Troubleshooting Kubernetes Clusters

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Course Overview

Maintaining Kubernetes Clusters

Logging and Monitoring in Kubernetes Clusters

Troubleshooting Kubernetes Clusters

Summary

Troubleshooting tools

Cluster troubleshooting

- Nodes

- Control Plane

- Workloads

Troubleshooting Tools

kubectl logs

kubectl events

systemctl

journalctl

System logs

Troubleshooting - Nodes

kube-proxy

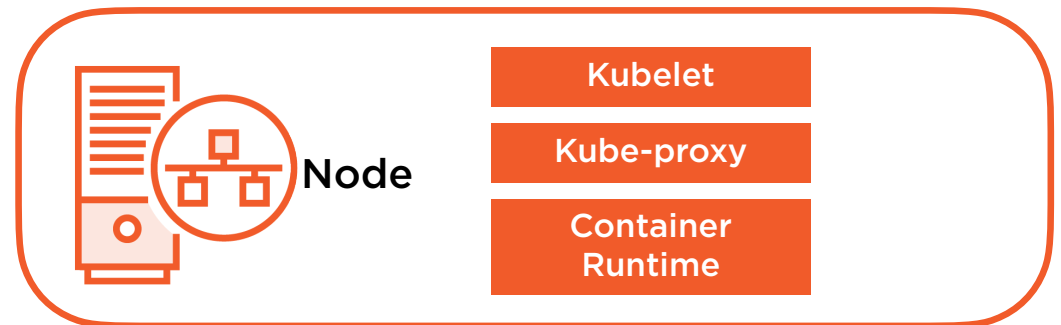kubelet

Container runtime

systemd

Network reachability

Server online

Node

Kubelet

Kube-proxy

Container Runtime

Managing the kubelet with systemd

```
#Get status of the systemd unit
systemctl status kubelet.service

#Set the kubelet to start on system boot
systemctl enable kubelet.service

#Start the kubelet if it's stopped
systemctl start kubelet.service

#systemd unit configuration
/etc/systemd/system/kubelet.service.d/10-kubeadm.conf

#kubelet ComponentConfig
/var/lib/kubelet/config.yaml
```

Demo

Troubleshooting Node failures

- Stopped kubelet

- Inaccesible kubelet config.yaml

- Misconfigured kubelet systemd unit

Troubleshooting - Control Plane
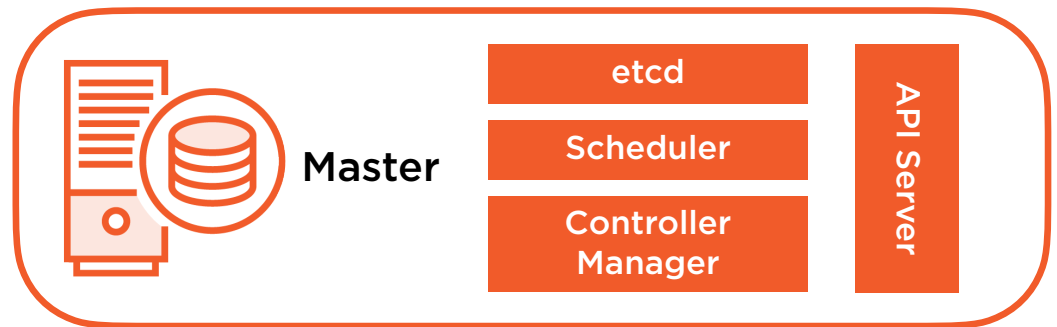
Control Plane Pods

Static pod manifest

kubelet

Container runtime

systemd

Network reachability

Server online

Accessible?

Correct?

Master

etcd

Scheduler

Controller Manager

API Server

```
/var/lib/kubelet/config.yaml
staticPodPath: /etc/kubernetes/manifests
```

Demo

Troubleshooting Control Plane failures

- Inaccessible Static Pod Manifests

- Misconfigured Static Pod Manifests

Troubleshooting Workloads

Services

Scheduling

Storage

Deployments

Pods

Configuring and Managing Kubernetes Networking, Services, and Ingress

Configuring and Managing Kubernetes Storage and Scheduling

Managing Kubernetes Controllers and Deployments

Managing the Kubernetes API Server and Pods

Review

Troubleshooting tools

Cluster troubleshooting

- Nodes

- Control Plane

- Workloads

Thank You!
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