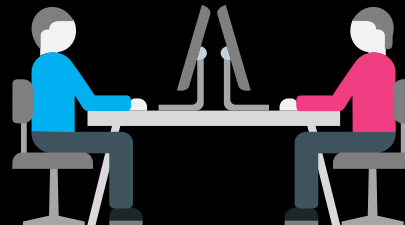


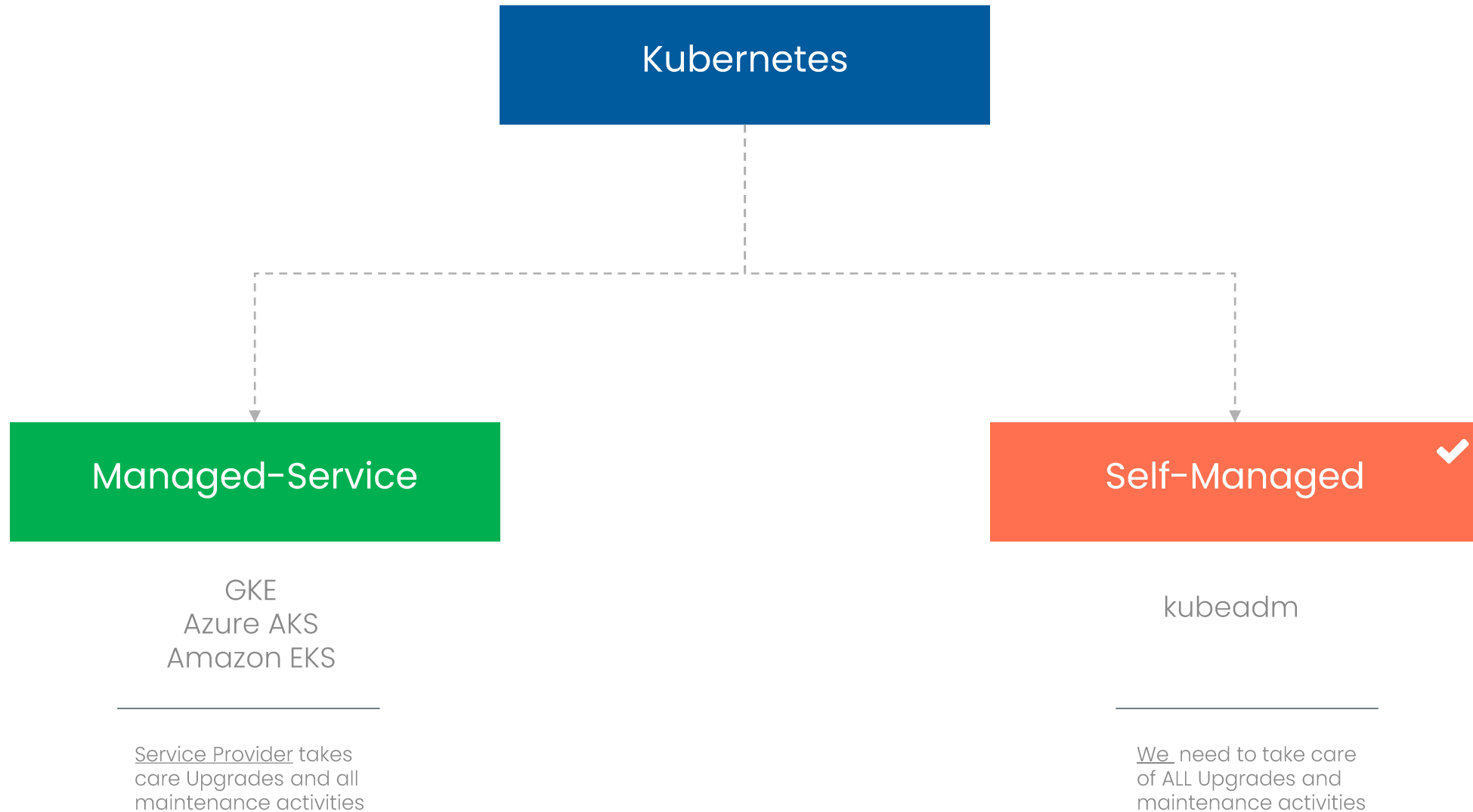


K8s Version Upgrade

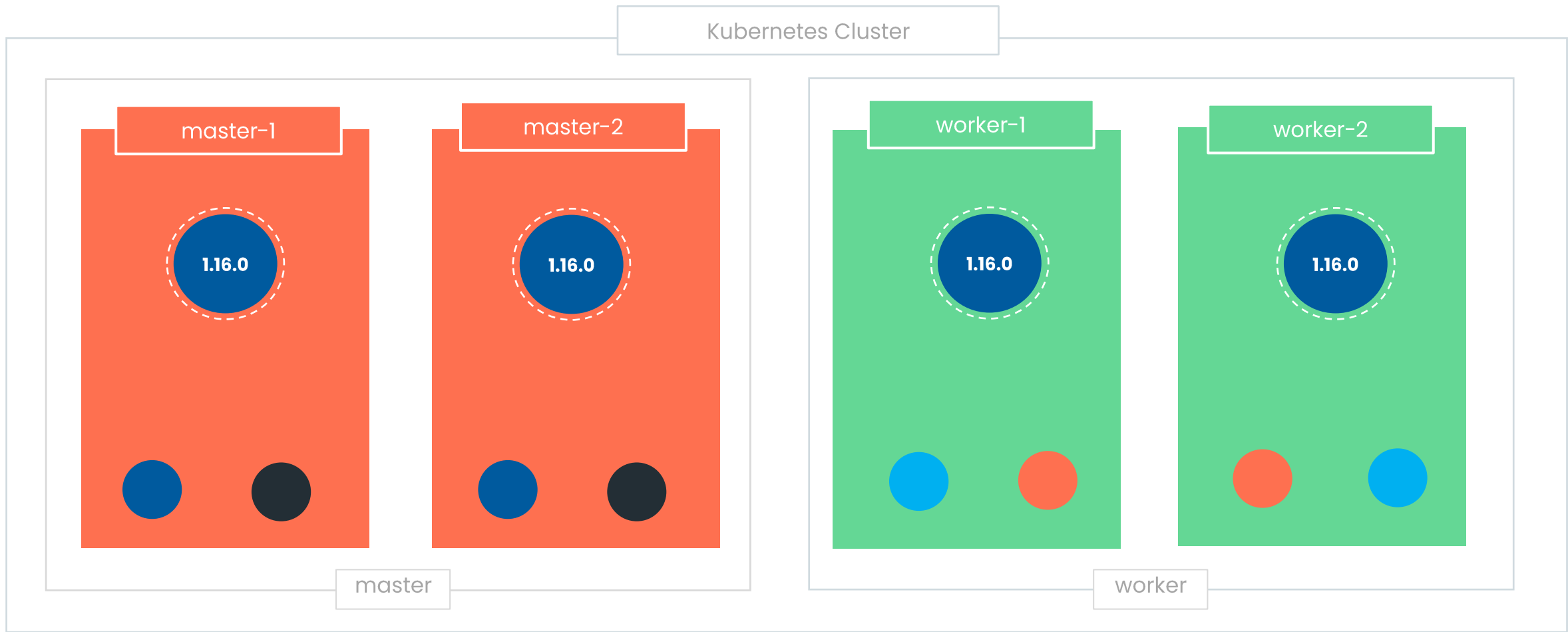
Using Kubeadm
(Step-by-Step)



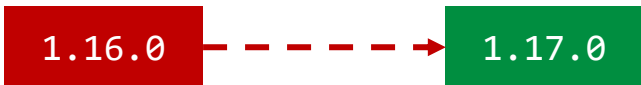
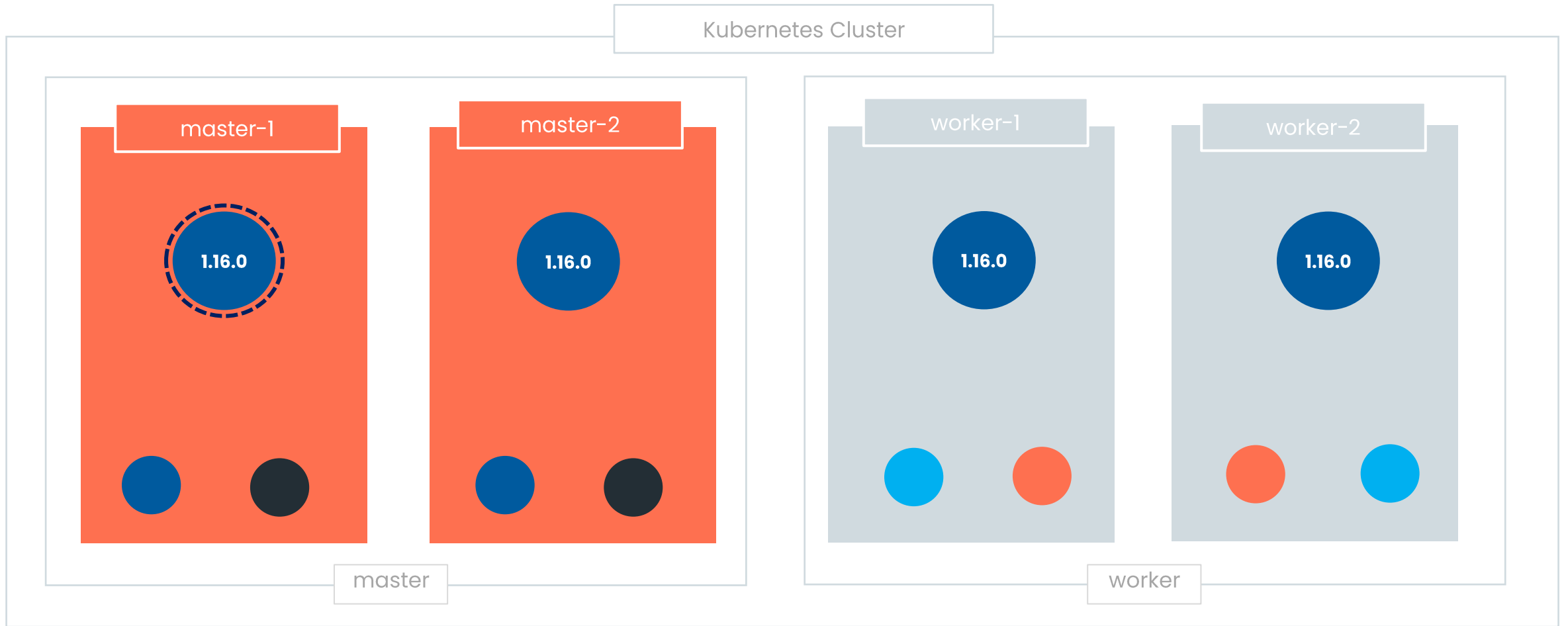
Kubernetes - **Solutions**



KUBERNETES **VERSIONING**



KUBERNETES VERSIONING



UPGRADING CONTROL PLANE NODES (1/5)

- Identify the node

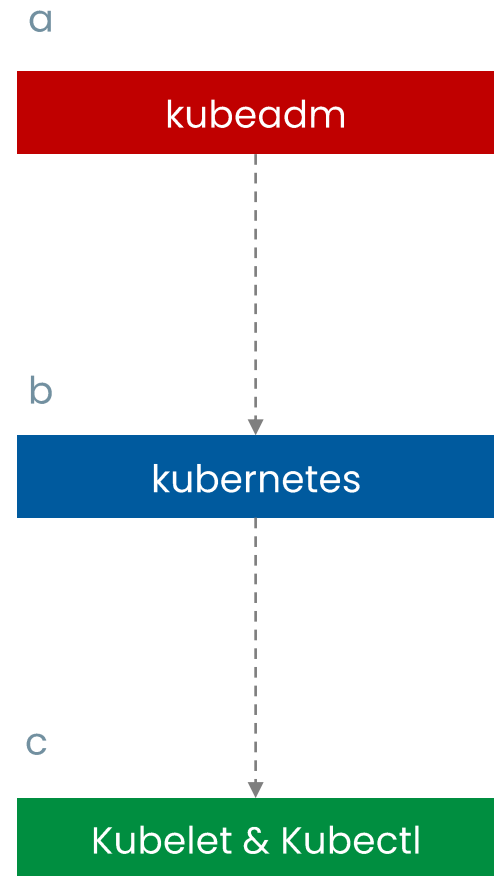
```
# kubectl get nodes
```

NAME	STATUS	ROLES	AGE	VERSION
master-1	Ready	master	26d	v1.16.0
master-2	Ready	master	26d	v1.16.0
worker-1	Ready	<none>	26d	v1.16.0
worker-2	Ready	<none>	26d	v1.16.0

- Find latest stable version

```
yum list --showduplicates kubeadm --disableexcludes=kubernetes
```

```
. . .
kubeadm.x86_64      1.16.2-0      kubernetes
kubeadm.x86_64      1.16.3-0      kubernetes
kubeadm.x86_64      1.16.4-0      kubernetes
kubeadm.x86_64      1.16.5-0      kubernetes
kubeadm.x86_64      1.17.0-0      kubernetes
```



UPGRADING CONTROL PLANE NODES (2/5)

- Upgrade "kubeadm"

```
# yum install -y kubeadm-1.17.0-0 --disableexcludes=Kubernetes
```

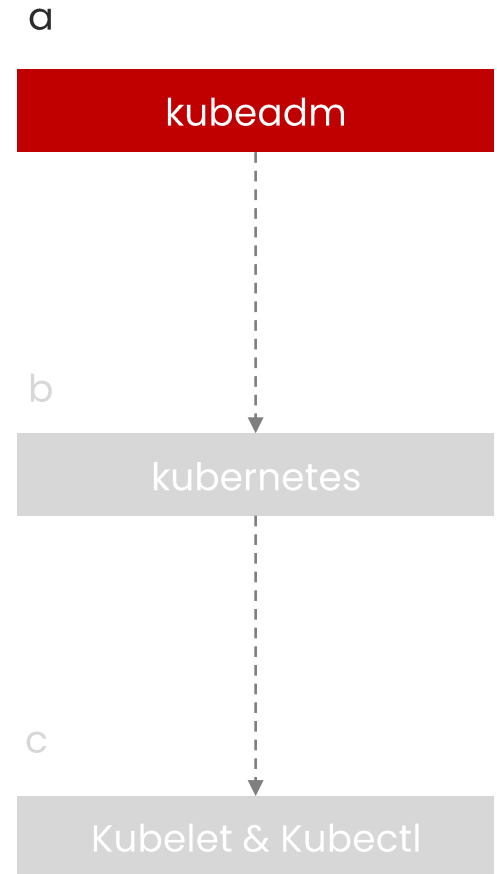
- Validate "kubeadm" version

```
# kubeadm version
```

```
kubeadm version: &version.Info{Major:"1", Minor:"17", GitVersion:"v1.17.0",  
...}
```

- Drain | Make the node Unschedulable & gracefully terminate pods

```
kubect1 drain [NODE-NAME] --ignore-daemonsets
```



UPGRADING CONTROL PLANE NODES (3/5)

Plan → Apply

Upgrade plan

```
# kubeadm upgrade plan
```

```
. . .
```

```
[upgrade/versions] Cluster version: v1.16.0
```

```
[upgrade/versions] kubeadm version: v1.17.0
```

```
Components that must be upgraded manually after you have upgraded the control plane with 'kubeadm upgrade apply':
```

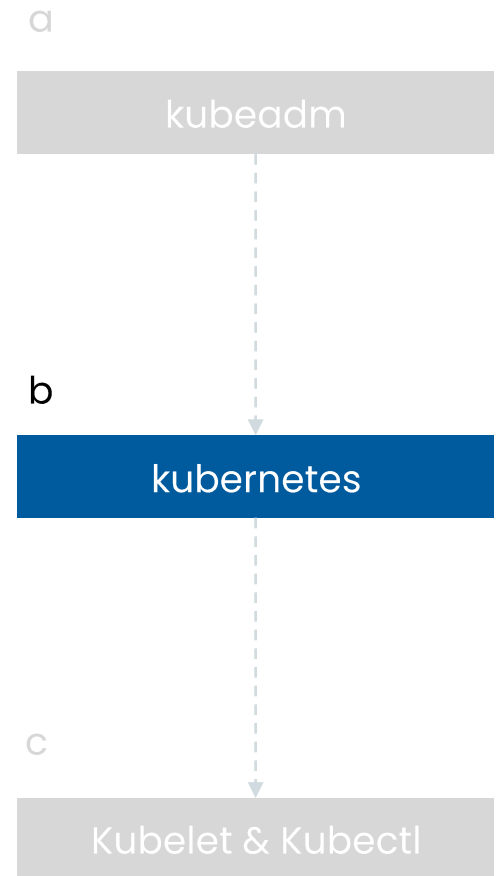
COMPONENT	CURRENT	AVAILABLE
Kubelet	1 x v1.16.0	v1.17.0

```
Upgrade to the latest version in the v1.17 series:
```

COMPONENT	CURRENT	AVAILABLE
API Server	v1.16.0	v1.17.0
Controller Manager	v1.16.0	v1.17.0
Scheduler	v1.16.0	v1.17.0
Kube Proxy	v1.16.0	v1.17.0
CoreDNS	1.3.1	1.6.2
Etcd	3.3.10	3.3.15

```
You can now apply the upgrade by executing the following command:
```

```
kubeadm upgrade apply v1.17.0
```



UPGRADING CONTROL PLANE NODES (4/5)



- Choose a version to upgrade to, and run the appropriate command.

```
# kubeadm upgrade apply v1.17.0
```

```
...
```

```
[upgrade/successful] SUCCESS! Your cluster was upgraded to "v1.17.0". Enjoy!
```

```
[upgrade/kubelet] Now that your control plane is upgraded, please proceed with upgrading your kubelet if you haven't already done so.
```

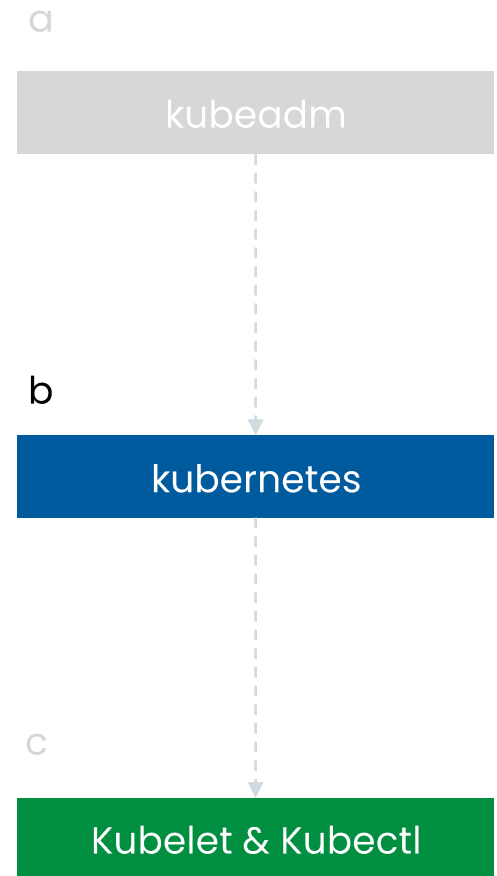
- Upgrade Kubelet and Kubectl and restart

```
yum install -y kubelet-1.17.0-0 kubect1-1.17.0-0 --disableexcludes=kubernetes
```

```
systemctl restart kubelet
```

- Uncordon | Makes the node schedulable again

```
kubect1 uncordon master-1
```



UPGRADING **OTHER** CONTROL PLANE NODES (5/5)

- SSH to Second Control Node (master-2)
- Upgrade Kubernetes on Second Control Node

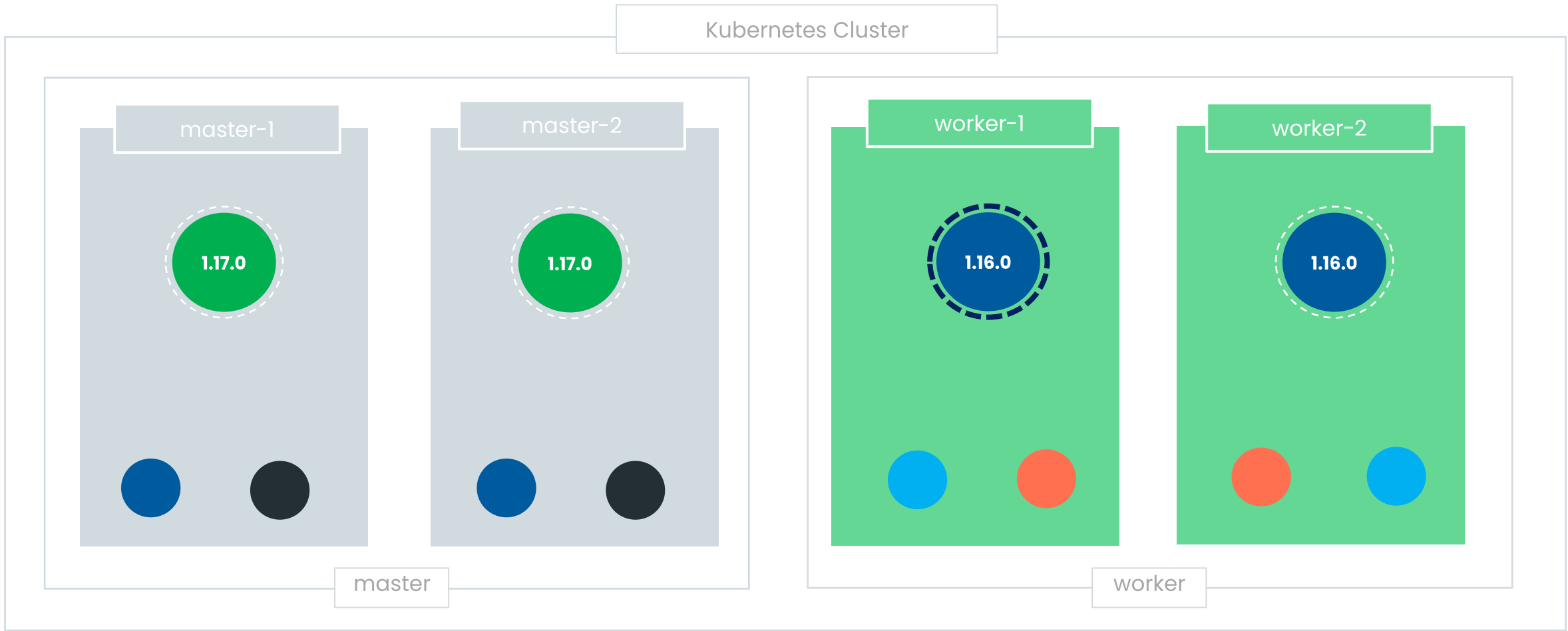
```
kubeadm upgrade node
```

- Upgrade Kubelet and Kubectl, and the restart kubelet

```
yum install -y kubelet-1.17.0-0 kubect1-1.17.0-0 --disableexcludes=kubernetes
```

```
systemctl restart kubelet
```

UPGRADING WORKER NODE



UPGRADING WORKER NODE (1/2)

- Upgrade "kubeadm"

```
# yum install -y kubeadm-1.17.0-0 --disableexcludes=Kubernetes
```

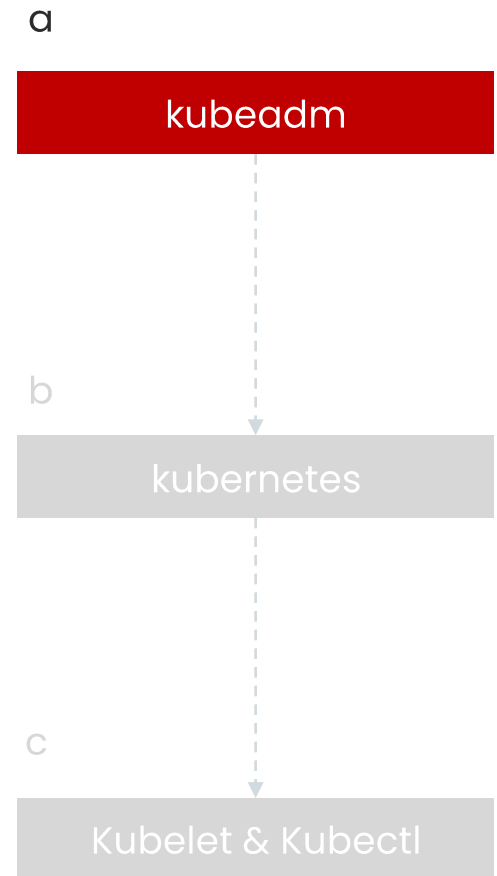
- Validate "kubeadm" version

```
# kubeadm version
```

```
kubeadm version: &version.Info{Major:"1", Minor:"17", GitVersion:"v1.17.0",  
...}
```

- Drain | Make the node Unschedulable & gracefully terminate pods

```
kubect1 drain [NODE-NAME] --ignore-daemonsets
```



UPGRADING WORKER NODE (2/2)

- Choose a version to upgrade to, and run the appropriate command.

```
# kubeadm upgrade node
```

```
...
```

```
[upgrade/successful] SUCCESS! Your cluster was upgraded to "v1.17.0". Enjoy!
```

```
[upgrade/kubelet] Now that your control plane is upgraded, please proceed with upgrading your kubelet if you haven't already done so.
```

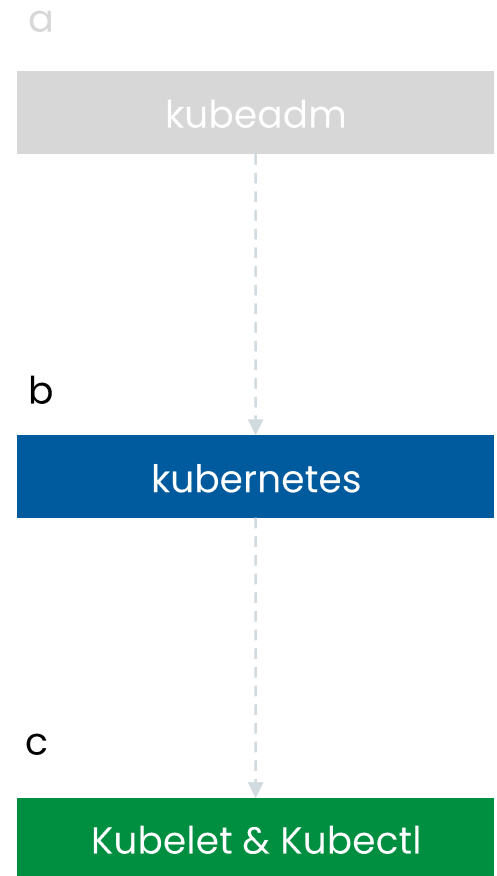
- Upgrade Kubelet and Kubectl and restart

```
yum install -y kubelet-1.17.0-0 kubectl-1.17.0-0 --disableexcludes=kubernetes
```

```
systemctl restart kubelet
```

- Uncordon | Make the node schedulable again

```
kubectl uncordon worker-1
```



VALIDATE

- Identify the node

```
# kubectl get nodes
```

NAME	STATUS	ROLES	AGE	VERSION
master-1	Ready	master	26d	v1.17.0
master-2	Ready	master	26d	v1.17.0
worker-1	Ready	<none>	26d	v1.17.0
worker-2	Ready	<none>	26d	v1.17.0