kubernetes master is running at https://0.0.0.0:6550
CoreDNS is running at https://0.0.0.0:6550/api/v1/namespaces/kube-system/services/kube-dns:dns/proxy
Metrics-server is running at https://0.0.0.0:6550/api/v1/namespaces/kube-system/services/https:metrics-server:/proxy

k3d cluster delete demo

[36mINFO[0m[0000] Deleting cluster 'demo'
[36mINFO[0m[0001] Deleted k3d-demo-serverlb
[36mINFO[0m[0001] Deleted k3d-demo-agent-2
[36mINFO[0m[0002] Deleted k3d-demo-agent-1
[36mINFO[0m[0003] Deleted k3d-demo-agent-0
[36mINFO[0m[0003] Deleted k3d-demo-server-2
[36mINFO[0m[0003] Deleted k3d-demo-server-1
[36mINFO[0m[0003] Deleted k3d-demo-server-0
[36mINFO[0m[0003] Deleting cluster network '7f899c3403da533a8429f782ed2d5e1090d8eaaa605a886cba48c4d36ecc4413'
[36mINFO[0m[0003] Deleting image volume 'k3d-demo-images'
[36mINFO[0m[0003] Removing cluster details from default kubeconfig...
[36mINFO[0m[0003] Removing standalone kubeconfig file (if there is one)...
[36mINFO[0m[0003] Successfully deleted cluster demo!