Kubernetes

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# Introduction

## Core Concepts

Components

* Controller Manager
* Scheduler
* etcd server
* Cluster Nodes
  + Master Nodes
  + Worker Nodes
* Pods
* Namespaces
* Kubernetes Proxy
* Kubernetes DNS

### Controller Manager

### Scheduler

### Etcd server

### Cluster Nodes

Master Nodes

Worker Nodes

### Pods

Resources

Requests

Limits – maximum amount of resources that a pod can consume

Operation Concepts

* Pods
* ReplicaSets
* Services
* Namespaces
* Ingress

### Pods

### Services

### Namespaces

### Ingress

Managing Kubernetes

* KaaS
* Self-Managed Kubernetes

Containerization

* Container Types
  + System Containers
  + Application Container Images
* Container Formats
  + Docker Image Format
  + Open Container Initiative (OCI)
* Other Container related topics
  + Container Layering

## Deployments

* Minikube
* Kubeadm
* Kind (Docker-in-Docker Cluster)
* Cloud based Clusters
  + Google Cloud Platform (Google Kubernetes Engine)
  + AWS (Elastic Kubernetes Service)
  + Microsoft Azure (Azure Container Service)

### Minikube

### Kubeadm

### Kind

# Cluster Operations

## Google Cloud Platform (Google Kubernetes Engine)

## AWS EKS

### Creating the Cluster

$ eksctl create cluster –name kuar-cluster

## Microsoft Azure (Azure Container Service)

az group create --name=kuar --location=westus  
  
az aks create --resource-group=kuar --name=kuar-cluster  
az aks get-credentials --resource-group=kuar --name=kuar-cluster  
  
az aks install-cli

az group create --name=kuar --location=westus  
  
az aks create --resource-group=kuar --name=kuar-cluster  
az aks get-credentials --resource-group=kuar --name=kuar-cluster  
  
az aks install-cli

The install-cli command installs the following command line tools:

* kubectl
* kubelogin

### kubectl

The official Kubernetes Client.