

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

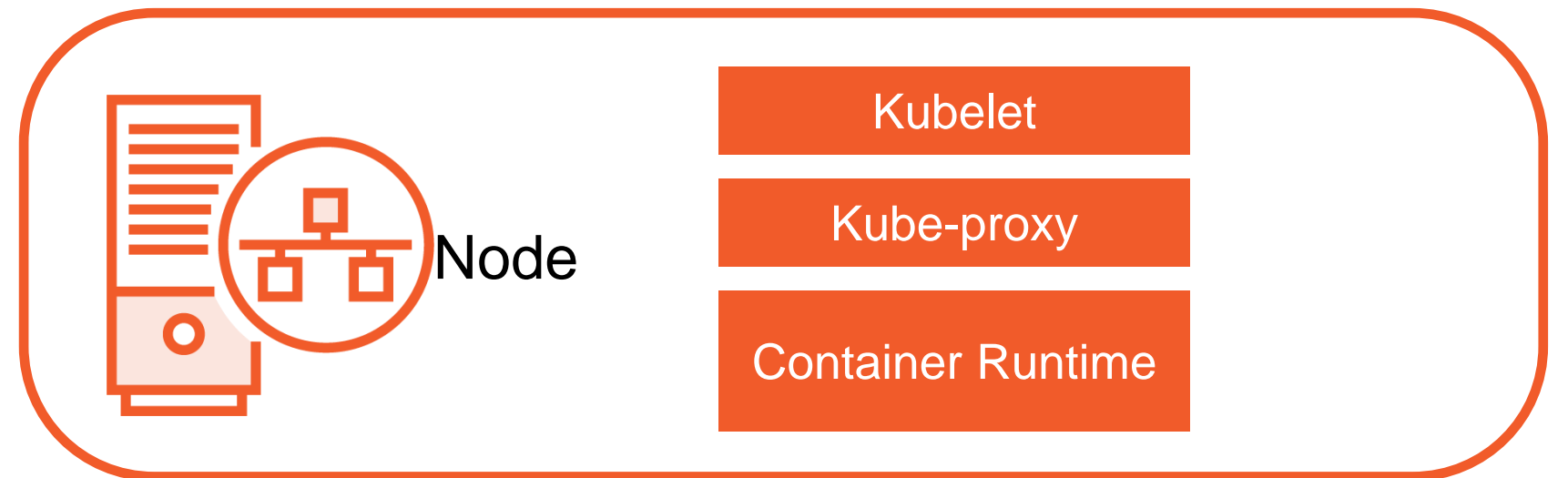
kubelet

Container runtime

systemd

Network reachability

Server online



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
- Inaccessible kubelet config.yaml
- Misconfigured kubelet systemd unit

Troubleshooting - Control Plane

Control Plane Pods

Static pod manifest

kubelet

Container runtime

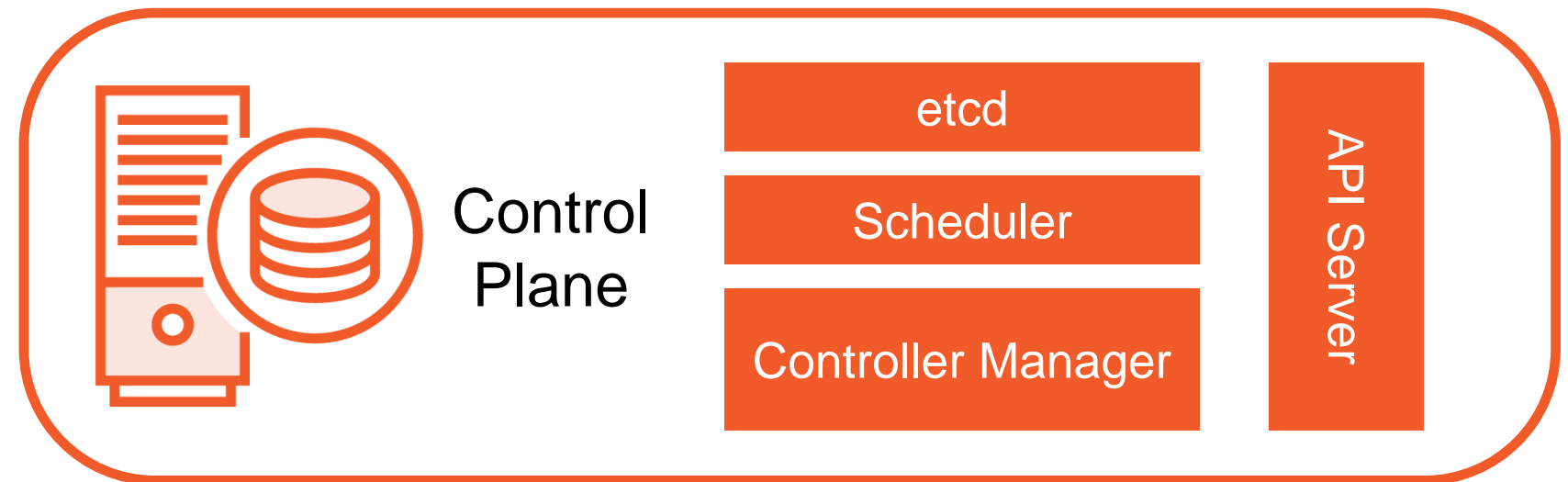
systemd

Network reachability

Server online

Accessible?

Correct?



```
/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

Configuring and Managing Kubernetes Networking, Services, and Ingress

Scheduling

Configuring and Managing Kubernetes Storage and Scheduling

Storage

Deployments

Managing Kubernetes Controllers and Deployments

Pods

Managing the Kubernetes API Server and Pods

Review

Troubleshooting tools

Cluster troubleshooting

- Nodes
- Control Plane
- Workloads

Thank You!
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