Setting up Kubernetes locally

* Minikube to set up a Kubernetes cluster.
* Minikube acts as the master & worker node
* It is not ideal but can be used for testing purposes.
* It creates a single node cluster on the virtual machine on your laptop.

Kubectl.
Kubernetes
-> Command line tool :=> used for doing some operation with Kubernetes cluster using Kubectl command.

Installation of Kubectl

Installation of Minicube

Setting up a local cluster using minikube

Minikube is mostly used for testing & developing purposes.

* copy the link from the website and run the copied command in command prompt (ie putting the url in the command prompt.

Minikube set up a Virtual Machine locally & deploy all the necessary Kubernetes components into it.

-> ~ minikube start

-> ~ minikube status

minikube
type : Control plane
host : Running
Kubelet : Running
apiserver : Running
Kubeconfig : Configured.

-> ~ minikube dashboard.

Exploring Minikube commands

-> ~ minikube docker-env -> environment Variable

These are required for communicating with the local VM to the remote Kubernetes server of docker.

-> ~ docker container ls -> list all the container running on the local machine

-> is just a command line tool to interact with cluster.

-> Kubectl config current-context

minikube.

-> ~ Kubectl get all --all-namespaces.

-> ~ minikube stop.

-> ~ minikube delete.

Multinode cluster with Kubeadm + containerd.

Using Kubeadm we can setup a multinode cluster, and multiple Vm → virtual machine on your machine & config master and node component.

ssh -> security shell -> network protocol secure way to access a computer over an unsecured network.

Create a control plane instance on Civo cloud and copy the SSH & run on your command prompt now you are connected to the control plane.

& Apply the setting by executing sysctl command

Installing containerd

root@control-plane-1b22f878:~# sudo apt-get update && sudo apt-get install -y containerd.

Creating a containerd file

· ~# sudo mkdir -p /etc/containerd. -> creating container file

Generating default configuration

~# sudo containerd config default | sudo tee /etc/containerd/config.toml

Restart Containerd file.

~# sudo systemctl restart containerd.

Disabling Swaping memory

~# sudo swapoff -a.

Turnoff automatic updates

Sudo apt-mark hold kubelet kubeadm kubectl

cluster is used to connect with the control node & worker node both are present inside the cluster