

Kubernetes Basics

ReplicaSets and Deployments

Agenda

1. What are ReplicaSets
2. ReplicaSet Components
3. What are Deployments
4. Deployment Components



What are ReplicaSets

What are ReplicaSets

- The purpose of a ReplicaSet is designed to maintain a set of Pods running
- They are used to guarantee the availability a specific number of Pods

```
apiVersion: apps/v1
kind: ReplicaSet
metadata:
  name: pod-1
  namespace: namespace-1
  labels:
    type: webserver
spec:
  replicas: 3
  selector:
    matchLabels:
      type: webserver
  template:
    metadata:
      labels:
        type: webserver
    spec:
      containers:
        - name: nginx
          image: nginx:1.14.2
```

ReplicaSets Components

ReplicaSet Components

These are the common fields that are needed for a ReplicaSet:

- **apiVersion** – will be “apps/v1”
- **kind** – will be “ReplicaSet”
- **metadata** – generally a “name” is assigned
- **spec** – this will have the specifications that make up a ReplicaSet
 - **replicas** – this represents the number of pods
- **selector** – this is a label selector
- **template**
 - **metadata**
 - **labels**
 - **spec** – this will have the specifications that make up a particular pod
 - **containers** – these fields make up the components needed for a container

What are Deployments

What are Deployments

- Deployments allows you to do updates to Pods and ReplicaSets declaratively
- Deployments allow you to outline the desired state and the Deployment Controller changes the current state to the new desired state
- Allows for Deployments to be rolled back to a previous Deployment if the Deployment is unstable

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: website-deployment
  labels:
    app: website
spec:
  replicas: 3
  selector:
    matchLabels:
      app: website
  template:
    metadata:
      labels:
        app: website
    spec:
      containers:
        - name: nginx
          image: nginx:1.14.2
          ports:
            - containerPort: 80
```


Deployment Components

Deployment Components

These are the common fields that are needed for a Deployment:

- **apiVersion** – will be “apps/v1”
- **kind** – will be “Deployment”
- **metadata** – generally a “name” is assigned
- **spec** – this will have the specifications that make up a Deployment
 - **replicas** – this represents the number of pods
- **selector** – this is a label selector
- **template**
 - **metadata**
 - **labels**
 - **spec** – this will have the specifications that make up a particular pod
 - **containers** – these fields make up the components needed for a container



Thank you

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