

# Installing Kubernetes

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# Captain Obvious

/ 'kaptɪn ɒbvɪəs /

## *Phrase*

Title or phrase applied to someone who states the obvious (self-evident facts)

- *Example:* “Docker and Kubernetes are changing the world”



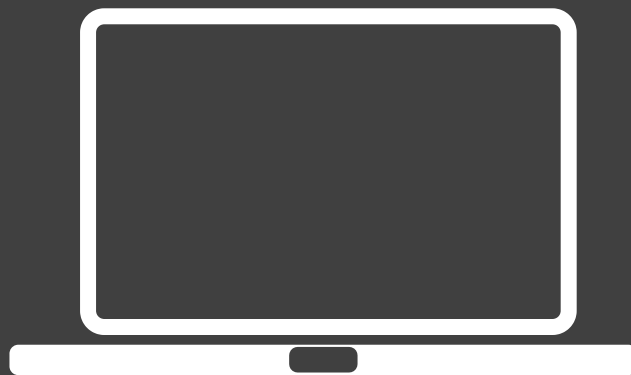


VS





VS



Simplest

Most  
involved



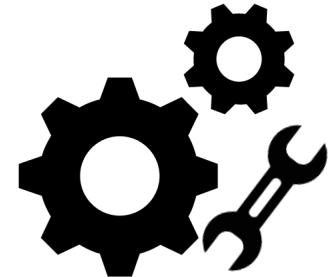
Minikube



Google  
Container  
Engine  
(GKE)



AWS  
Provider



Manual  
install





Kubernetes is developing **FAST!**

Some of the following will  
change (Captain Obvious again)





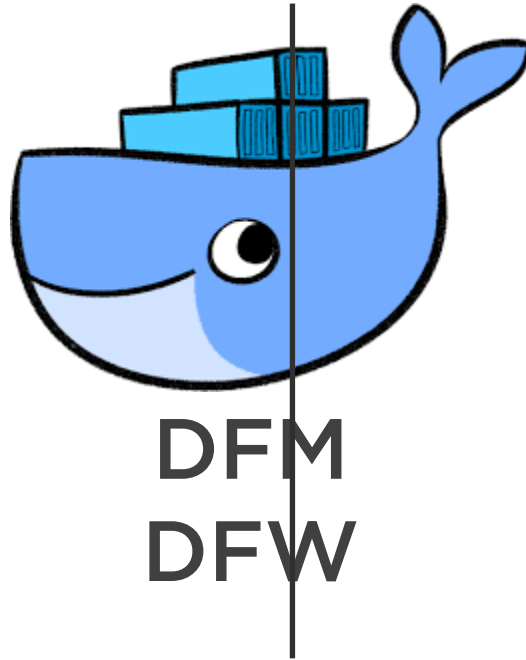


Coming up next...

Minikube

# Minikube



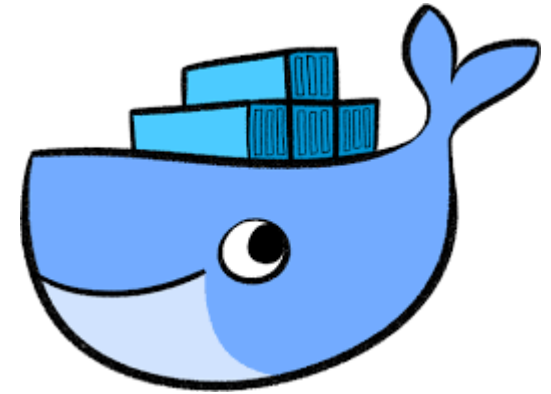


Best way of spinning up a local environment





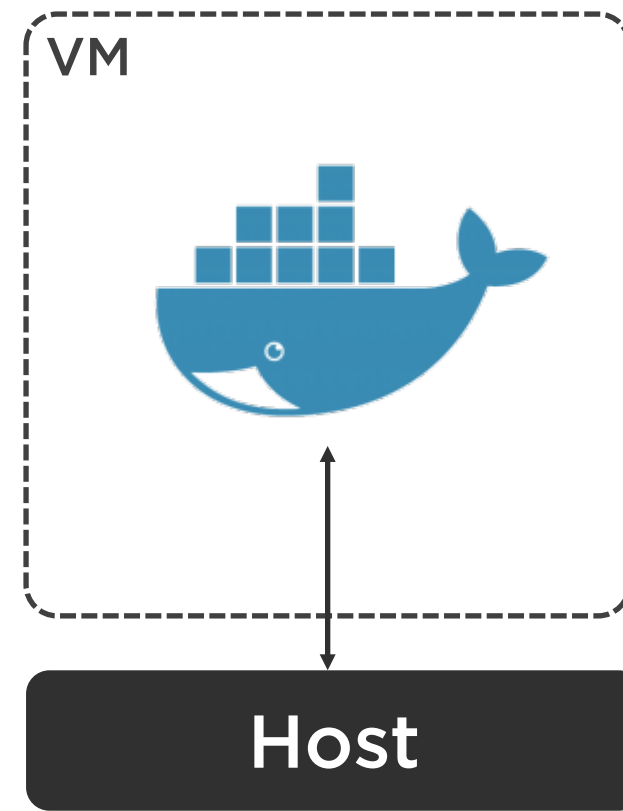
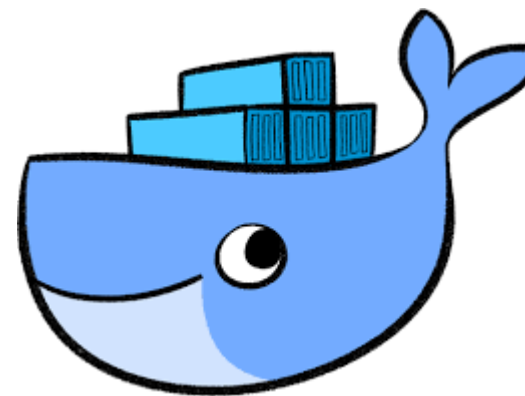
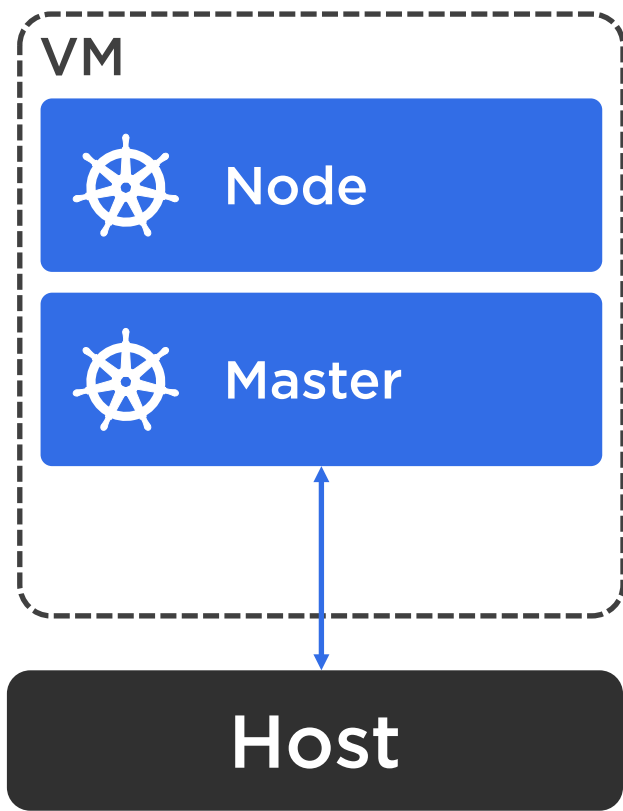
**minikube**

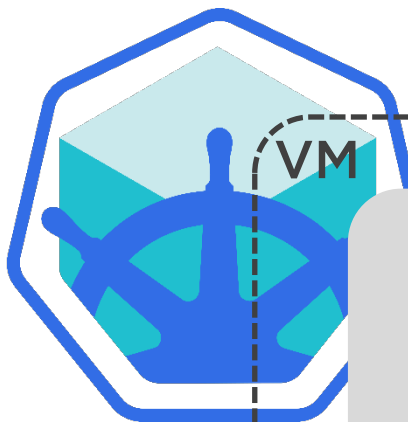


**DFM**  
**DFW**

Best way of spinning up a local environment







`$kubectl`



Node

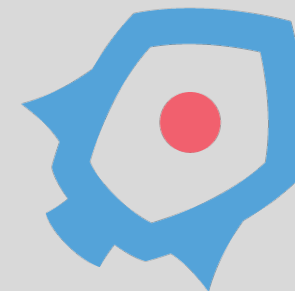
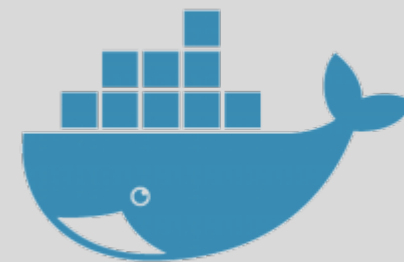


Master



`apiserver {}`

Localkube (binary)



Container runtime





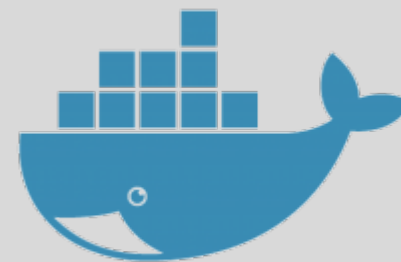
```
$kubectl
```

Best way of spinning up a local k8s environment

VM



Localkube (binary)

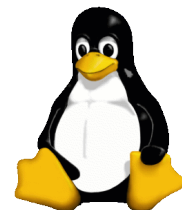


Container runtime





Best way of spinning up a local k8s environment





Coming up next...

# Google Container Engine





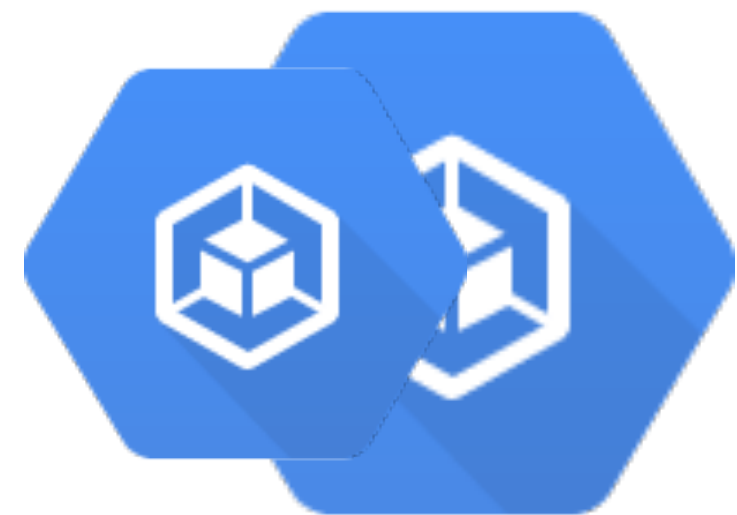
# Google Container Engine





Google Kontainer Engine





# Google Kontainer Engine





Google Kontainer Engine



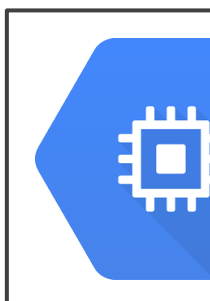


Google Kontainer Engine (GKE)



Google Compute Engine (GCE)  
Google Compute Engine (GCE)  
Provides compute instances







# GKE



**INCLUDES:**

- Master server
- etcd store

...



Coming up next...

# Installing Kubernetes in AWS

# Installing Kubernetes in AWS



# Installing k8s in AWS with `kops`

## Pre-reqs



## **kubectl, kops, AWS CLI**

### **IAM account in AWS with:**

`AmazonEC2FullAccess`

`AmazonRoute53FullAccess`

`AmazonS3FullAccess`

`IAMFullAccess`

`AmazonVPCFullAccess`

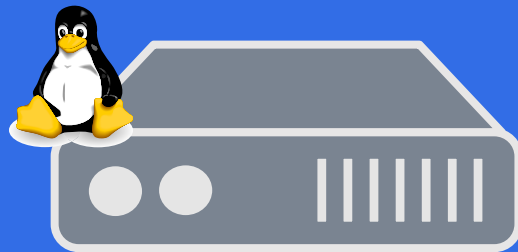
### **Properly configured DNS** (for the real world)



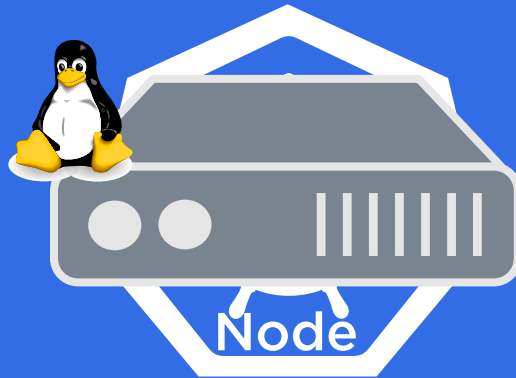
Coming up next...

# Manual Install

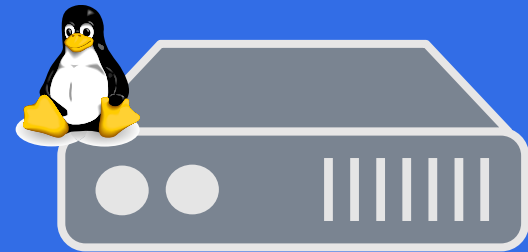
# Manually installing Kubernetes



Master



Node



Node



# Manually Installing k8s with `kubeadm`

## Pre-reqs



## Every node (master and minions) needs:

- Docker (or rkt)
- Kubelet
- Kubeadm
- Kubectl
- CNI



Coming up next...

# Lesson Recap



# Summary

## Minikube

Ideal for:

- Local dev environments
- Laptop/desktop installs
- NOT for production

## Google Container Engine

Integrated with the Google Cloud  
Packaged Kubernetes  
Production grade



## AWS with kops

Integrates with AWS  
Simple

## Manual with kubeadm

```
$ kubeadm init
```

```
$ kubeadm join --token <token>
```



Coming up next...

Pods