

Lab 2

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KodeKloud

Task Hint Solution 56:55

1 2 3 4 5 6 7 8 9 10 11 12 13

How many **pods** exist on the system?

In the current(default) namespace.

2

1

0

3

Terminal 1

```
Welcome to the KodeKloud Hands-On lab

All rights reserved

controlplane ~ → kubectl get node
NAME          STATUS    ROLES          AGE   VERSION
controlplane  Ready     control-plane, 12m   v1.27.1+k3s1

controlplane ~ →
```

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Task Hint Solution 55:45

1 2 3 4 5 6 7 8 9 10 11 12 13

Create a new pod with the **nginx** image.

Complete Next

✓ Image name: nginx

Terminal 1

```
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controlplane ~ → kubectl get node
NAME          STATUS    ROLES          AGE   VERSION
controlplane  Ready     control-plane, 12m   v1.27.1+k3s1

controlplane ~ → kubectl run nginx --image=nginx
pod/nginx created

controlplane ~ →
```

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1 2 3 4 5 6 7 8 9 10 11 12 13

How many pods are created now?

Note: We have created a few more pods. So please check again.

3

5

✓

2

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```
controlplane ~ → kubectl get node
NAME      STATUS   ROLES    AGE   VERSION
controlplane  Ready    control-plane,master  12m   v1.27.1+k3s1

controlplane ~ → kubectl run nginx --image=nginx
pod/nginx created

controlplane ~ → kubectl get pods
NAME      READY   STATUS    RESTARTS   AGE
nginx     1/1     Running   0           50s
newpods-rtfg4  1/1     Running   0           32s
newpods-f4qt2  1/1     Running   0           32s
newpods-p7czd  1/1     Running   0           32s

controlplane ~ →
```

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1 2 3 4 5 6 7 8 9 10 11 12 13

What is the image used to create the new pods?

You must look at one of the new pods in detail to figure this out.

JENKINS

NGINX

✓

NEWPOD

```
Name:          newpods-rtfg4
Namespace:     default
Priority:       0
Service Account: default
Node:          controlplane/192.11.47.8
Start Time:    Wed, 06 Dec 2023 06:28:44 +0000
Labels:        tier=busybox
Annotations:   <none>
Status:        Running
IP:            10.42.0.12
IPs:           10.42.0.12
Controlled By: ReplicaSet/newpods
Containers:
  busybox:
    Container ID: containerd://9680d5ccf5a2d373304fc0db820e426e7ad2307fbd3fdeff78684eee103e2730
    Image:        busybox
    Image ID:     docker.io/library/busybox@sha256:1ceb872bcc68a8fcd34c97952658b58086affdc604c90c1dee2735bde5edc2f
    Port:        <none>
    Host Port:   <none>
    Command:     <none>
```

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Which nodes are these pods placed on?

You must look at all the pods in detail to figure this out.

MASTER

CONTROLPLANE ✓

NODE-1

MASTER & NODE-1

NODE-2

```
pods-p7czd to controlplane
Normal Pulling      3m22s kubelet      Pulling image "busybox"
Normal Pulled       3m22s kubelet      Successfully pulled image "busybox"
x" in 522.226139ms (522.232707ms including waiting)
Normal Created      3m22s kubelet      Created container busybox
Normal Started      3m21s kubelet      Started container busybox

controlplane ~ → kubectl get pods -o wide
NAME          READY   STATUS    RESTARTS   AGE   IP          NODE
nginx         1/1     Running   0          23m   10.42.0.9   controlplane
newpods-p7czd 1/1     Running   1 (6m14s ago) 22m   10.42.0.11  controlplane
newpods-f4qt2 1/1     Running   1 (6m14s ago) 22m   10.42.0.10  controlplane
newpods-rtfg4 1/1     Running   1 (6m14s ago) 22m   10.42.0.12  controlplane
```

controlplane ~ →

Feedback

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How many containers are part of the pod `webapp` ?

Note: We just created a new POD. Ignore the state of the POD for now.

2 ✓

1

3

4

```
NOMINATED NODE READINESS GATES
nginx         1/1     Running   0          23m   10.42.0.9   controlplane
newpods-p7czd 1/1     Running   1 (6m14s ago) 22m   10.42.0.11  controlplane
newpods-f4qt2 1/1     Running   1 (6m14s ago) 22m   10.42.0.10  controlplane
newpods-rtfg4 1/1     Running   1 (6m14s ago) 22m   10.42.0.12  controlplane
```

controlplane ~ → kubectl describe pod webapp

```
Name:
Namespace: default
Priority: 0
Service Account: default
Node: controlplane/192.11.47.8
Start Time: Wed, 06 Dec 2023 06:52:33 +0000
Labels:
Annotations:
Status: Pending
IP: 10.42.0.13
```

Feedback

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What images are used in the new **webapp** pod?

You must look at all the pods in detail to figure this out.

nginx

nginx & agentx ✓

busybox ✗

nginx & busybox ✗

agentx

```
controlplane ~ ➔ kubectl describe pod webapp
Name:          webapp
Namespace:     default
Priority:       0
Service Account: default
Node:          controlplane/192.11.47.8
Start Time:    Wed, 06 Dec 2023 06:52:33 +0000
Labels:        <none>
Annotations:   <none>
Status:        Pending
IP:            10.42.0.13
IPs:           IP: 10.42.0.13
Containers:
  nginx:
    Container ID:  containerd://2f5da5b190588e5a2f030fa27881a2fd25562d2fbf4615196f533fe0d79d215a
    Image:          nginx
    Image ID:       docker.io/library/nginx@sha256:10d1f5b58f74683ad34eb29287e07
```

Feedback

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What is the state of the container **agentx** in the pod **webapp** ?

Wait for it to finish the **ContainerCreating** state

Running

Error or Waiting ✓

Success

Ready

```
Started:      Wed, 06 Dec 2023 06:52:34 +0000
Ready:        True
Restart Count: 0
Environment:  <none>
Mounts:
  /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-txr68 (
ro)
agentx:
  Container ID:
  Image:        agentx
  Image ID:     <none>
  Port:         <none>
  Host Port:    <none>
  State:        Waiting
    Reason:     ImagePullBackOff
  Ready:        False
  Restart Count: 0
  Environment:  <none>
  Mounts:
    /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-txr68 (
ro)
```

Feedback

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Why do you think the container `agentx` in pod `webapp` is in error?

Try to figure it out from the events section of the pod.

The application inside this image is faulty

A Docker image with this name doesn't exist on Docker Hub

NGINX application isn't configured to communicate to this image

Faulty Kubernetes cluster

```
Normal    Pulling      5m45s    kubelet    Pulling image "n
nginx"
Normal    Pulled       5m45s    kubelet    Successfully pul
led image "nginx" in 219.468478ms (219.47537ms including waiting)
Normal    Created      5m45s    kubelet    Created containe
r nginx
Normal    Started      5m45s    kubelet    Started containe
r nginx
Warning   Failed       5m4s (x3 over 5m44s)    kubelet    Error: ErrImageF
ull
Warning   Failed       4m27s (x5 over 5m44s)    kubelet    Error: ImagePull
BackOff
Normal    Pulling      4m12s (x4 over 5m45s)    kubelet    Pulling image "a
gentx"
Warning   Failed       4m11s (x4 over 5m44s)    kubelet    Failed to pull i
mage "agentx": rpc error: code = Unknown desc = failed to pull and unpack image
"docker.io/library/agentx:latest": failed to resolve reference "docker.io/librar
y/agentx:latest": pull access denied, repository does not exist or may require a
uthorization: server message: insufficient_scope: authorization failed
Normal    BackOff      45s (x20 over 5m44s)    kubelet    Back-off pulling
image "agentx"

controlplane ~ →
```

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13

What does the `READY` column in the output of the `kubectl get pods` command indicate?

Running Pods/Total Pods

Total Containers in POD/Running Containers in POD

Running Containers in POD/Total Containers in POD

Total Pods/Running Pods

```
Warning   Failed       4m27s (x5 over 5m44s)    kubelet    Error: ImagePull
BackOff
Normal    Pulling      4m12s (x4 over 5m45s)    kubelet    Pulling image "a
gentx"
Warning   Failed       4m11s (x4 over 5m44s)    kubelet    Failed to pull i
mage "agentx": rpc error: code = Unknown desc = failed to pull and unpack image
"docker.io/library/agentx:latest": failed to resolve reference "docker.io/librar
y/agentx:latest": pull access denied, repository does not exist or may require a
uthorization: server message: insufficient_scope: authorization failed
Normal    BackOff      45s (x20 over 5m44s)    kubelet    Back-off pulling
image "agentx"

controlplane ~ → kubectl get pods
NAME      READY   STATUS    RESTARTS   AGE
nginx     1/1     Running   0          33m
newpods-p7czd 1/1     Running   1 (16m ago) 32m
newpods-f4qt2 1/1     Running   1 (16m ago) 32m
newpods-rtfg4 1/1     Running   1 (16m ago) 32m
webapp    1/2     ImagePullBackOff 0          9m7s

controlplane ~ →
```

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1 2 3 4 5 6 7 8 9 10 11 12 13

Delete the **webapp** Pod.

Once **deleted**, wait for the pod to fully terminate.

Complete

Next

✓ Name: webapp

```
gentx"
Warning Failed 4m11s (x4 over 5m44s) kubelet Failed to pull i
image "agentx": rpc error: code = Unknown desc = failed to pull and unpack image
"docker.io/library/agentx:latest": failed to resolve reference "docker.io/librar
y/agentx:latest": pull access denied, repository does not exist or may require a
uthorization: server message: insufficient_scope: authorization failed
Normal BackOff 45s (x20 over 5m44s) kubelet Back-off pulling
image "agentx"

controlplane ~ → kubectl get pods
NAME READY STATUS RESTARTS AGE
nginx 1/1 Running 0 33m
newpods-p7czd 1/1 Running 1 (16m ago) 32m
newpods-f4qt2 1/1 Running 1 (16m ago) 32m
newpods-rtfg4 1/1 Running 1 (16m ago) 32m
webapp 1/2 ImagePullBackOff 0 9m7s

controlplane ~ → kubectl delete pod webapp
pod "webapp" deleted

controlplane ~ →
```

32°C Smoke

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1 2 3 4 5 6 7 8 9 10 11 12 13

Create a new pod with the name **redis** and the image **redis123**.

Use a pod-definition YAML file. And yes the image name is wrong!

Complete

Next

✓ Name: redis

✓ Image name: redis123

```
"docker.io/library/agentx:latest": failed to resolve reference "docker.io/librar
y/agentx:latest": pull access denied, repository does not exist or may require a
uthorization: server message: insufficient_scope: authorization failed
Normal BackOff 45s (x20 over 5m44s) kubelet Back-off pulling
image "agentx"

controlplane ~ → kubectl get pods
NAME READY STATUS RESTARTS AGE
nginx 1/1 Running 0 33m
newpods-p7czd 1/1 Running 1 (16m ago) 32m
newpods-f4qt2 1/1 Running 1 (16m ago) 32m
newpods-rtfg4 1/1 Running 1 (16m ago) 32m
webapp 1/2 ImagePullBackOff 0 9m7s

controlplane ~ → kubectl delete pod webapp
pod "webapp" deleted

controlplane ~ → kubectl run redis --image=redis123
pod/redis created

controlplane ~ →
```

Today's high Near record

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1 2 3 4 5 6 7 8 9 10 11 12 13

Now change the image on this pod to `redis`.

Once done, the pod should be in a `running` state.

Complete

Next

✓ Name: redis

✓ Image name: redis

```
controlplane ~ → kubectl run redis --image=redis123
pod/redis created

controlplane ~ → kubectl edit pod redis
pod/redis edited

controlplane ~ → kubectl delete pod redis
pod "redis" deleted

controlplane ~ → kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
nginx         1/1     Running   0           43m
newpods-f4qt2 1/1     Running   2 (9m51s ago) 43m
newpods-rtfg4 1/1     Running   2 (9m51s ago) 43m
newpods-p7czd 1/1     Running   2 (9m51s ago) 43m

controlplane ~ → kubectl run redis --image redis
pod/redis created

controlplane ~ →
```

32°C
Smoke

Search

ENG
IN

12:42
06-12-2023