

Managing Kubernetes Services



David Clinton

Data Analyst | Linux System Administrator

bootstrap-it.com | linkedin.com/in/dbclinton



Load Balancers

Load Balancers

Identify resources

Load Balancers

Identify resources

Manage network
traffic

Load Balancers

Identify resources

**Manage network
traffic**

Track availability

Load Balancers

Identify resources

**Manage network
traffic**

Track availability

Make connections

Load Balancers

Identify resources

**Manage network
traffic**

Track availability

Make connections

**Maintain application
health**



Launching a LoadBalancer Service



Adding Session Affinity to a Kubernetes LoadBalancer



Applying a Kubernetes LoadBalancer to the Cloud

Creating an EKS Cluster

```
aws eks create-cluster \  
  --name my-cluster \  
  --role-arn arn:aws:iam::123456789012:role/EKSClusterRole \  
  --resources-vpc-config subnetIds=subnet-xxxxxxx,securityGroupIds=sg-xxxxxxx
```

Creating an EKS Cluster

```
aws eks create-cluster \  
  --name my-cluster \  
  --role-arn arn:aws:iam::123456789012:role/EKSClusterRole \  
  --resources-vpc-config subnetIds=subnet-xxxxxxx,securityGroupIds=sg-xxxxxxx
```

Creating an EKS Cluster

```
aws eks create-cluster \  
  --name my-cluster \  
  --role-arn arn:aws:iam::123456789012:role/EKSClusterRole \  
  --resources-vpc-config subnetIds=subnet-xxxxxxx,securityGroupIds=sg-xxxxxxx
```

Creating an EKS Cluster

```
aws eks create-cluster \  
  --name my-cluster \  
  --role-arn arn:aws:iam::123456789012:role/EKSClusterRole \  
  --resources-vpc-config subnetIds=subnet-xxxxxxx,securityGroupIds=sg-xxxxxxx
```

Confirming the EKS Cluster Creation

```
aws eks describe-cluster \  
  --name my-cluster \  
  --query "cluster.status"
```

Update kubectl to Use the New Cluster

```
aws eks update-kubeconfig \
  --name my-cluster
```

```
kubectl config current-context
```

Update kubectl to Use the New Cluster

```
aws eks update-kubeconfig \
  --name my-cluster
```

```
kubectl config current-context
```

Update kubectl to Use the New Cluster

```
aws eks update-kubeconfig \  
  --name my-cluster
```

```
kubectl config current-context
```

Deploy an Application

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: my-app
spec:
  replicas: 2
  selector:
    matchLabels:
      app: my-app
  template:
    metadata:
      labels:
        app: my-app
    spec:
      containers:
      - name: my-app
        image: nginx
        ports:
        - containerPort: 80
```

Apply a LoadBalancer Service

```
apiVersion: v1
kind: Service
metadata:
  name: my-app-service
spec:
  type: LoadBalancer
  selector:
    app: my-app
  ports:
    - protocol: TCP
      port: 80
      targetPort: 80
```

Retrieve the LoadBalancer Endpoint

```
kubectl get svc my-app-service
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
my-app-service	LoadBalancer	10.100.200.1	a1b2c3d4.amazonaws.com	80/TCP	5m

Retrieve the LoadBalancer Endpoint

```
kubectl get svc my-app-service
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
my-app-service	LoadBalancer	10.100.200.1	a1b2c3d4.amazonaws.com	80/TCP	5m

Annotations: Use IP Targets

```
metadata:  
  name: my-loadbalancer  
  annotations:  
    service.beta.kubernetes.io/aws-load-balancer-type: "external"  
    service.beta.kubernetes.io/aws-load-balancer-nlb-target-type: "ip"  
spec:  
  type: LoadBalancer  
  ...
```

Annotations: Enable Session Persistence

```
metadata:  
  annotations:  
    service.beta.kubernetes.io/aws-load-balancer-connection-idle-timeout: "60"
```

Annotations: Configure Custom External DNS Service

```
metadata:  
  annotations:  
    external-dns.alpha.kubernetes.io/hostname: "example.com"
```

Annotations: Create an Internal Load Balancer on Azure

```
metadata:  
  annotations:  
    service.beta.kubernetes.io/azure-load-balancer-internal: "true"
```