

# Linux-Foundation

## Exam Questions KCNA

Kubernetes and Cloud Native Associate (KCNA)



#### NEW QUESTION 1

How to create deployment name app-dep, image=nginx, and replicas 5 using imperative command?

- A. kubectl create app-dep deployment --image=nginx --replicas=5
- B. kubectl create deployment app-dep --image=nginx --replicas=5
- C. kubectl create app-dep deployment --replicas=5 --image=nginx

**Answer: B**

#### Explanation:

<https://kubernetes.io/docs/reference/generated/kubectl/kubectl-commands#-em-deployment-em-> Text Description automatically generated with medium confidence

**Create a deployment named my-dep that runs the nginx image with 3 replicas**

```
kubectl create deployment my-dep --image=nginx --replicas=3
```

#### NEW QUESTION 2

What is the most common way to scale the application in the cloud environment?

- A. Parallel Scaling
- B. Horizontal Scaling
- C. Vertical Scaling

**Answer: B**

#### Explanation:

<https://kubernetes.io/docs/tasks/run-application/horizontal-pod-autoscale/>

#### NEW QUESTION 3

What is the name of the Kubernetes agent that runs on each worker nodes?

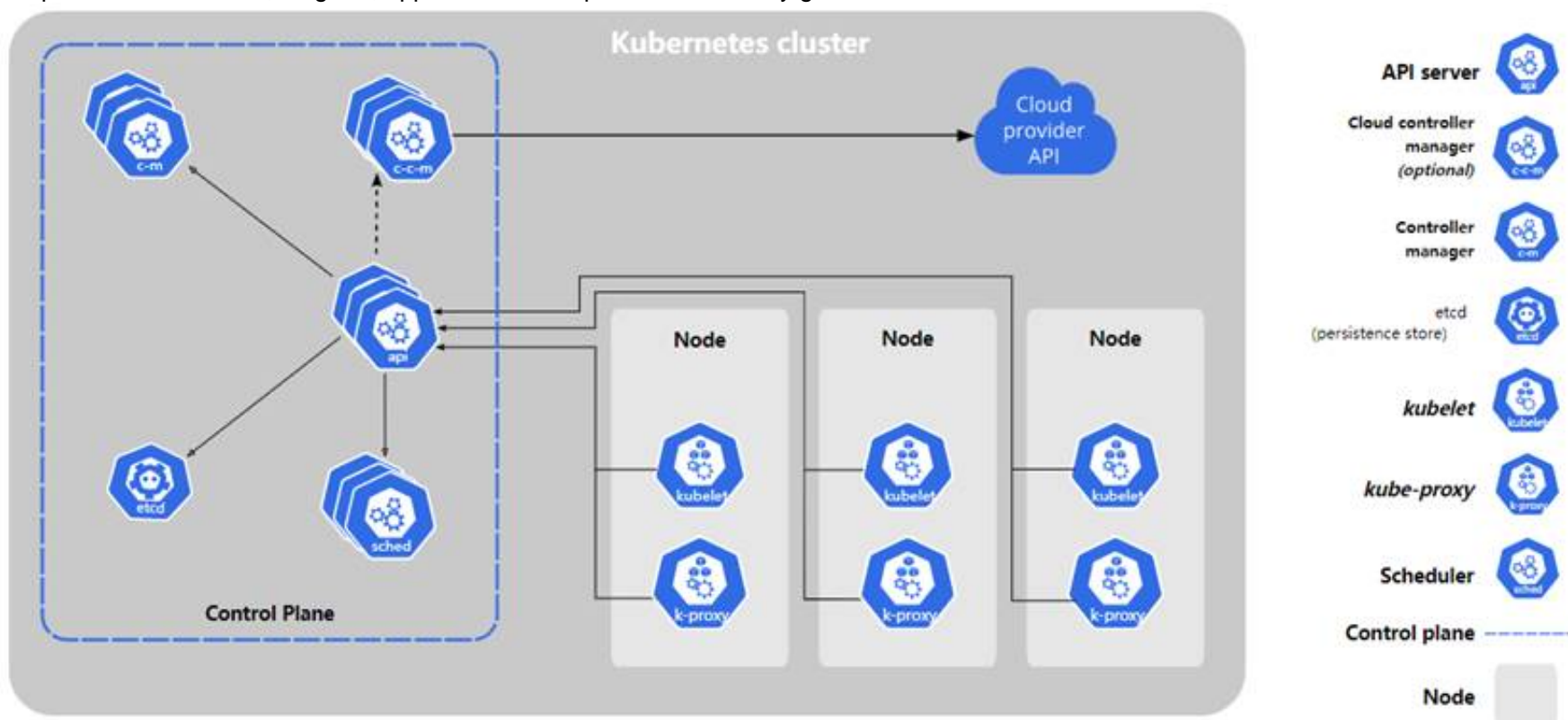
- A. kubelet
- B. systemd
- C. kube-proxy
- D. pod

**Answer: A**

#### Explanation:

<https://kubernetes.io/docs/concepts/overview/components/>

Graphical user interface, diagram, application Description automatically generated



#### NEW QUESTION 4

To specify a Kubernetes object which language is used?

- A. JSON
- B. Go
- C. YAML
- D. Node
- E. Python

**Answer:** C

**Explanation:**

<https://kubernetes.io/docs/concepts/overview/working-with-objects/kubernetes-objects/> Graphical user interface, text Description automatically generated

# Understanding Kubernetes Objects

This page explains how Kubernetes objects are represented in the Kubernetes API, and how you can express them in `.yaml` format.

## NEW QUESTION 5

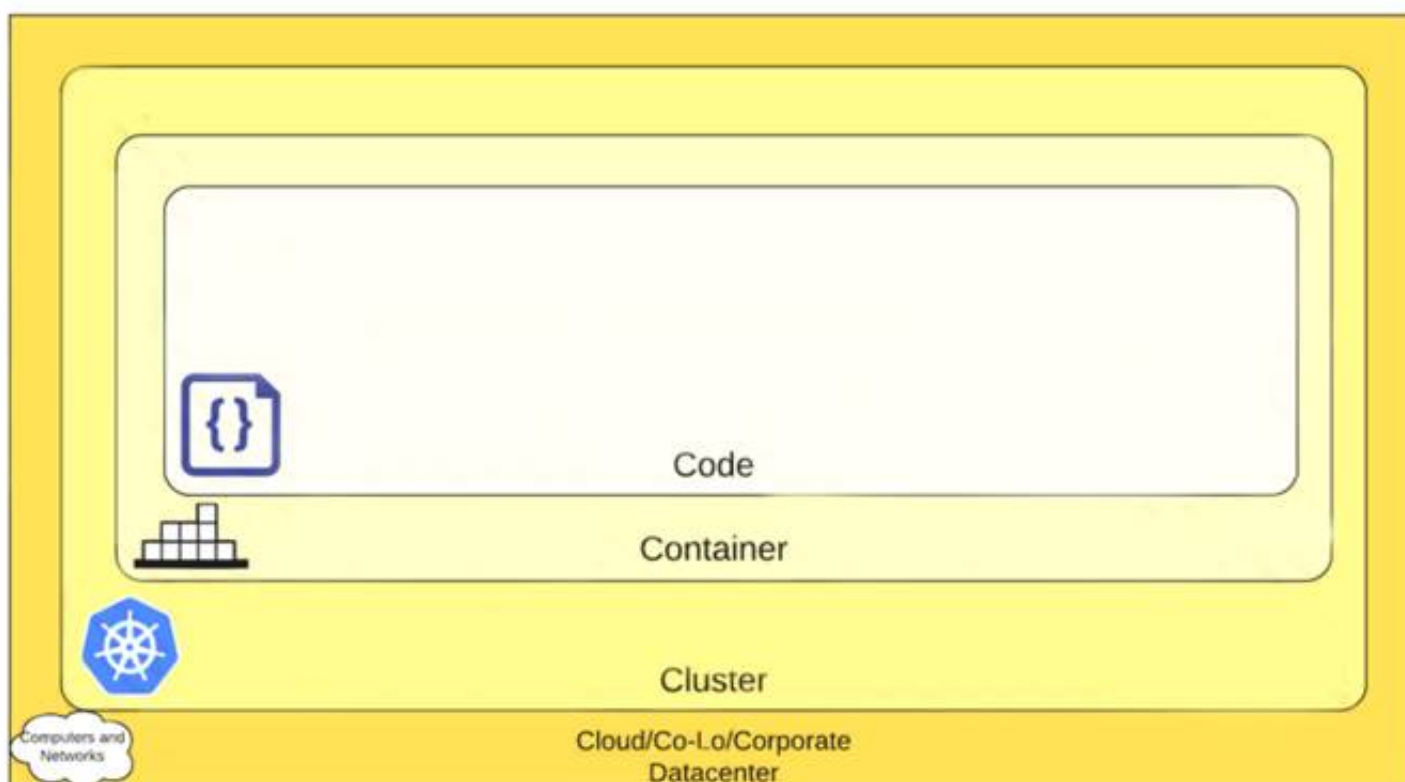
There are three Nodes in a cluster, and want to run exactly one replica of a Pod on each Node. Pre-fer to automatically create a replica on any new Nodes when they are added. Which Kubernetes re-source should you use?

- A. DaemonSet
- B. ReplicaSet
- C. NodeSet
- D. StatefulSet
- E. Deployment

**Answer:** A

**Explanation:**

<https://kubernetes.io/docs/concepts/workloads/controllers/daemonset/>  
 A DaemonSet runs replicas on all (or just some) Nodes in the cluster.  
 Table Description automatically generated with medium confidence



## NEW QUESTION 6

Which kubernetes resource type allows defining which pods are isolated when it comes to network-ing?

- A. Network policy
- B. Domain Name System 'DNS'
- C. Role Binding
- D. Service

**Answer:** A

**Explanation:**

<https://kubernetes.io/docs/concepts/services-networking/network-policies/#the-two-sorts-of-pod-isolation> Text, letter Description automatically generated



# The Two Sorts of Pod Isolation

There are two sorts of isolation for a pod: isolation for egress, and isolation for ingress. They concern what connections may be established. "Isolation" here is not absolute, rather it means "some restrictions apply". The alternative, "non-isolated for \$direction", means that no restrictions apply in the stated direction. The two sorts of isolation (or not) are declared independently, and are both relevant for a connection from one pod to another.

By default, a pod is non-isolated for egress; all outbound connections are allowed. A pod is isolated for egress if there is any NetworkPolicy that both selects the pod and has "Egress" in its `policyTypes`; we say that such a policy applies to the pod for egress. When a pod is isolated for egress, the only allowed connections from the pod are those allowed by the `egress` list of some NetworkPolicy that applies to the pod for egress. The effects of those `egress` lists combine additively.

By default, a pod is non-isolated for ingress; all inbound connections are allowed. A pod is isolated for ingress if there is any NetworkPolicy that both selects the pod and has "Ingress" in its `policyTypes`; we say that such a policy applies to the pod for ingress. When a pod is isolated for ingress, the only allowed connections into the pod are those from the pod's node and those allowed by the `ingress` list of some NetworkPolicy that applies to the pod for ingress. The effects of those `ingress` lists combine additively.

## NEW QUESTION 7

The Kubernetes rolling update is used for \_\_\_\_\_ .

- A. Updating a service
- B. Scaling an application
- C. Updating a deployment

**Answer:** C

### Explanation:

<https://kubernetes.io/docs/tutorials/kubernetes-basics/update/update-intro/>

Graphical user interface, text Description automatically generated with medium confidence

# Performing a Rolling Update

## Objectives

- Perform a rolling update using kubectl.

## Updating an application

Users expect applications to be available all the time and developers are expected to deploy new versions of them several times a day. In Kubernetes this is done with rolling updates. **Rolling updates** allow Deployments' update to take place with zero downtime by incrementally updating Pods instances with new ones. The new Pods will be scheduled on Nodes with available resources.

In the previous module we scaled our application to run multiple instances. This is a requirement for performing updates without affecting application availability. By default, the maximum number of Pods that can be unavailable during the update and the maximum number of new Pods that can be created, is one. Both options can be configured to either numbers or percentages (of Pods). In Kubernetes, updates are versioned and any Deployment update can be reverted to a previous (stable) version.

### Summary:

- Updating an app

*Rolling updates allow Deployments' update to take place with zero downtime by incrementally updating Pods instances with new ones.*

## NEW QUESTION 8

A new Pod is created. Then, the Pod is assigned to a Node. Which Kubernetes component was re-sponsible for determining which Node to assign the Pod to?

- A. kubelet

- B. Scheduler
- C. API Server
- D. Controller manager

**Answer:** B

**Explanation:**

<https://kubernetes.io/docs/reference/command-line-tools-reference/kube-scheduler/> Graphical user interface, text, application Description automatically generated

The Kubernetes scheduler is a control plane process which assigns Pods to Nodes. The scheduler determines which Nodes are valid placements for each Pod in the scheduling queue according to constraints and available resources. The scheduler then ranks each valid Node and binds the Pod to a suitable Node. Multiple different schedulers may be used within a cluster; kube-scheduler is the reference implementation. See [scheduling](#) for more information about scheduling and the kube-scheduler component.

```
kube-scheduler [flags]
```

**NEW QUESTION 9**

Which project is not a dominant CNCF project in the storage landscape?

- A. Envoy
- B. Vitess
- C. Rook
- D. TiKV

**Answer:** A

**Explanation:**

<https://github.com/cncf/landscape#trail-map>

A picture containing timeline Description automatically generated





## CLOUD NATIVE TRAIL MAP

The Cloud Native Landscape (cncl.io) has a large number of options. This Cloud Native Trail Map is a recommended process for leveraging open source, cloud native technologies. At each step, you can choose a vendor-supported offering or do it yourself, and everything after step #3 is optional based on your circumstances.

### HELP ALONG THE WAY

#### A. Training and Certification

Consider training offerings from CNCF and then take the exam to become a Certified Kubernetes Administrator or a Certified Kubernetes Application Developer [cncf.io/training](https://cncf.io/training)

#### B. Consulting Help

If you want assistance with Kubernetes and the surrounding ecosystem, consider leveraging a Kubernetes Certified Service Provider. [cncf.io/csp](https://cncf.io/csp)

#### C. Join CNCF's End User Community

For companies that don't offer cloud native services externally [cncf.io/enduser](https://cncf.io/enduser)

### WHAT IS CLOUD NATIVE?

Cloud native technologies empower organizations to build and run scalable applications in modern, dynamic environments such as public, private, and hybrid clouds. Containers, service meshes, microservices, immutable infrastructure, and declarative APIs exemplify this approach.

These techniques enable loosely coupled systems that are resilient, manageable, and observable. Combined with robust automation, they allow engineers to make high-impact changes frequently and predictably with minimal toil.

The Cloud Native Computing Foundation seeks to drive adoption of this paradigm by fostering and sustaining an ecosystem of open source, vendor-neutral projects. We democratize state-of-the-art patterns to make these innovations accessible for everyone.

[cncl.io](https://cncl.io)

v20200501



### NEW QUESTION 10

Which prometheus metric type represents a single number value that can increase and decrease over time?

- A. Gauge
- B. Histogram
- C. Summary
- D. Counter

**Answer: A**

#### Explanation:

[https://prometheus.io/docs/concepts/metric\\_types/#gauge](https://prometheus.io/docs/concepts/metric_types/#gauge) Graphical user interface, text Description automatically generated

**Gauge**

A *gauge* is a metric that represents a single numerical value that can arbitrarily go up and down.

Gauges are typically used for measured values like temperatures or current memory usage, but also "counts" that can go up and down, like the number of concurrent requests.

### NEW QUESTION 10

Which of the following best describes a cloud-native app?

- A. An application where all logic is coded into a single large binary.
- B. An application that publishes an HTTPS web front-end.
- C. An application that takes advantages of cloud computing frameworks and their loosely coupled cloud services.
- D. An application that leverages services that are native to public cloud platforms such as Azure, GCP, and/or AWS

**Answer: C**

**Explanation:**

Cloud-native apps leverage cloud computing frameworks and tend to be microservices based, where individual components of the app are coded as individual.

**NEW QUESTION 13**

To run a startup task before a Pod's container starts up. What Kubernetes feature can help you ac-complish this?

- A. Init container
- B. Sidecar container
- C. Startup probe
- D. DaemonSet

**Answer:** A

**Explanation:**

<https://kubernetes.io/docs/concepts/workloads/pods/init-containers/> Text, letter Description automatically generated

A Pod can have multiple containers running apps within it, but it can also have one or more init containers, which are run before the app containers are started.

Init containers are exactly like regular containers, except:

- Init containers always run to completion.
- Each init container must complete successfully before the next one starts.

If a Pod's init container fails, the kubelet repeatedly restarts that init container until it succeeds. However, if the Pod has a `restartPolicy` of `Never`, and an init container fails during startup of that Pod, Kubernetes treats the overall Pod as failed.

To specify an init container for a Pod, add the `initContainers` field into the [Pod specification](#), as an array of `container` items (similar to the app `containers` field and its contents). See [Container](#) in the API reference for more details.

**NEW QUESTION 17**

What do control groups provide when it come to containers

- A. Permission
- B. Image Storage
- C. Isolation
- D. Logging

**Answer:** C

**Explanation:**

Text Description automatically generated

What is the use of kernel control groups in container technology?

A control group (cgroup) is a Linux kernel feature that limits, accounts for, and isolates the resource usage (CPU, memory, disk I/O, network, and so on) of a collection of processes. Jul 21, 2021

**NEW QUESTION 22**

Fluentd is the only way to export logs from Kubernetes cluster or applications running in cluster

- A. True
- B. False

**Answer:** B

**Explanation:**

<https://github.com/cncf/landscape#trail-map>

A picture containing timeline Description automatically generated





## CLOUD NATIVE TRAIL MAP

The Cloud Native Landscape ([cncf.io](https://cncf.io)) has a large number of options. This Cloud Native Trail Map is a recommended process for leveraging open source, cloud native technologies. At each step, you can choose a vendor-supported offering or do it yourself, and everything after step #3 is optional based on your circumstances.

### HELP ALONG THE WAY

#### A. Training and Certification

Consider training offerings from CNCF and then take the exam to become a Certified Kubernetes Administrator or a Certified Kubernetes Application Developer [cncf.io/training](https://cncf.io/training)

#### B. Consulting Help

If you want assistance with Kubernetes and the surrounding ecosystem, consider leveraging a Kubernetes Certified Service Provider. [cncf.io/csp](https://cncf.io/csp)

#### C. Join CNCF's End User Community

For companies that don't offer cloud native services externally [cncf.io/enduser](https://cncf.io/enduser)

### WHAT IS CLOUD NATIVE?

Cloud native technologies empower organizations to build and run scalable applications in modern, dynamic environments such as public, private, and hybrid clouds. Containers, service meshes, microservices, immutable infrastructure, and declarative APIs exemplify this approach.

These techniques enable loosely coupled systems that are resilient, manageable, and observable. Combined with robust automation, they allow engineers to make high-impact changes frequently and predictably with minimal toil.

The Cloud Native Computing Foundation seeks to drive adoption of this paradigm by fostering and sustaining an ecosystem of open source, vendor-neutral projects. We democratize state-of-the-art patterns to make these innovations accessible for everyone.

[cncf.io](https://cncf.io)

v20200501



### NEW QUESTION 25

What is OPA?

- A. Open Permission Agent
- B. Online Policy Audit
- C. Open Policy Agent
- D. Offline Policy Accessor

**Answer: C**

### Explanation:

<https://www.cncf.io/projects/open-policy-agent-opa/>

Graphical user interface, text, application, email Description automatically generated

**CLOUD NATIVE COMPUTING FOUNDATION**

About Projects Training Community Blog & News [Join](#)

**PROJECTS**

## Open Policy Agent (OPA)

**An open source, general-purpose policy engine.**

Open Policy Agent (OPA) was accepted to CNCF on **March 29, 2018** and is at the **Graduated** project maturity level.

Open Policy Agent



#### NEW QUESTION 27

What is the command to list all the available objects in your Kubernetes cluster?

- A. kubectl get all
- B. kubectl get api-resources
- C. kubectl api-resources
- D. kubectl get pods

**Answer:** C

#### Explanation:

<https://kubernetes.io/docs/reference/kubectl/cheatsheet/>

Graphical user interface, text, application, email Description automatically generated

### Resource types

List all supported resource types along with their shortnames, **API group**, whether they are **namespaced**, and **Kind**:

```
kubectl api-resources
```

#### NEW QUESTION 31

Which of the following command is used to get detailed information about the pod?

- A. kubectl info
- B. kubectl get
- C. kubectl describe
- D. kubectl explain

**Answer:** C

#### Explanation:

<https://kubernetes.io/docs/reference/generated/kubectl/kubectl-commands#describe> Graphical user interface, application Description automatically generated

#### Describe a pod

```
kubectl describe pods/nginx
```

#### Describe a pod identified by type and name in "pod.json"

```
kubectl describe -f pod.json
```

#### Describe all pods

```
kubectl describe pods
```

#### NEW QUESTION 35

Which of the following is not the Kubernetes AutoScaling Strategy?

- A. Horizontal Pod Autoscaler
- B. Cluster Autoscaler
- C. Vertical Pod Autoscaler
- D. Load Balancing AutoScaler

**Answer:** D

#### Explanation:

<https://learnk8s.io/kubernetes-autoscaling-strategies>

Graphical user interface, text Description automatically generated with medium confidence

In Kubernetes, several things are referred to as "autoscaling", including:

- Horizontal Pod Autoscaler.
- Vertical Pod Autoscaler.
- Cluster Autoscaler.

**NEW QUESTION 40**

How would you return all the pod data in the json format using kubectl command?

- A. kubectl get pods -o json
- B. kubectl get pods --all-namespaces
- C. kubectl get pods -o wide
- D. kubectl get pods -o jsonpath

**Answer:** A

**Explanation:**

<https://kubernetes.io/docs/reference/generated/kubectl/kubectl-commands#get>

**NEW QUESTION 44**

How should folks new to the cloud native ecosystem, go about learning the different aspects of the ecosystem?

- A. by signing up the CNCF slack
- B. by reading the Kubernetes documentation
- C. by looking at the cloud native landscape
- D. by looking at the cloud native trail-map

**Answer:** D

**Explanation:**

<https://github.com/cncf/landscape#trail-map>

**NEW QUESTION 49**

What do GitOps tools do in kubernetes?

- A. They allow us to make changes to a kubernetes cluster using a Git repository
- B. They manage the source code of kubernetes itself
- C. They allow us to store software code in Git
- D. They allows us to store container images in repositories

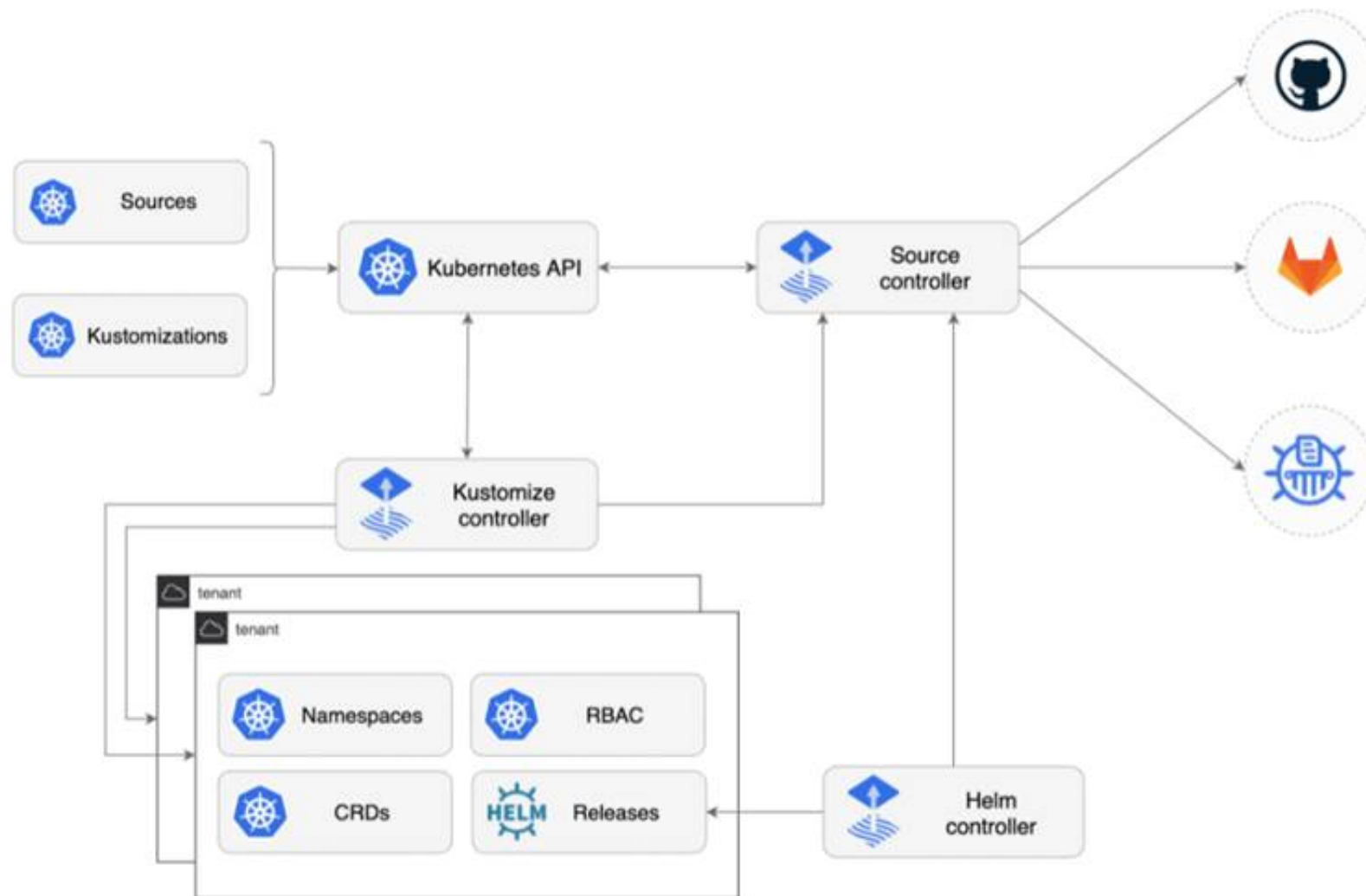
**Answer:** A

**Explanation:**

<https://fluxcd.io/docs/components/>

Diagram Description automatically generated





#### NEW QUESTION 51

Flux is built using which toolkit?

- A. CI/CD
- B. DevSecOps
- C. GitOps
- D. DevOps

**Answer: C**

#### Explanation:

<https://fluxcd.io/>

Graphical user interface, text, application Description automatically generated

**Flux provides  
GitOps for both  
apps and  
infrastructure**

Flux and Flagger deploy apps with canaries, feature flags, and A/B rollouts. Flux can also manage any Kubernetes resource. Infrastructure and workload dependency management is built in.

**Just push to Git  
and Flux does the  
rest**

Flux enables application deployment (CD) and (with the help of Flagger) progressive delivery (PD) through automatic reconciliation. Flux can even push back to Git for you with automated container image updates to Git (image scanning and patching).

#### NEW QUESTION 56

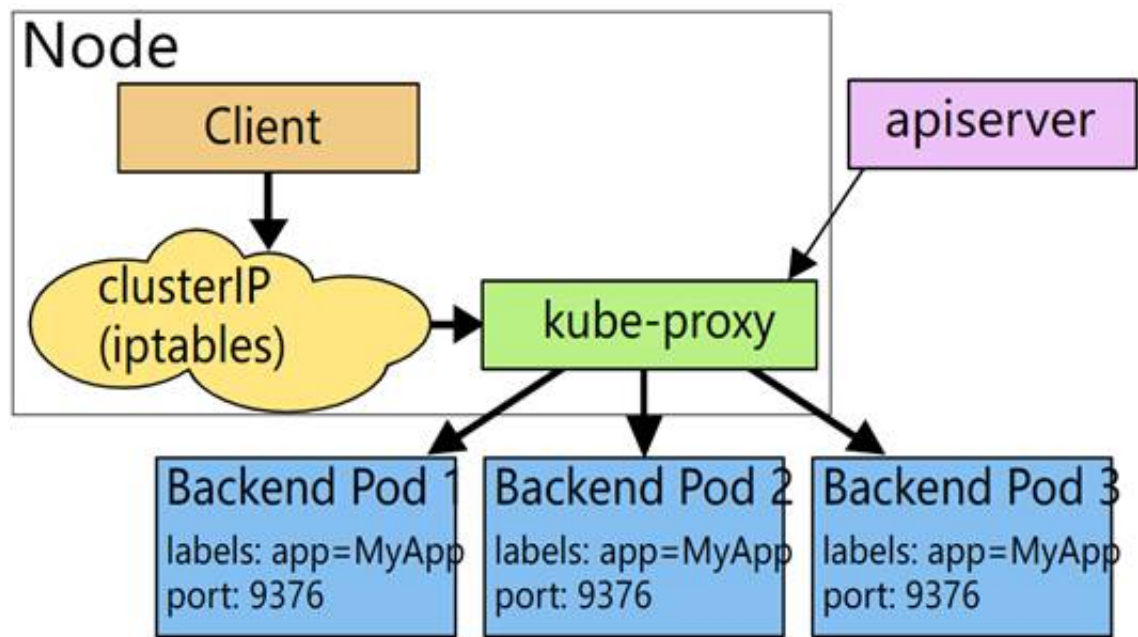
How does service logical group set of pods?

- A. Using hostname
- B. Using label and selectors
- C. Using IP address

**Answer: B**

#### Explanation:

<https://kubernetes.io/docs/concepts/services-networking/service/> Diagram Description automatically generated



#### NEW QUESTION 59

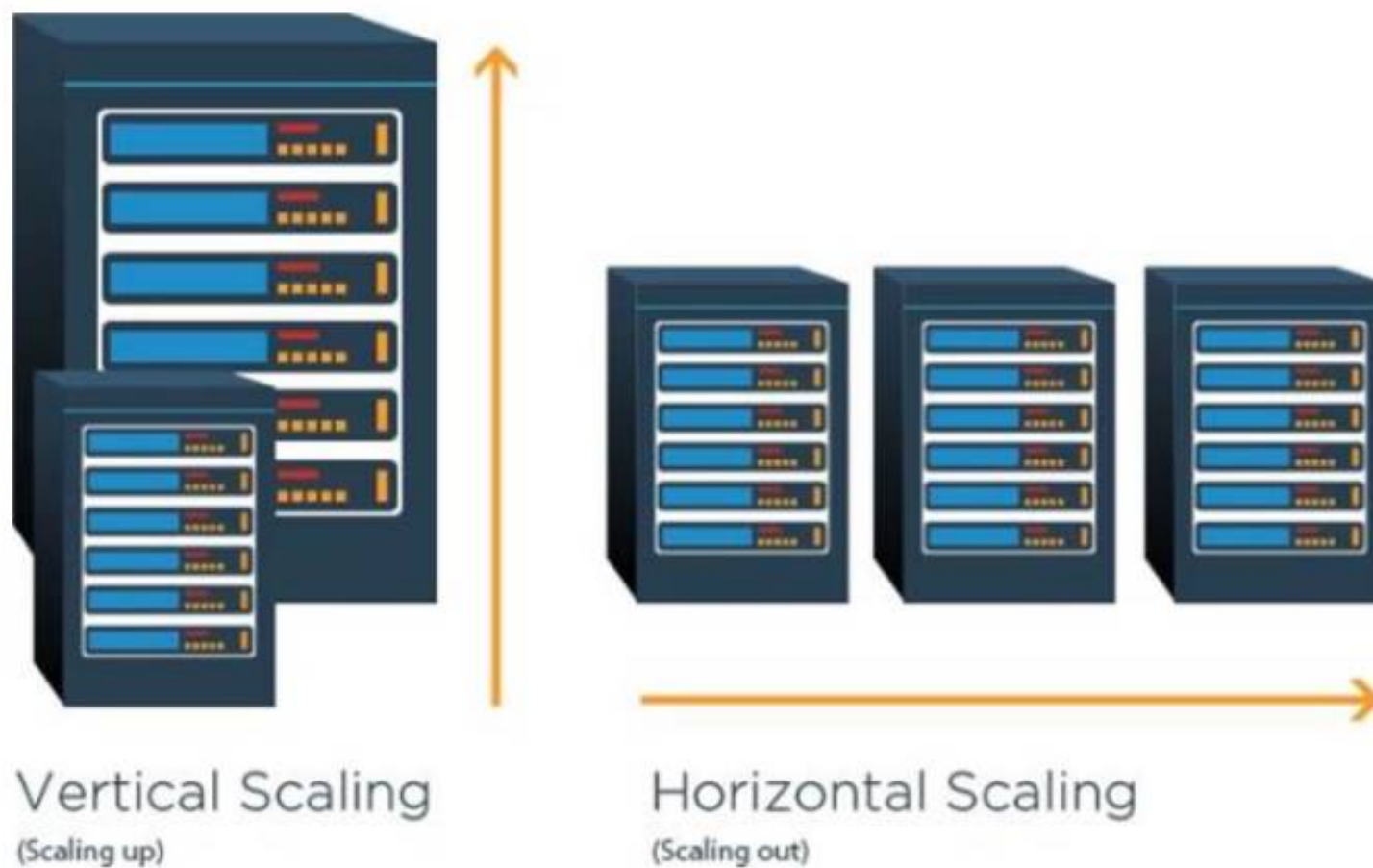
An application that is nearing its usage limit. To increase the amount of users it can handle, you allo-cate additional memory resources to each instance of the application. What type of scaling is this?

- A. Horizontal Scaling
- B. Cluster Autoscaling
- C. Recursive Scaling
- D. Vertical Scaling

**Answer:** D

#### Explanation:

Graphical user interface, diagram Description automatically generated



#### NEW QUESTION 63

What makes cloud native technology so important?

- A. It makes data centric
- B. It strengthens team
- C. It removes roadblocks to innovation
- D. It helps gather software requirements
- E. It makes operational centric

**Answer:** C

#### Explanation:

<https://github.com/cncf/foundation/blob/main/charter.md>

Graphical user interface, text, application Description automatically generated



Cloud native technologies empower organizations to build and run scalable applications in modern, dynamic environments such as public, private, and hybrid clouds. Containers, service meshes, microservices, immutable infrastructure, and declarative APIs exemplify this approach.

These techniques enable loosely coupled systems that are resilient, manageable, and observable. Combined with robust automation, they allow engineers to make high-impact changes frequently and predictably with minimal toil.

#### NEW QUESTION 66

Which of the following is an example of vertical scaling?

- A. Using cluster autoscaler
- B. Adding more resources (memory and/or cpu) to a kubernetes node
- C. Adding more nodes to kubernetes cluster
- D. Adding more replica pods to a deployment

**Answer:** B

#### Explanation:

<https://kubernetes.io/docs/tasks/run-application/horizontal-pod-autoscale/> Text Description automatically generated

Horizontal scaling means that the response to increased load is to deploy more Pods. This is different from *vertical* scaling, which for Kubernetes would mean assigning more resources (for example: memory or CPU) to the Pods that are already running for the workload.

#### NEW QUESTION 70

Which is not a service type in Kubernetes?

- A. ClusterIP
- B. NodePort
- C. Ingress
- D. LoadBalancer
- E. ExternalName

**Answer:** C

#### Explanation:

<https://kubernetes.io/docs/tutorials/kubernetes-basics/expose/expose-intro/>

without a Service. Services allow your applications to receive traffic. Services can be exposed in different ways by specifying a type in the ServiceSpec:

- *ClusterIP* (default) - Exposes the Service on an internal IP in the cluster. This type makes the Service only reachable from within the cluster.
- *NodePort* - Exposes the Service on the same port of each selected Node in the cluster using NAT. Makes a Service accessible from outside the cluster using `<NodeIP>:<NodePort>` . Superset of ClusterIP.
- *LoadBalancer* - Creates an external load balancer in the current cloud (if supported) and assigns a fixed, external IP to the Service. Superset of NodePort.
- *ExternalName* - Maps the Service to the contents of the `externalName` field (e.g. `foo.bar.example.com` ), by returning a CNAME record with its value. No proxying of any kind is set up. This type requires v1.7 or higher of `kube-dns` , or CoreDNS version 0.0.8 or higher.

More information about the different types of Services can be found in the [Using Source IP](#) tutorial. Also see [Connecting Applications with Services](#).

Text Description automatically generated

#### NEW QUESTION 74

What does the 'kops' acronym means?

- A. Kubernetes Open Platform Specification
- B. Kubernetes Operations
- C. Kubernetes Operators
- D. Kubernetes Operation Policy Specification

**Answer:** B

#### Explanation:

<https://github.com/kubernetes/kops>

Graphical user interface, text, application, email Description automatically generated

## kOps - Kubernetes Operations

go report A+ reference

The easiest way to get a production grade Kubernetes cluster up and running.

### What is kOps?

We like to think of it as `kubect1` for clusters.

`kops` will not only help you create, destroy, upgrade and maintain production-grade, highly available, Kubernetes cluster, but it will also provision the necessary cloud infrastructure.

AWS (Amazon Web Services) and GCE (Google Cloud Platform) are currently officially supported, with DigitalOcean, Hetzner and OpenStack in beta support, and Azure in alpha.

#### NEW QUESTION 75

Have a pod 'hello' and a container in that pod 'green'. Which of the following commands would get the logs for that container?

- A. alias k='kubectl'k logs -p hello -c green
- B. alias k='kubectl'k logs hello -c green



- C. alias k='kubectl'k get logs -p hello -c green
- D. alias k='kubectl'k logs -p hello green

**Answer:** B

**Explanation:**

<https://kubernetes.io/docs/reference/generated/kubectl/kubectl-commands#logs> Graphical user interface, text, application, email Description automatically generated

logs

Print the logs for a container in a pod or specified resource. If the pod has only one container, the container name is optional.

Usage

\$ kubectl logs [-f] [-p] (POD | TYPE/NAME) [-c CONTAINER]

Flags

Name	Shorthand	Default	Usage
all-containers		false	Get all containers' logs in the pod(s).
container	c		Print the logs of this container
follow	f	false	Specify if the logs should be streamed.

Return snapshot logs from pod nginx with only one container

kubectl logs nginx

Return snapshot logs from pod nginx with multi containers

kubectl logs nginx --all-containers=true

Return snapshot logs from all containers in pods defined by label app=nginx

kubectl logs -l app=nginx --all-containers=true

Return snapshot of previous terminated ruby container logs from pod web-1

kubectl logs -p -c ruby web-1

Begin streaming the logs of the ruby container in pod web-1

kubectl logs -f -c ruby web-1

**NEW QUESTION 80**

Open Container Initiative set container standards for

- A. Code, Build, Distribute, Deploy containers
- B. Run, build, and image
- C. Code, Build, Distribute containers
- D. Run, Build, Distribute containers

**Answer:** D

**NEW QUESTION 82**

What command to view the kube config?

- A. kubectl view config
- B. kubectl config view
- C. kubectl get kubeconfig

**Answer:** B

**Explanation:**

<https://kubernetes.io/docs/reference/generated/kubectl/kubectl-commands#-em-view-em-> Graphical user interface, text, application Description automatically generated

view

Display merged kubeconfig settings or a specified kubeconfig file.

You can use --output jsonpath={...} to extract specific values using a jsonpath expression.

Usage

\$ kubectl config view

...

Show merged kubeconfig settings

kubectl config view

Show merged kubeconfig settings and raw certificate data

kubectl config view --raw

Get the password for the e2e user

kubectl config view -o jsonpath='{.users[?(@.name == "e2e")].user.password}'

**NEW QUESTION 87**

What is autoscaling?

- A. Automatically measuring resource usage
- B. Automatically assigning workloads to nodes in a cluster
- C. Automatically repairing broken application instances
- D. Automatically adding or removing compute resources as needed

**Answer:** D

**Explanation:**

<https://kubernetes.io/blog/2016/07/autoscaling-in-kubernetes/>

Autoscaling means automatically scaling up or down in response to real-time usage data.

#### NEW QUESTION 90

Which is NOT a use case for the Kubernetes dashboard?

- A. Troubleshooting any issues with applications
- B. Managing running applications
- C. Installing new Kubernetes cluster
- D. Managing the entire Kubernetes cluster

**Answer:** C

#### NEW QUESTION 92

What are default kubernetes namespaces?

- A. default, kube-public, kube-system, kube-node-lease
- B. kube-default, kube-public, kube-system, kube-node-lease
- C. default, kube-public, kube-systems, kube-node-lease
- D. default, kube-public, kube-system, kube-node-leases

**Answer:** A

#### Explanation:

<https://kubernetes.io/docs/concepts/overview/working-with-objects/namespaces/>

Graphical user interface, text Description automatically generated with medium confidence

You can list the current namespaces in a cluster using:

```
kubectl get namespace
```

NAME	STATUS	AGE
default	Active	1d
kube-node-lease	Active	1d
kube-public	Active	1d
kube-system	Active	1d

Kubernetes starts with four initial namespaces:

- `default` The default namespace for objects with no other namespace
- `kube-system` The namespace for objects created by the Kubernetes system
- `kube-public` This namespace is created automatically and is readable by all users (including those not authenticated). This namespace is mostly reserved for cluster usage, in case that some resources should be visible and readable publicly throughout the whole cluster. The public aspect of this namespace is only a convention, not a requirement.
- `kube-node-lease` This namespace holds [Lease](#) objects associated with each node. Node leases allow the kubelet to send [heartbeats](#) so that the control plane can detect node failure.

#### NEW QUESTION 97

What cloud-native construct does a kubernetes pod wrap?

- A. Container
- B. Virtual Machine (VM)
- C. side car process
- D. Docker image

**Answer:** A

#### Explanation:

Kubernetes is an orchestrator of containerized apps. However, containers must be wrapped in pods before they can be deployed on kubernetes.

#### NEW QUESTION 99

Which control plane component is responsible for scheduling pods?

- A. kube-proxy



- B. kube scheduler
- C. kubelet
- D. kube api-server

**Answer:** B

**Explanation:**

<https://kubernetes.io/docs/concepts/overview/components/>

Graphical user interface, text, application Description automatically generated

## kube-scheduler

Control plane component that watches for newly created Pods with no assigned node, and selects a node for them to run on.

Factors taken into account for scheduling decisions include: individual and collective resource requirements, hardware/software/policy constraints, affinity and anti-affinity specifications, data locality, inter-workload interference, and deadlines.

**NEW QUESTION 102**

Notary and the update framework leading security projects in CNCF

- A. TRUE
- B. FALSE

**Answer:** A

**Explanation:**

<https://github.com/cncf/landscape#trail-map>

A picture containing timeline Description automatically generated



## CLOUD NATIVE TRAIL MAP

The Cloud Native Landscape (cncl.io) has a large number of options. This Cloud Native Trail Map is a recommended process for leveraging open source, cloud native technologies. At each step, you can choose a vendor-supported offering or do it yourself, and everything after step #3 is optional based on your circumstances.

### HELP ALONG THE WAY

#### A. Training and Certification

Consider training offerings from CNCF and then take the exam to become a Certified Kubernetes Administrator or a Certified Kubernetes Application Developer [cncf.io/training](https://cncf.io/training)

#### B. Consulting Help

If you want assistance with Kubernetes and the surrounding ecosystem, consider leveraging a Kubernetes Certified Service Provider: [cncf.io/csp](https://cncf.io/csp)

#### C. Join CNCF's End User Community

For companies that don't offer cloud native services externally: [cncf.io/enduser](https://cncf.io/enduser)

### WHAT IS CLOUD NATIVE?

Cloud native technologies empower organizations to build and run scalable applications in modern, dynamic environments such as public, private, and hybrid clouds. Containers, service meshes, microservices, immutable infrastructure, and declarative APIs exemplify this approach.

These techniques enable loosely coupled systems that are resilient, manageable, and observable. Combined with robust automation, they allow engineers to make high-impact changes frequently and predictably with minimal toil.

The Cloud Native Computing Foundation seeks to drive adoption of this paradigm by fostering and sustaining an ecosystem of open source, vendor-neutral projects. We democratize state-of-the-art patterns to make these innovations accessible for everyone.

[cncl.io](https://cncl.io)

v20200501



### NEW QUESTION 104

What is horizontal scaling?

- A. Creating a Deployment
- B. Adding resources to existing apps and servers
- C. Moving workloads from one server to another
- D. Adding additional replicas of apps and servers

**Answer: D**

### Explanation:

<https://kubernetes.io/docs/tasks/run-application/horizontal-pod-autoscale/> Text, letter Description automatically generated



In Kubernetes, a *HorizontalPodAutoscaler* automatically updates a workload resource (such as a Deployment or StatefulSet), with the aim of automatically scaling the workload to match demand.

Horizontal scaling means that the response to increased load is to deploy more Pods. This is different from *vertical* scaling, which for Kubernetes would mean assigning more resources (for example: memory or CPU) to the Pods that are already running for the workload.

If the load decreases, and the number of Pods is above the configured minimum, the HorizontalPodAutoscaler instructs the workload resource (the Deployment, StatefulSet, or other similar resource) to scale back down.

Horizontal pod autoscaling does not apply to objects that can't be scaled (for example: a DaemonSet.)

The HorizontalPodAutoscaler is implemented as a Kubernetes API resource and a controller. The resource determines the behavior of the controller. The horizontal pod autoscaling controller, running within the Kubernetes control plane, periodically adjusts the desired scale of its target (for example, a Deployment) to match observed metrics such as average CPU utilization, average memory utilization, or any other custom metric you specify.

#### NEW QUESTION 108

Which of the following best describes the way K8S Role-based access control (RBAC) works?

- A. K8S does not do RBAC or Cluster role
- B. RBAC lists which operations are denied to users
- C. States which users can perform which actions against the resources.

**Answer:** C

#### Explanation:

<https://kubernetes.io/docs/reference/access-authn-authz/rbac/> Text Description automatically generated

When the kube-apiserver is run with a log level of 5 or higher for the RBAC component ( `--vmodule=rbac*=5` or `--v=5` ), you can see RBAC denials in the API server log (prefixed with `RBAC` ). You can use that information to determine which roles need to be granted to which users, groups, or service accounts.

Once you have [granted roles to service accounts](#) and workloads are running with no RBAC denial messages in the server logs, you can remove the ABAC authorizer.

#### NEW QUESTION 111

What are container runtimes with Kubernetes?

- A. CRI-O
- B. lxd
- C. containerd
- D. Dockershim

**Answer:** AC

#### Explanation:

<https://kubernetes.io/docs/setup/production-environment/container-runtimes/> Graphical user interface, text, application, email Description automatically generated



# Container Runtimes

**Note:** Dockershim has been removed from the Kubernetes project as of release 1.24. Read the [Dockershim Removal FAQ](#) for further details.

You need to install a container runtime into each node in the cluster so that Pods can run there. This page outlines what is involved and describes related tasks for setting up nodes.

Kubernetes 1.25 requires that you use a runtime that conforms with the Container Runtime Interface (CRI).

See [CRI version support](#) for more information.

This page provides an outline of how to use several common container runtimes with Kubernetes.

- [containerd](#)
- [CRI-O](#)
- [Docker Engine](#)
- [Mirantis Container Runtime](#)

**Note:**

Kubernetes releases before v1.24 included a direct integration with Docker Engine, using a component named *dockershim*. That special direct integration is no longer part of Kubernetes (this removal was [announced](#) as part of the v1.20 release). You can read [Check whether Dockershim removal affects you](#) to understand how this removal might affect you. To learn about migrating from using dockershim, see [Migrating from dockershim](#).

If you are running a version of Kubernetes other than v1.25, check the documentation for that version.

## NEW QUESTION 114

Which of the following best describes the way kubernetes Role-based access control (RBAC) works?

- A. Kubernetes does not do RBAC
- B. Kubernetes RBAC states which users can perform which actions against which re-source
- C. Kubernetes RBAC lists which operations on which resources are denied to users
- D. Kubernetes RBAC is responsible for authenticating subjects such as users and groups

**Answer:** B

**Explanation:**

<https://kubernetes.io/docs/reference/access-authn-authz/rbac/>

Graphical user interface, text, application, email Description automatically generated

## Using RBAC Authorization

Role-based access control (RBAC) is a method of regulating access to computer or network resources based on the roles of individual users within your organization.

RBAC authorization uses the `rbac.authorization.k8s.io` API group to drive authorization decisions, allowing you to dynamically configure policies through the Kubernetes API.

To enable RBAC, start the API server with the `--authorization-mode` flag set to a comma-separated list that includes `RBAC` ; for example:

```
kube-apiserver --authorization-mode=Example,RBAC --other-options --more-options
```

## NEW QUESTION 117

Various Container Orchestrator Systems (COS)?

- A. Apache Mesos
- B. None of the options
- C. Docker Swarm
- D. Kubernetes

**Answer:** ACD

## NEW QUESTION 121

What is the functionality of the daemon set?

- A. To run a copy of the pod in all the nodes of the cluster
- B. To initialize the pod before starting the main pod
- C. To run a copy of the pod in a single node of the cluster

**Answer:** A

**Explanation:**

<https://kubernetes.io/docs/concepts/workloads/controllers/daemonset/>

Graphical user interface, text, application Description automatically generated with medium confidence

# DaemonSet

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

Some typical uses of a DaemonSet are:

- running a cluster storage daemon on every node
- running a logs collection daemon on every node
- running a node monitoring daemon on every node

## NEW QUESTION 122

What is the command used to login to the pod?

- A. kubectl login
- B. kubectl list
- C. kubectl exec
- D. kubectl get

**Answer:** C

**Explanation:**

<https://kubernetes.io/docs/reference/generated/kubectl/kubectl-commands#exec>

List contents of /usr from the first container of pod mypod and sort by modification time # If the command you want to execute in the pod has any flags in common (e.g. -i), # you must use two dashes (--) to separate your command's flags/arguments # Also note, do not surround your command and its flags/arguments with quotes # unless that is how you would execute it normally (i.e., do ls -t /usr, not "ls -t /usr")

```
kubectl exec mypod -i -t -- ls -t /usr
```

Text Description automatically generated

## NEW QUESTION 123

How to get the logs of the previously terminated nginx container from the web pod?

- A. kubectl logs -p -c nginx web
- B. kubectl logs nginx
- C. kubectl logs -p -c web nginx
- D. kubectl logs -f -c nginx web

**Answer:** A

**Explanation:**

<https://kubernetes.io/docs/reference/generated/kubectl/kubectl-commands#logs> Text Description automatically generated with medium confidence

Return snapshot of previous terminated ruby container logs from pod web-1

```
kubectl logs -p -c ruby web-1
```



#### NEW QUESTION 127

Which kubernetes object do deployments use behind the scenes when they need to scale pods?

- A. POD
- B. Deployment
- C. Horizontal pod autoscaler
- D. Api Scheduler
- E. Replicasets

**Answer:** E

#### Explanation:

<https://kubernetes.io/docs/concepts/workloads/controllers/replicaset/>

Graphical user interface, text, application, email Description automatically generated

## ReplicaSet

A ReplicaSet's purpose is to maintain a stable set of replica Pods running at any given time. As such, it is often used to guarantee the availability of a specified number of identical Pods.

#### NEW QUESTION 129

'kubectl delete -n my-ns po,svc --all' will delete pods and services including uninitialized ones in the namespace 'my-ns'

- A. FALSE
- B. TRUE

**Answer:** B

#### Explanation:

<https://kubernetes.io/docs/reference/generated/kubect/kubectl-commands#delete> Graphical user interface, text, application, email Description automatically generated

IMPORTANT: Force deleting pods does not wait for confirmation that the pod's processes have been terminated, which can leave those processes running until the node detects the deletion and completes graceful deletion. If your processes use shared storage or talk to a remote API and depend on the name of the pod to identify themselves, force deleting those pods may result in multiple processes running on different machines using the same identification which may lead to data corruption or inconsistency. Only force delete pods when you are sure the pod is terminated, or if your application can tolerate multiple copies of the same pod running at once. Also, if you force delete pods, the scheduler may place new pods on those nodes before the node has released those resources and causing those pods to be evicted immediately.

Note that the delete command does NOT do resource version checks, so if someone submits an update to a resource right when you submit a delete, their update will be lost along with the rest of the resource.

After a CustomResourceDefinition is deleted, invalidation of discovery cache may take up to 10 minutes. If you don't want to wait, you might want to run "kubectl api-resources" to refresh the discovery cache.

### Usage

```
$ kubectl delete [{-f FILENAME} | {-k DIRECTORY} | TYPE [(NAME | -l label | --all)]]
```

Delete a pod based on the type and name in the JSON passed into stdin
cat pod.json   kubectl delete -f -
Delete pods and services with same names "baz" and "foo"
kubectl delete pod,service baz foo
Delete pods and services with label name=myLabel
kubectl delete pods,services -l name=myLabel
Delete a pod with minimal delay
kubectl delete pod foo --now
Force delete a pod on a dead node
kubectl delete pod foo --force
Delete all pods
kubectl delete pods --all

#### NEW QUESTION 130

In Kubernetes, what is considered the primary cluster data source?

- A. etcd (pronounce: esty-d)
- B. api server
- C. kubelet
- D. scheduler

**Answer:** A

#### Explanation:

<https://kubernetes.io/docs/concepts/overview/components/#etcd>

Graphical user interface, text, application, email Description automatically generated



## etcd

Consistent and highly-available key value store used as Kubernetes' backing store for all cluster data.

If your Kubernetes cluster uses etcd as its backing store, make sure you have a [back up](#) plan for those data.

You can find in-depth information about etcd in the official [documentation](#).

### NEW QUESTION 134

Which component of the kubernetes control-plane (master) are all requests to deploy and manage objects posted to?

- A. ETCD
- B. Controller Manager
- C. Kube-proxy
- D. API Server
- E. Kubelet

**Answer:** D

#### Explanation:

<https://kubernetes.io/docs/reference/command-line-tools-reference/kube-apiserver/> Graphical user interface, text, application Description automatically generated

## Synopsis

The Kubernetes API server validates and configures data for the api objects which include pods, services, replicationcontrollers, and others. The API Server services REST operations and provides the frontend to the cluster's shared state through which all other components interact.

```
kube-apiserver [flags]
```

### NEW QUESTION 138

Which command is used to expose Kubernetes service

- A. kubectl expose
- B. kubectl create
- C. kubectl run

**Answer:** A

#### Explanation:

<https://kubernetes.io/docs/reference/generated/kubectl/kubectl-commands#expose> Text Description automatically generated

Create a service for a replicated nginx, which serves on port 80 and connects to the containers on port 8000

```
kubectl expose rc nginx --port=80 --target-port=8000
```

### NEW QUESTION 140

.....

## Thank You for Trying Our Product

### We offer two products:

1st - We have Practice Tests Software with Actual Exam Questions

2nd - Questions and Answers in PDF Format

### KCNA Practice Exam Features:

- \* KCNA Questions and Answers Updated Frequently
- \* KCNA Practice Questions Verified by Expert Senior Certified Staff
- \* KCNA Most Realistic Questions that Guarantee you a Pass on Your First Try
- \* KCNA Practice Test Questions in Multiple Choice Formats and Updates for 1 Year

**100% Actual & Verified — Instant Download, Please Click**  
**[Order The KCNA Practice Test Here](#)**