Deploy an RKE Cluster

Lab 3

What are you Learning?

In this lab you will provision a Rancher Kubernetes Engine (RKE) based cluster with the configuration file you created in Lab 2 with `rke config`.

Why is it important?

This lab will show you how easy it is to provision and manage a Kubernetes cluster with RKE. You will be able to use this configuration file as a template for other RKE clusters you may wish to provision in the future.

Use `rke up` to Deploy a Single Node Cluster

You'll use the configuration file in Lab 2 to deploy a single node Kubernetes Cluster. If you haven't already, provision a single virtual machine from a cloud provider or internal on-premises lab environment. Don't use an ephemeral environment like an EC2 spot instance as you will need this environment for future labs.

1. Configure your infrastructure so that your single node meets the RKE prerequisites.
2. Use `rke config` to list the versions of Kubernetes supported by this version of rke.
3. In Lab 2 you should have selected one that is not the most recent. In Lab 4, we'll upgrade the cluster to the latest version.
4. Use rke up to deploy the cluster to the single node.

```
rke up

INFO[0000] Building Kubernetes cluster
INFO[0000] [dialer] Setup tunnel for host [10.0.0.1]
INFO[0000] [network] Deploying port listener containers
INFO[0000] [network] Pulling image [alpine:latest] on host
[10.0.0.1]
...
INFO[0101] Finished building Kubernetes cluster successfully
```

5. RKE will have created several files. Keep these in a safe place.

Testing That It Works

1. If you haven't already setup kubectl.
2. You can now use the kubeconfig file with kubectl to test access to the cluster.

References

- Creating the Cluster Configuration File - https://rancher.com/docs/rke/latest/en/installation/#creating-the-cluster-configuration-file

- RKE Requirements - https://rancher.com/docs/rke/latest/en/os/
- Save Your Files - https://rancher.com/docs/rke/latest/en/installation/#save-your-files
- Kubeconfig File - https://rancher.com/docs/rke/latest/en/kubeconfig/
- Configure Access to Multiple Clusters - https://kubernetes.io/docs/tasks/access-application-cluster/configure-access-multiple-clusters/