# Troubleshooting
## Worker Nodes

# KUBERNETES **ARCHITECTURE**



Developer

App
Configuration

Kubectl [...]

**Kubernetes MASTER Components**

Scheduler

API Server

ETCD

Controller
Manager

**Kubernetes WORKER Components**

Kube-Proxy

Kubelet

CRI: Docker

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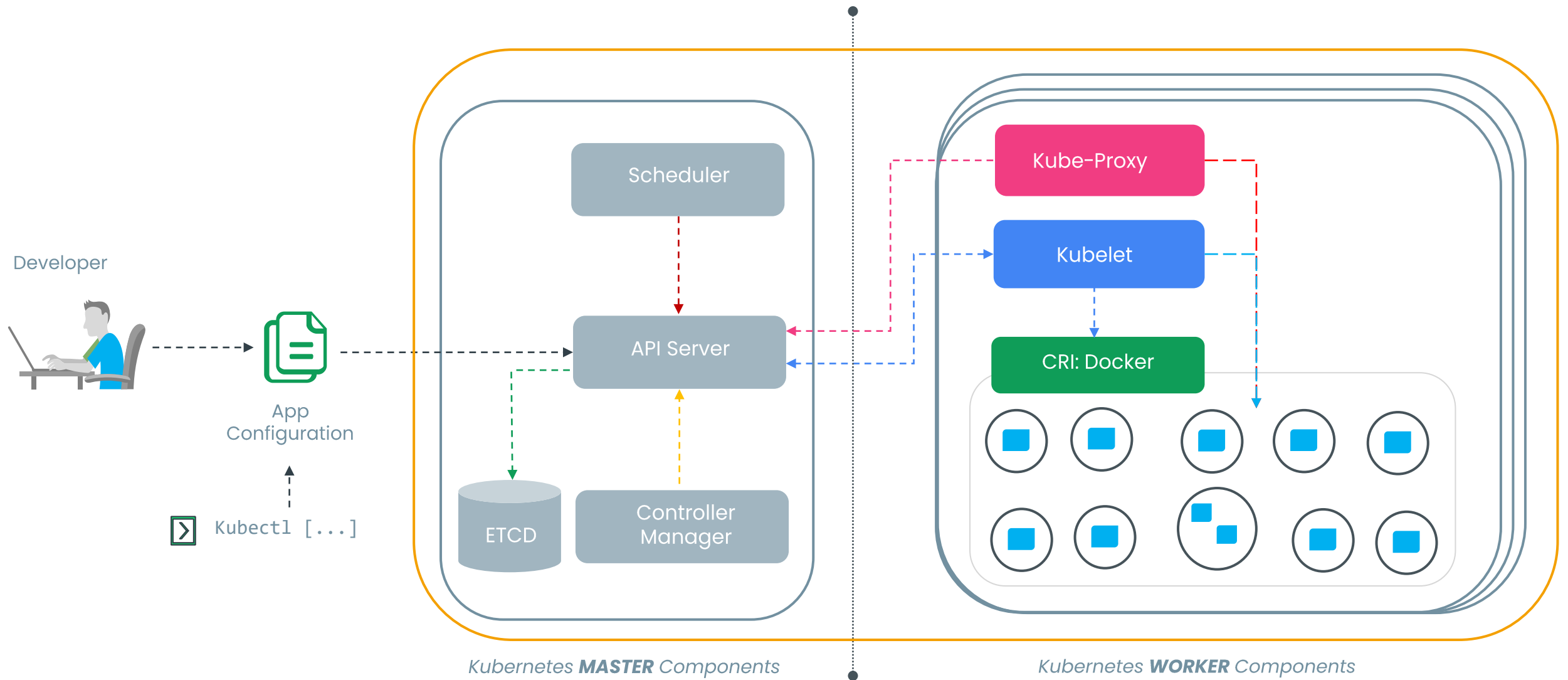
# TROUBLESHOOTING WORKER **NODES**

```
# kubectl get nodes
```

```
NAME      STATUS  ROLES    AGE  VERSION  INTERNAL-IP   EXTERNAL-IP  OS-IMAGE   KERNEL-VERSION  CONTAINER-RUNTIME
master    Ready   master   31d  v1.16.1  10.128.0.6    <none>       CentOS**   3.10.**         docker://1.13.1
worker-1  Ready   <none>   31d  v1.16.1  10.128.0.7    <none>       CentOS**   3.10.**         docker://1.13.1
worker-2  Ready   <none>   31d  v1.16.1  10.128.0.8    <none>       CentOS**   3.10.**         docker://1.13.1
```

```
# kubectl get nodes
```

```
NAME      STATUS   ROLES    AGE  VERSION  INTERNAL-IP   EXTERNAL-IP  OS-IMAGE   KERNEL-VERSION  CONTAINER-RUNTIME
master    Ready    master   31d  v1.16.1  10.128.0.6    <none>       CentOS**   3.10.**         docker://1.13.1
worker-1  Ready    <none>   31d  v1.16.1  10.128.0.7    <none>       CentOS**   3.10.**         docker://1.13.1
worker-2  Unknown  <none>   31d  v1.16.1  10.128.0.8    <none>       CentOS**   3.10.**         docker://1.13.1
```

| OutOfDisk | DiskPressure | MemoryPressure |
|-----------|--------------|----------------|

| Network Unavailable | PIDPressure | Kubelet |
|---------------------|-------------|---------|

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```
# kubectl describe node worker-1
```

```
Name:              worker-1
Roles:             <none>
...
Taints:            <none>
Unschedulable:     false
Conditions
Type           Status    LastHeartbeatTime        LastTransitionTime        Reason                        Message
----           ------    -----------------        ------------------        ------                        -------
MemoryPressure  False     Mon, 04 Nov 2019**       Thu, 03 Oct 2019**        KubeletHasSufficientMemory    kubelet has sufficient memory available
DiskPressure    False     Mon, 04 Nov 2019***      Thu, 03 Oct 2019**        KubeletHasNoDiskPressure      kubelet has no disk pressure
PIDPressure     False     Mon, 04 Nov 2019 **      Thu, 03 Oct 2019**        KubeletHasSufficientPID       kubelet has sufficient PID available
Ready           True      Mon, 04 Nov 2019***      Sat, 05 Oct 2019***       KubeletReady                  kubelet is posting ready status

...
Events:
  Type    Reason                  Age               From               Message
  ----    ------                  ----              ----               -------
  Normal  Starting                16m               kubelet, worker-1  Starting kubelet.
  Normal  NodeAllocatableEnforced 16m               kubelet, worker-1  Updated Node Allocatable limit across pods
  Normal  NodeHasSufficientMemory 16m (x8 over 16m) kubelet, worker-1  Node worker-1 status is now: NodeHasSufficientMemory
  Normal  NodeHasNoDiskPressure   16m (x8 over 16m) kubelet, worker-1  Node worker-1 status is now: NodeHasNoDiskPressure
  Normal  NodeHasSufficientPID    16m (x7 over 16m) kubelet, worker-1  Node worker-1 status is now: NodeHasSufficientPID
  Normal  Starting
```

# TROUBLESHOOTING WORKER NODES

## RESOURCES

### CPU

```
top
```

(or)

```
kubectl top node --sort-by cpu
```

### Memory

```
top
```

(or)

```
kubectl top node –sort-by memory
```

### Disk

```
df
```

## SERVICES

### Kubelet

```
# systemctl status kubelet
```

```
# systemctl enable kubelet
```

```
# systemctl restart kubelet
```

### Docker

```
# systemctl status docker
```

```
# systemctl enable docker
```

```
# systemctl restart docker
```

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