# Working with Your Kubernetes Cluster



Anthony E. Nocentino
ENTERPRISE ARCHITECT @ CENTINO SYSTEMS
@nocentino www.centinosystems.com

### Course Overview



Introduction

**Exploring Kubernetes Architecture**Installing and Configuring Kubernetes

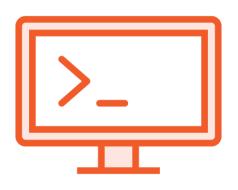
**Working with Your Kubernetes Cluster** 

### Overview

Using kubectl to Interact With Your Cluster

Application Deployments

## Using kubectl



**Primary CLI tool** 

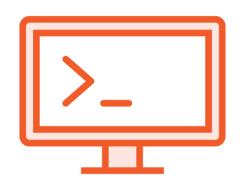
**Control your Kubernetes Cluster** 

Operations - what you want to do

Resources - what you want to do it to

Output - if there's output, its format

## Operations - what do you want to do?



apply/create - create resource(s)

run - start a pod from an image

explain - documentation of resources

delete - delete resource(s)

get - list resources

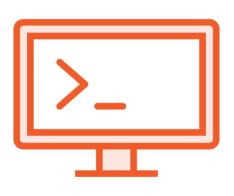
describe - detailed resource information

exec - execute a command on a container

logs - view logs on a container

https://kubernetes.io/docs/reference/kubectl/overview/#operations

### Resources - what do you want to do it to?



```
nodes (no)
pods (po)
services (svc)
..and many more
```

https://kubernetes.io/docs/reference/kubectl/overview/#resource-types

### Output



Specify kubectl's output format

wide - output additional info

yaml - YAML formatted API object

json - JSON formatted API object

dry-run - print an object without sending it to the API Server

https://kubernetes.io/docs/reference/kubectl/overview/#output-options

### kubectl

| kubectl | [command] | [type]     | [name] | [flags]     |
|---------|-----------|------------|--------|-------------|
| kubectl | get       | pods       | pod1   | output=yaml |
| kubectl | create    | deployment | nginx  | image=nginx |

https://kubernetes.io/docs/reference/kubectl/kubectl/

https://kubernetes.io/docs/reference/kubectl/cheatsheet/

### Demo

#### **Using kubectl**

- Nodes
- Pods
- API Resources
- Configure bash auto-completion

## Application Deployment in Kubernetes



#### **Imperative**

kubectl create deployment nginx \
--image=nginx

kubectl run nginx --image=nginx

**Declarative** 

Define our desired state in code

Manifest

YAML or JSON

kubectl apply -f deployment.yaml

## Basic Manifest - Deployment

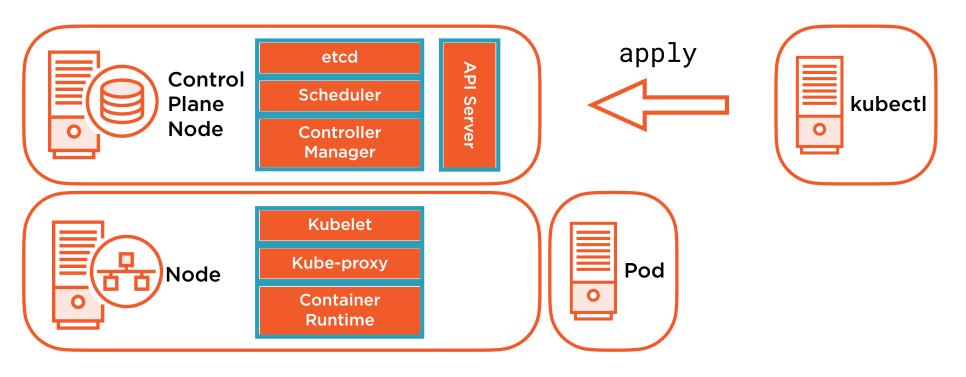
```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: hello-world
spec:
  replicas: 1
  selector:
    matchLabels:
      app: hello-world
                                       kubectl apply -f deployment.yaml
 template:
    metadata:
     labels:
        app: hello-world
    spec:
      containers:
      - image: gcr.io/google-samples/hello-app:1.0
        name: hello-app
```

```
kubectl create deployment hello-world \
    --image=gcr.io/google-samples/hello-app:1.0 \
    --dry-run=client -o yaml > deployment.yaml
kubectl apply -f deployment.yaml
```

Generating Manifests with dry-run

**Deployments** 

## Application Deployment Process



#### Demo

Imperatively and Declaratively

**Deploying resources in your Cluster** 

- Deployments
- Pods
- Services

Making changes to existing resources

## Summary

Using kubectl to Interact With Your Cluster

Application Deployments

# Thank You!

@nocentino

www.centinosystems.com