

How do you deploy **only one pod** on every node
or
subset of nodes inside cluster?



DaemonSet

Concept

Objectives

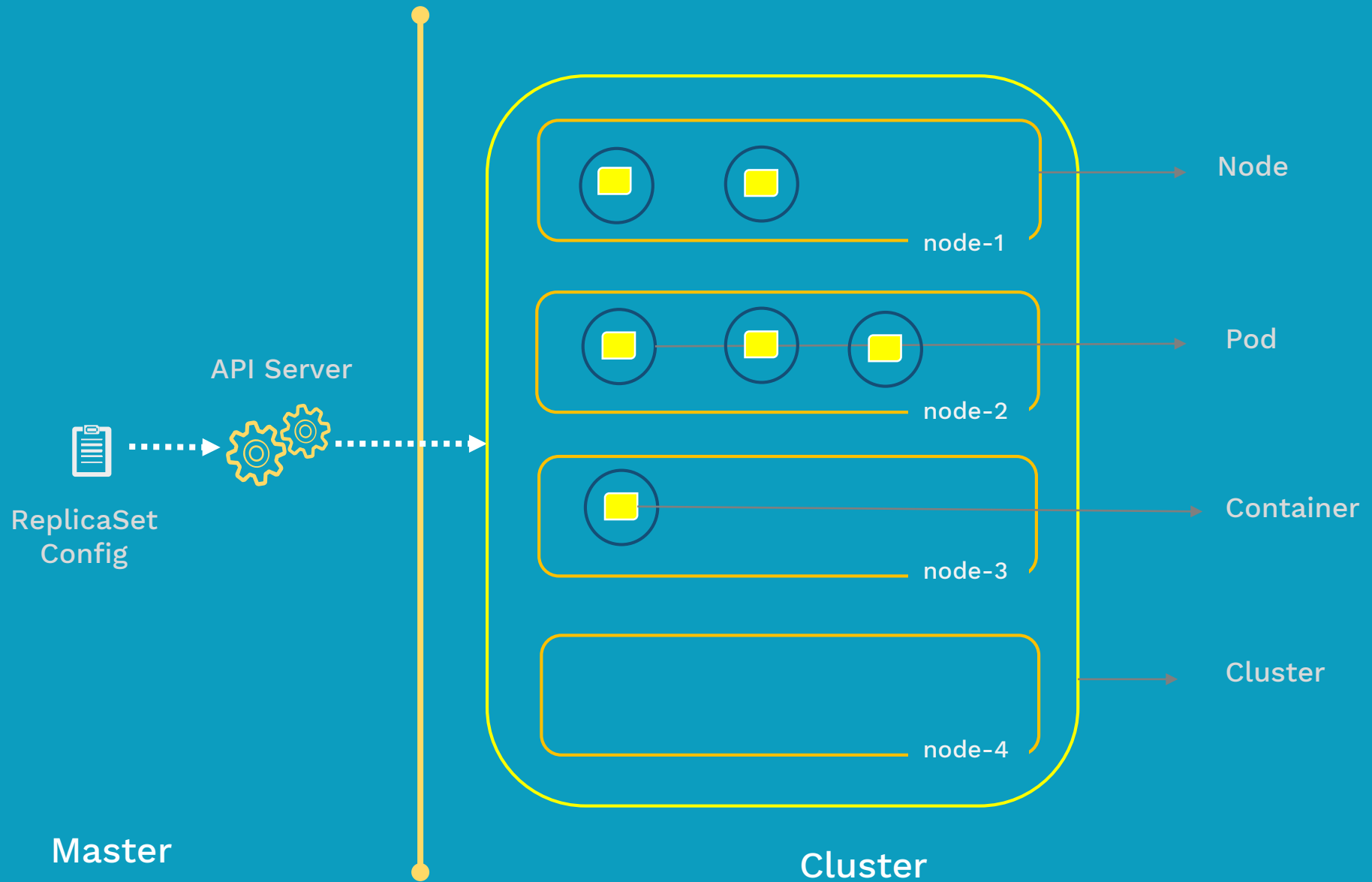
Concept

- a. Controller that comes close to DaemonSet
- b. DaemonSet Overview
- c. In-depth

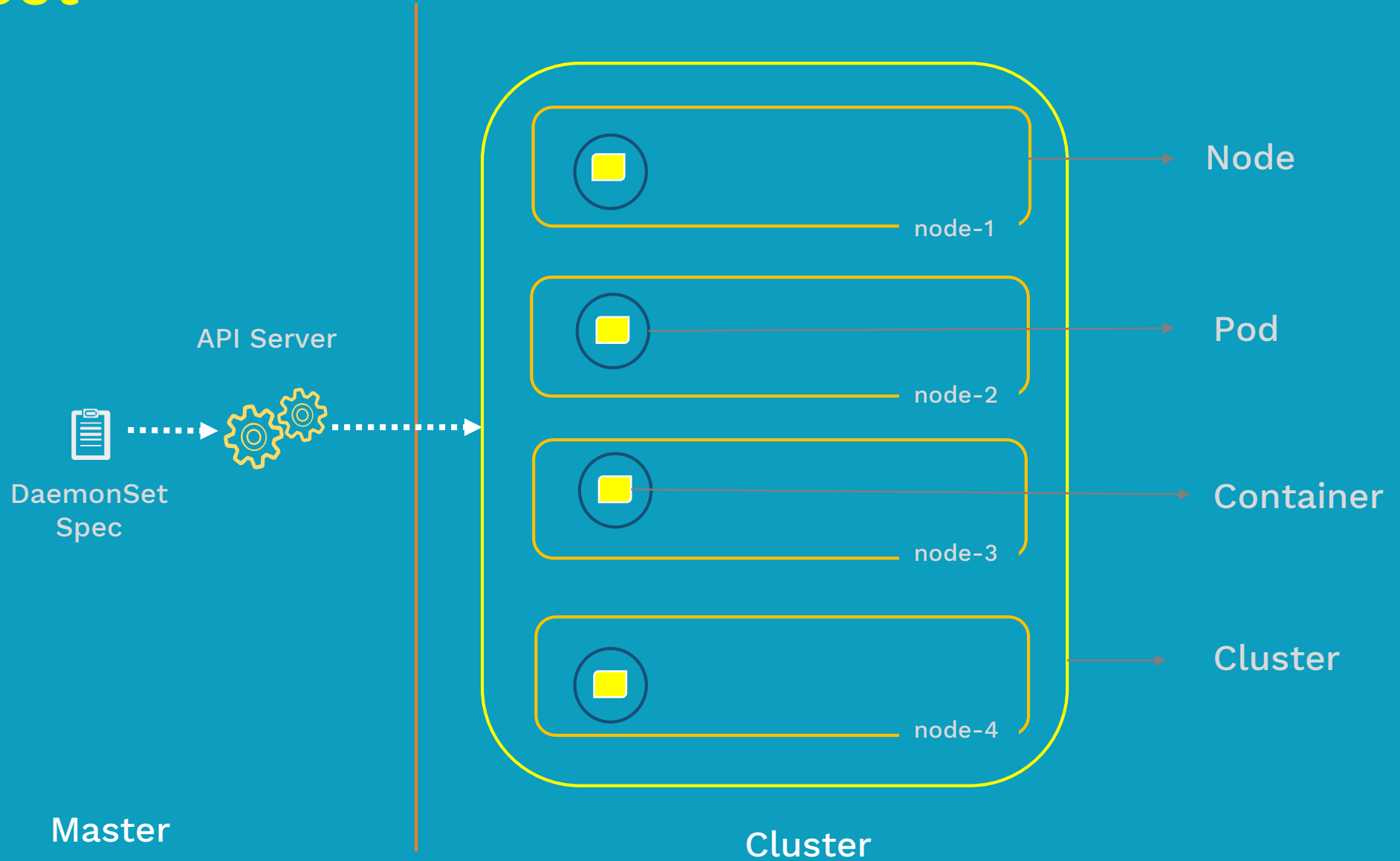
Review Demo

- a. Manifest file
- b. Deploy application with DaemonSet
- c. Display and validate DaemonSet
- d. Clean up

Replica Set



DaemonSet



DaemonSet - Overview

- A DaemonSet ensures that all (or some) Nodes run a copy of a Pod.
- As nodes are added to the cluster, Pods are added
- As nodes are removed from the cluster, those Pods are garbage collected
- Deleting a DaemonSet will clean up the Pods it created

Use Cases:

- Node monitoring daemons: Ex: **collectd**
- Log collection daemons: Ex: **fluentd**
- Storage daemons: Ex: **ceph**

Review Demo

a. Manifest file

b. Create DaemonSet




d. Display & Validate

e. Clean up

DaemonSet – Config file

```
#fluentds.yaml
apiVersion: apps/v1
kind: DaemonSet
metadata:
  name: fluentd-ds
spec:
  template:
    metadata:
      labels:
        name: fluentd
    spec:
      containers:
      - name: fluentd
        image: gcr.io/google-containers/fluentd-elasticsearch:1.20
  selector:
    matchLabels:
      name: fluentd
```



DaemonSet – Create and Display

```
[srinath@master ~]$ kubectl get no
```

NAME	STATUS	ROLES	AGE	VERSION
master	Ready	master	2d	v1.11.2
node1	Ready	<none>	2d	v1.11.2
node2	Ready	<none>	2d	v1.11.2

```
[srinath@master ~]$ kubectl create -f fluentd-daemonset.yaml
daemonset.apps/fluentd-ds created
```

```
[srinath@master ~]$ kubectl get po -o wide
```

NAME	READY	STATUS	RESTARTS	AGE	IP	NODE	NOMINATED NODE
fluentd-ds-22jhn	1/1	Running	0	58s	10.240.1.54	node1	<none>
fluentd-ds-2krwx	1/1	Running	0	58s	10.240.2.158	node2	<none>

```
[srinath@master ~]$ kubectl get ds
```

NAME	DESIRED	CURRENT	READY	UP-TO-DATE	AVAILABLE	NODE SELECTOR	AGE
fluentd-ds	2	2	2	2	2	<none>	3m

DaemonSet – Describe

```
[srinath@master ~]$ kubectl describe ds fluentd-ds
```

```
Name:          fluentd-ds
```

```
Selector:      name=fluentd
```

```
Node-Selector: <none>
```

```
Labels:        name=fluentd
```

```
Annotations:   <none>
```

```
Desired Number of Nodes Scheduled: 2
```

```
Current Number of Nodes Scheduled: 2
```

```
Number of Nodes Scheduled with Up-to-date Pods: 2
```

```
Number of Nodes Scheduled with Available Pods: 2
```

```
Number of Nodes Misscheduled: 0
```

```
Pods Status:  2 Running / 0 Waiting / 0 Succeeded / 0 Failed
```

```
Pod Template:
```

```
  Labels:  name=fluentd
```

```
  Containers:
```

```
    fluentd:
```

```
      Image:      gcr.io/google-containers/fluentd-elasticsearch:1.20
```

```
    ...
```

```
Events:
```

Type	Reason	Age	From	Message
----	-----	----	----	-----
Normal	SuccessfulCreate	9m	daemonset-controller	Created pod: fluentd-ds-22jhn
Normal	SuccessfulCreate	9m	daemonset-controller	Created pod: fluentd-ds-2krwx

DaemonSet – Delete

```
[srinath@master ~]$ kubectl delete ds fluentd-ds  
daemonset.extensions "fluentd-ds" deleted
```

```
[srinath@master ~]$ kubectl get po  
No resources found.
```

Summary

Concept

- a. A DaemonSet ensures that all (or some) Nodes run a copy of a Pod
- b. As nodes are added to the cluster, Pods are added to them
- c. As nodes are removed from the cluster, those Pods are garbage collected
- d. Deleting a DaemonSet will clean up the Pods it created
- e. Use cases – Node Monitoring, Storage Daemons, Log Collections

Review Demo

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Coming up...

Demo DaemonSet