

Day 2

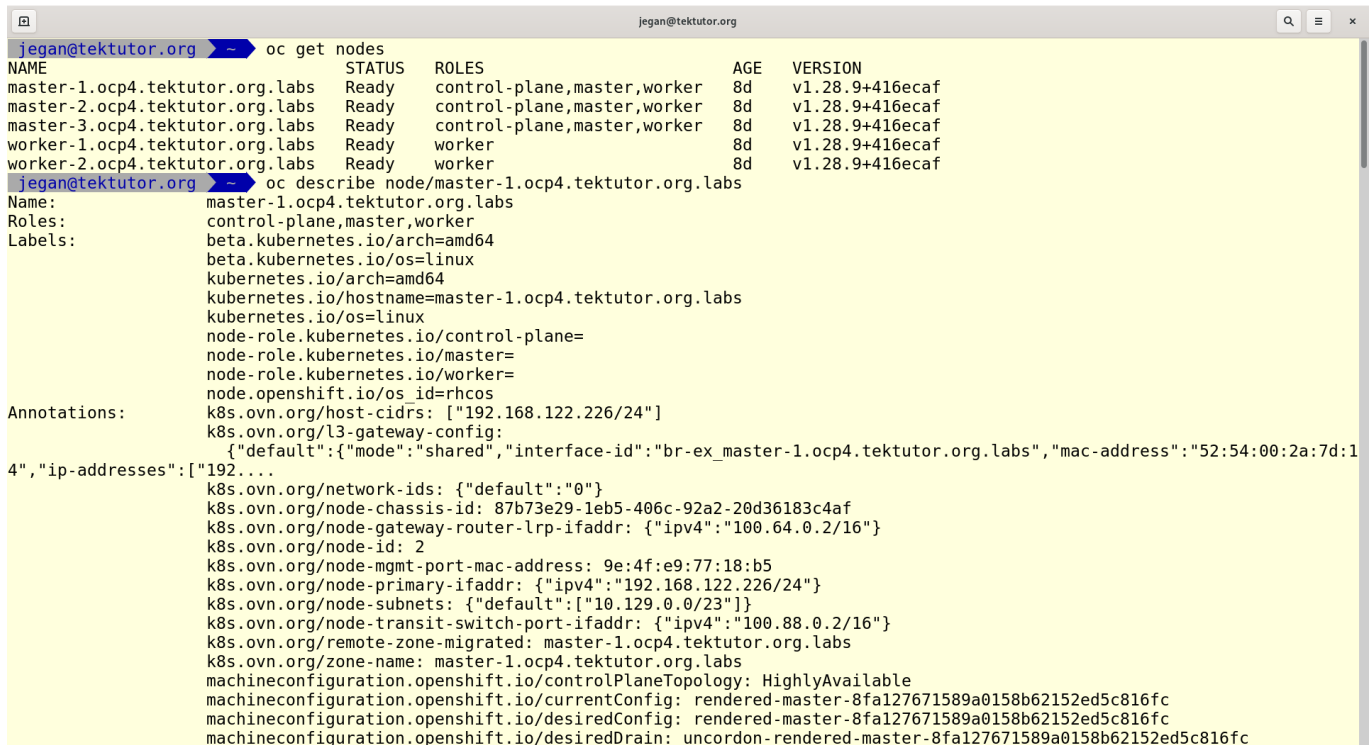
Info - SOLID Design Principles

S - Single Responsibility Principle (SRP)
O - Open Closed Principle (OCP)
L - Liskov Substitution Principle (LSP)
I - Interface Segregation Principle
D - Dependency Injection or Dependency Inversion or Inversion of Control (IOC)

Lab - Finding more details about a node

```
oc get nodes
oc describe node/master-1.ocp4.tektutor.org.labs
```

Expected output



```
jegan@tektutor.org ~$ oc get nodes
NAME                                STATUS    ROLES                                AGE    VERSION
master-1.ocp4.tektutor.org.labs     Ready    control-plane,master,worker         8d     v1.28.9+416ecaf
master-2.ocp4.tektutor.org.labs     Ready    control-plane,master,worker         8d     v1.28.9+416ecaf
master-3.ocp4.tektutor.org.labs     Ready    control-plane,master,worker         8d     v1.28.9+416ecaf
worker-1.ocp4.tektutor.org.labs     Ready    worker                               8d     v1.28.9+416ecaf
worker-2.ocp4.tektutor.org.labs     Ready    worker                               8d     v1.28.9+416ecaf

jegan@tektutor.org ~$ oc describe node/master-1.ocp4.tektutor.org.labs
Name:
  master-1.ocp4.tektutor.org.labs
Roles:
  control-plane,master,worker
Labels:
  beta.kubernetes.io/arch=amd64
  beta.kubernetes.io/os=linux
  kubernetes.io/arch=amd64
  kubernetes.io/hostname=master-1.ocp4.tektutor.org.labs
  kubernetes.io/os=linux
  node-role.kubernetes.io/control-plane=
  node-role.kubernetes.io/master=
  node-role.kubernetes.io/worker=
  node.openshift.io/os_id=rhcos
Annotations:
  k8s.ovn.org/host-cidrs: ["192.168.122.226/24"]
  k8s.ovn.org/l3-gateway-config:
    {"default":{"mode":"shared","interface-id":"br-ex_master-1.ocp4.tektutor.org.labs","mac-address":"52:54:00:2a:7d:14","ip-addresses":["192.168.122.226/24"]}
  k8s.ovn.org/network-ids: {"default":"0"}
  k8s.ovn.org/node-chassis-id: 87b73e29-1eb5-406c-92a2-20d36183c4af
  k8s.ovn.org/node-gateway-router-lrp-ifaddr: {"ipv4":"100.64.0.2/16"}
  k8s.ovn.org/node-id: 2
  k8s.ovn.org/node-mgmt-port-mac-address: 9e:4f:e9:77:18:b5
  k8s.ovn.org/node-primary-ifaddr: {"ipv4":"192.168.122.226/24"}
  k8s.ovn.org/node-subnets: {"default":["10.129.0.0/23"]}
  k8s.ovn.org/node-transit-switch-port-ifaddr: {"ipv4":"100.88.0.2/16"}
  k8s.ovn.org/remote-zone-migrated: master-1.ocp4.tektutor.org.labs
  k8s.ovn.org/zone-name: master-1.ocp4.tektutor.org.labs
  machineconfiguration.openshift.io/controlPlaneTopology: HighlyAvailable
  machineconfiguration.openshift.io/currentConfig: rendered-master-8fa127671589a0158b62152ed5c816fc
  machineconfiguration.openshift.io/desiredConfig: rendered-master-8fa127671589a0158b62152ed5c816fc
  machineconfiguration.openshift.io/desiredDrain: uncordon-rendered-master-8fa127671589a0158b62152ed5c816fc
```

Lab - Editing a node (don't modify anything)

```
oc get nodes
oc edit node/worker-1.ocp4.tektutor.org.labs
```

Expected output

```
jegan@tektutor.org ~$ oc get nodes
NAME                                STATUS    ROLES                                AGE    VERSION
master-1.ocp4.tektutor.org.labs     Ready    control-plane,master,worker         8d     v1.28.9+416ecaf
master-2.ocp4.tektutor.org.labs     Ready    control-plane,master,worker         8d     v1.28.9+416ecaf
master-3.ocp4.tektutor.org.labs     Ready    control-plane,master,worker         8d     v1.28.9+416ecaf
worker-1.ocp4.tektutor.org.labs     Ready    worker                               8d     v1.28.9+416ecaf
worker-2.ocp4.tektutor.org.labs     Ready    worker                               8d     v1.28.9+416ecaf

jegan@tektutor.org ~$ oc edit node/worker-1.ocp4.tektutor.org.labs
Edit cancelled, no changes made.

jegan@tektutor.org ~$
```

```
Please edit the object below. Lines beginning with a '#' will be ignored,
# and an empty file will abort the edit. If an error occurs while saving this file will be
# reopened with the relevant failures.
#
apiVersion: v1
kind: Node
metadata:
  annotations:
    k8s.ovn.org/host-cidrs: '["192.168.122.87/24"]'
    k8s.ovn.org/l3-gateway-config: '{"default":{"mode":"shared","interface-id":"br-ex_worker-1.ocp4.tektutor.org.labs","mac-address":"52:54:00:b2:31:0b","ip-addresses":["192.168.122.87/24"],"ip-address":"192.168.122.87/24","next-hops":["192.168.122.1"],"next-hop":"192.168.122.1","node-port-enable":"true","vlan-id":"0"}}'
    k8s.ovn.org/network-ids: '{"default":"0"}'
    k8s.ovn.org/node-chassis-id: b5adc74c-9651-433d-9172-7e391833264a
    k8s.ovn.org/node-gateway-router-lrp-ifaddr: '{"ipv4":"100.64.0.6/16"}'
    k8s.ovn.org/node-id: "6"
    k8s.ovn.org/node-mgmt-port-mac-address: d6:b1:9f:bc:1e:32
    k8s.ovn.org/node-primary-ifaddr: '{"ipv4":"192.168.122.87/24"}'
    k8s.ovn.org/node-subnets: '{"default":["10.128.2.0/23"]}'
    k8s.ovn.org/node-transit-switch-port-ifaddr: '{"ipv4":"100.88.0.6/16"}'
    k8s.ovn.org/remote-zone-migrated: worker-1.ocp4.tektutor.org.labs
    k8s.ovn.org/zone-name: worker-1.ocp4.tektutor.org.labs
    machineconfiguration.openshift.io/controlPlaneTopology: HighlyAvailable
    machineconfiguration.openshift.io/currentConfig: rendered-worker-0f43fe5d5ea6ee1434578ffee564f74b
    machineconfiguration.openshift.io/desiredConfig: rendered-worker-0f43fe5d5ea6ee1434578ffee564f74b
    machineconfiguration.openshift.io/desiredDrain: uncordon-rendered-worker-0f43fe5d5ea6ee1434578ffee564f74b
    machineconfiguration.openshift.io/lastAppliedDrain: uncordon-rendered-worker-0f43fe5d5ea6ee1434578ffee564f74b
    machineconfiguration.openshift.io/lastSyncedControllerConfigResourceVersion: "427286"
    machineconfiguration.openshift.io/reason: ""
    machineconfiguration.openshift.io/state: Done
    volumes.kubernetes.io/controller-managed-attach-detach: "true"
  creationTimestamp: "2024-06-03T02:12:25Z"
  labels:
    beta.kubernetes.io/arch: amd64
    beta.kubernetes.io/os: linux
    kubernetes.io/arch: amd64
"/tmp/oc-edit-3103677927.yaml" 254L, 14898B
1,1 Top
```

Lab - Using wide mode to find node IP and OS installed

```
oc get nodes -o wide
```

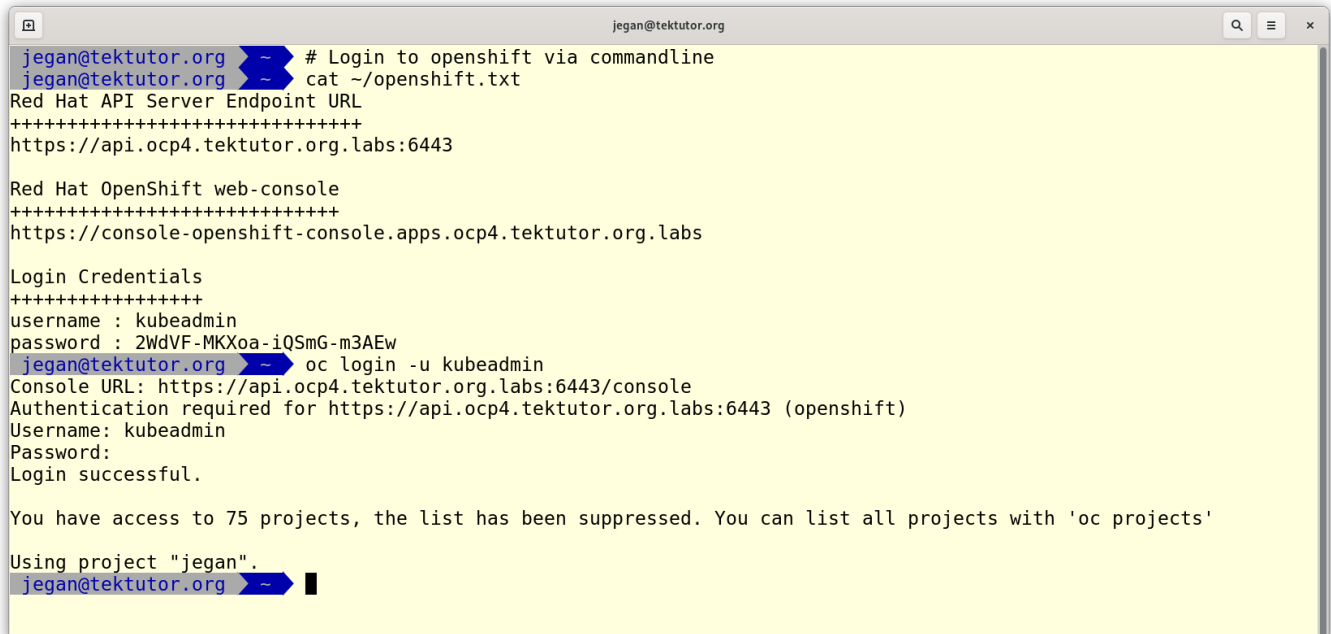
Expected output

```
jegan@tektutor.org ~$ oc get nodes -o wide
NAME                                STATUS    ROLES                                AGE    VERSION    INTERNAL-IP    E
TERNAL-IP    OS-IMAGE    KERNEL-VERSION    CONTAINER
-RUNTIME
master-1.ocp4.tektutor.org.labs     Ready    control-plane,master,worker         8d     v1.28.9+416ecaf    192.168.122.226 <
none>      Red Hat Enterprise Linux CoreOS 415.92.202405201956-0 (Plow)  5.14.0-284.67.1.el9_2.x86_64    cri-o://1
28.6-7.rhaos4.15.git70c2e96.el9
master-2.ocp4.tektutor.org.labs     Ready    control-plane,master,worker         8d     v1.28.9+416ecaf    192.168.122.198 <
none>      Red Hat Enterprise Linux CoreOS 415.92.202405201956-0 (Plow)  5.14.0-284.67.1.el9_2.x86_64    cri-o://1
28.6-7.rhaos4.15.git70c2e96.el9
master-3.ocp4.tektutor.org.labs     Ready    control-plane,master,worker         8d     v1.28.9+416ecaf    192.168.122.181 <
none>      Red Hat Enterprise Linux CoreOS 415.92.202405201956-0 (Plow)  5.14.0-284.67.1.el9_2.x86_64    cri-o://1
28.6-7.rhaos4.15.git70c2e96.el9
worker-1.ocp4.tektutor.org.labs     Ready    worker                               8d     v1.28.9+416ecaf    192.168.122.87  <
none>      Red Hat Enterprise Linux CoreOS 415.92.202405201956-0 (Plow)  5.14.0-284.67.1.el9_2.x86_64    cri-o://1
28.6-7.rhaos4.15.git70c2e96.el9
worker-2.ocp4.tektutor.org.labs     Ready    worker                               8d     v1.28.9+416ecaf    192.168.122.81  <
none>      Red Hat Enterprise Linux CoreOS 415.92.202405201956-0 (Plow)  5.14.0-284.67.1.el9_2.x86_64    cri-o://1
28.6-7.rhaos4.15.git70c2e96.el9
jegan@tektutor.org ~$
```

Lab - Login to openshift from command line

```
cat ~/openshift.txt
oc login -u kubeadmin
```

Expected output

A terminal window titled 'jegan@tektutor.org' showing the execution of commands to log into OpenShift. The user runs 'cat ~/openshift.txt' which displays the API endpoint URL, web-console URL, and login credentials. Then, the user runs 'oc login -u kubeadmin', which prompts for the console URL and authentication details, resulting in a successful login for the 'jegan' project.

```
jegan@tektutor.org # Login to openshift via commandline
jegan@tektutor.org cat ~/openshift.txt
Red Hat API Server Endpoint URL
+++++
https://api.ocp4.tektutor.org.labs:6443

Red Hat OpenShift web-console
+++++
https://console-openshift-console.apps.ocp4.tektutor.org.labs

Login Credentials
+++++
username : kubeadmin
password : 2WdVF-MKXoa-iQSmG-m3AEw
jegan@tektutor.org oc login -u kubeadmin
Console URL: https://api.ocp4.tektutor.org.labs:6443/console
Authentication required for https://api.ocp4.tektutor.org.labs:6443 (openshift)
Username: kubeadmin
Password:
Login successful.

You have access to 75 projects, the list has been suppressed. You can list all projects with 'oc projects'

Using project "jegan".
jegan@tektutor.org
```

Lab - OpenShift Webconsole login

```
cat ~/openshift.txt
```

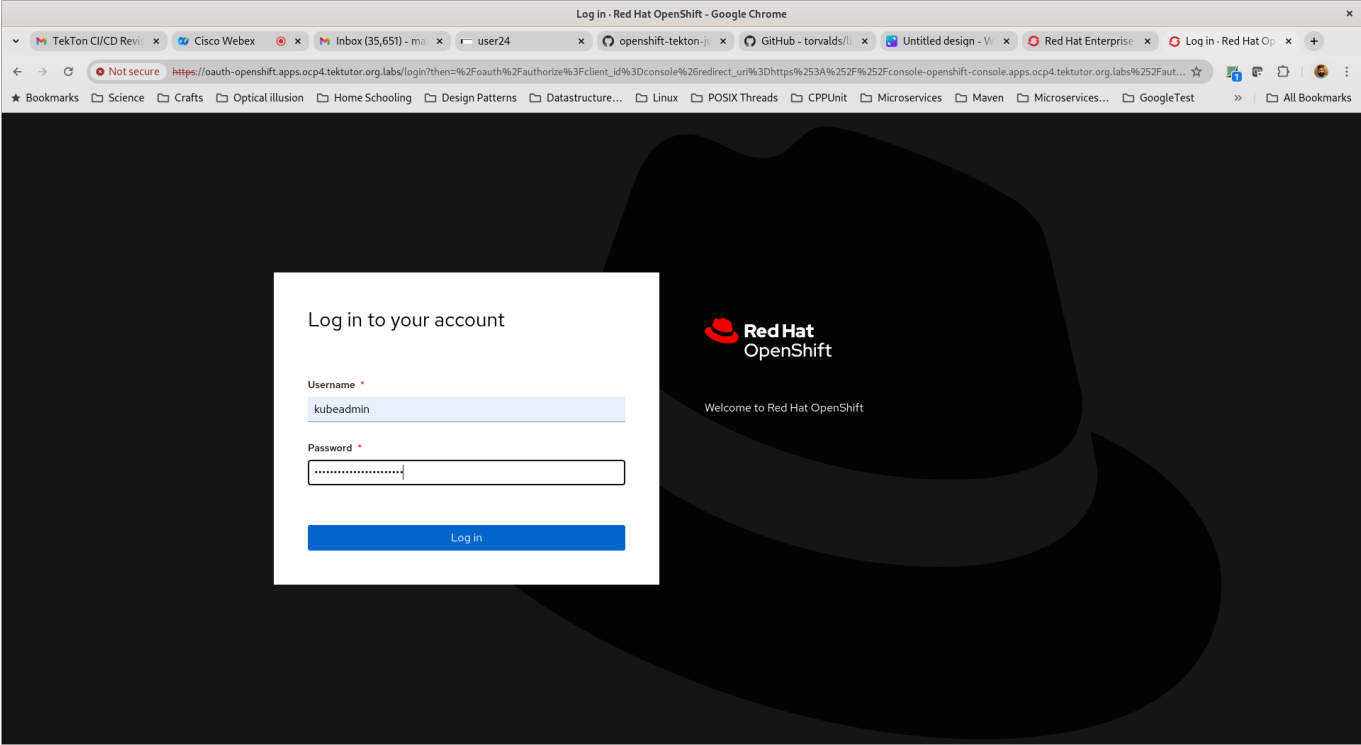
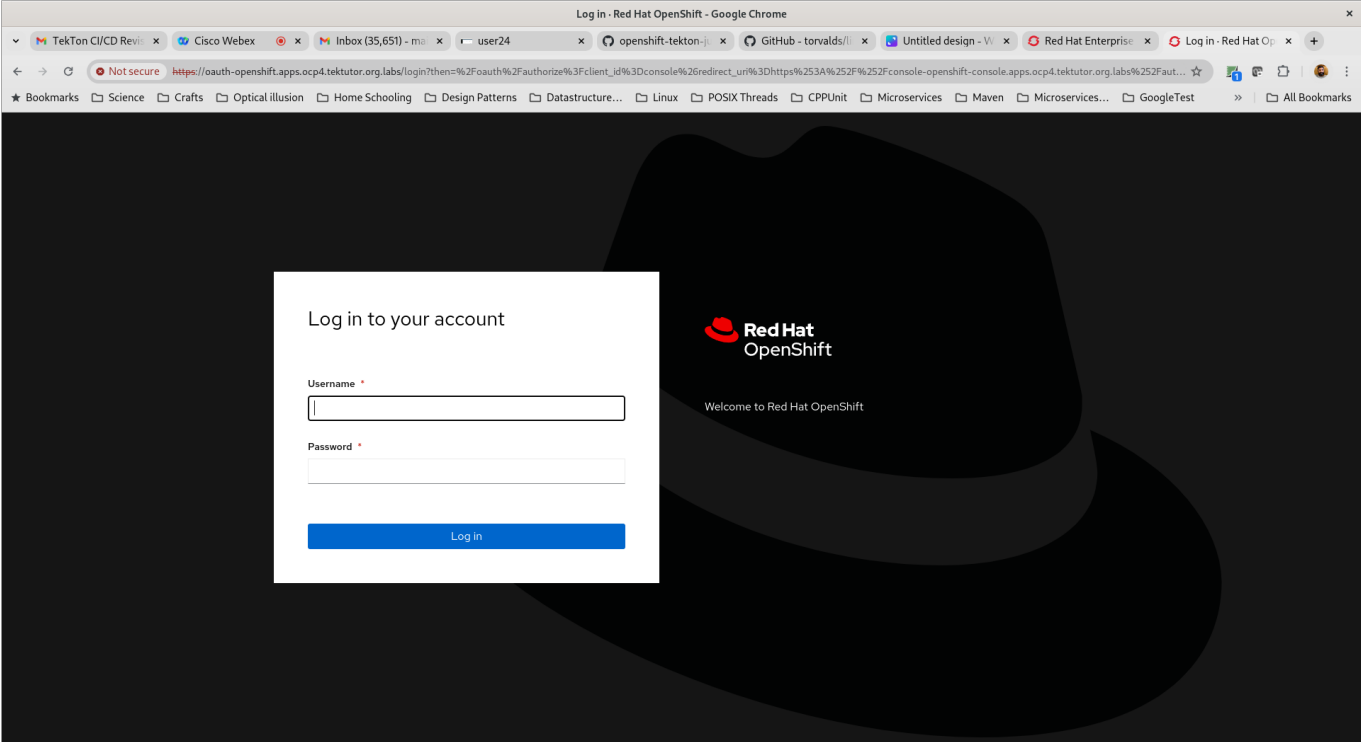
Open your webconsole link from Google Chrome web browser on the CentOS Lab Machine

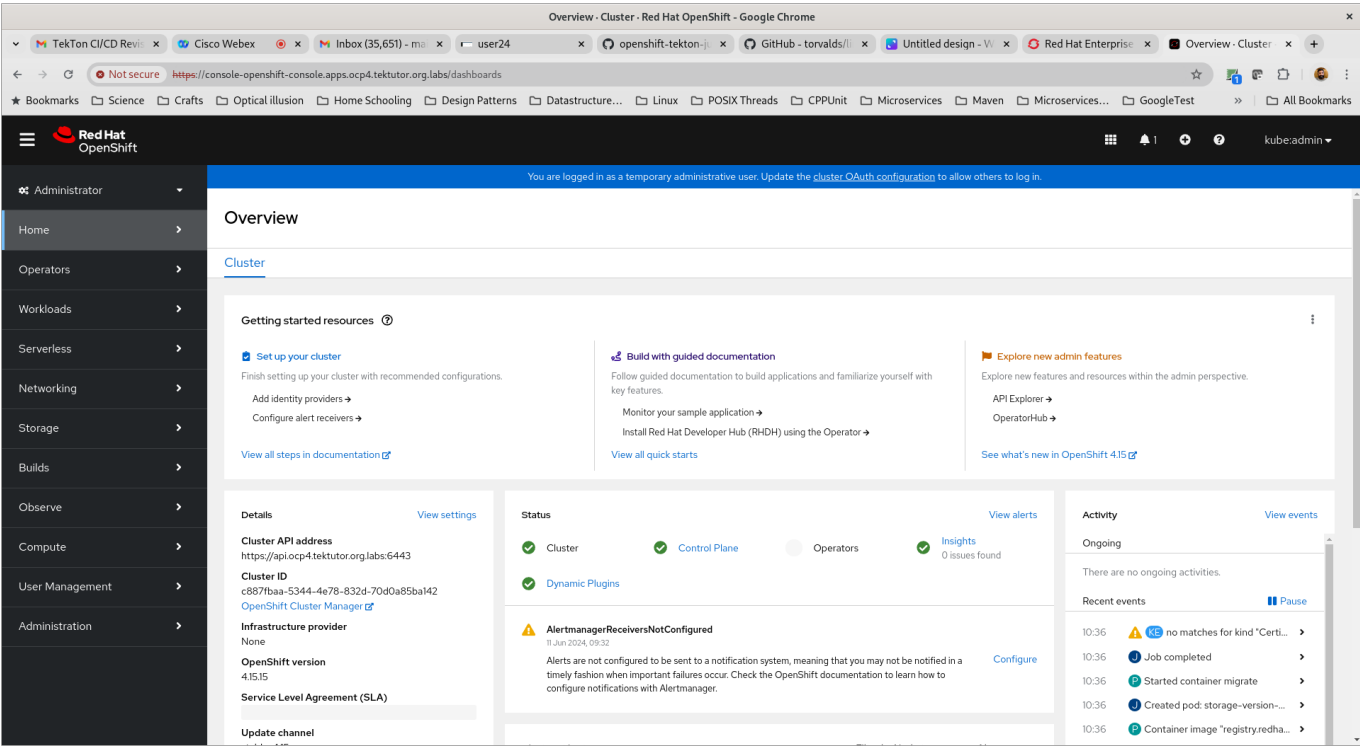
A terminal window titled 'jegan@tektutor.org' showing the execution of the 'cat ~/openshift.txt' command. The output displays the API endpoint URL, web-console URL, and login credentials.

```
jegan@tektutor.org cat ~/openshift.txt
Red Hat API Server Endpoint URL
+++++
https://api.ocp4.tektutor.org.labs:6443

Red Hat OpenShift web-console
+++++
https://console-openshift-console.apps.ocp4.tektutor.org.labs

Login Credentials
+++++
username : kubeadmin
password : 2WdVF-MKXoa-iQSmG-m3AEw
jegan@tektutor.org
```





Lab - Create a new project

Replace 'jegan' with your name

```
oc new-project jegan
```

Listing the projects

```
oc get projects
oc get project
oc get namespaces
oc get namespace
oc get ns
```

Expected output

```
jegan@tektutor.org ~$ oc new-project jegan
Already on project "jegan" on server "https://api.ocp4.tektutor.org.labs:6443".

You can add applications to this project with the 'new-app' command. For example, try:

    oc new-app rails-postgresql-example

to build a new example application in Ruby. Or use kubectl to deploy a simple Kubernetes application:

    kubectl create deployment hello-node --image=registry.k8s.io/e2e-test-images/agnhost:2.43 -- /agnhost serve-hostname

jegan@tektutor.org ~$ oc get projects
```

NAME	DISPLAY NAME	STATUS
default		Active
jegan		Active
knative-eventing		Active
knative-serving		Active
knative-serving-ingress		Active
kube-node-lease		Active
kube-public		Active
kube-system		Active
metallb-system		Active
openshift		Active
openshift-apiserver		Active
openshift-apiserver-operator		Active
openshift-authentication		Active
openshift-authentication-operator		Active
openshift-cloud-controller-manager		Active
openshift-cloud-controller-manager-operator		Active
openshift-ovirt-infra		Active
openshift-ovn-kubernetes		Active
openshift-route-controller-manager		Active
openshift-serverless		Active
openshift-service-ca		Active
openshift-service-ca-operator		Active
openshift-user-workload-monitoring		Active
openshift-vsphere-infra		Active

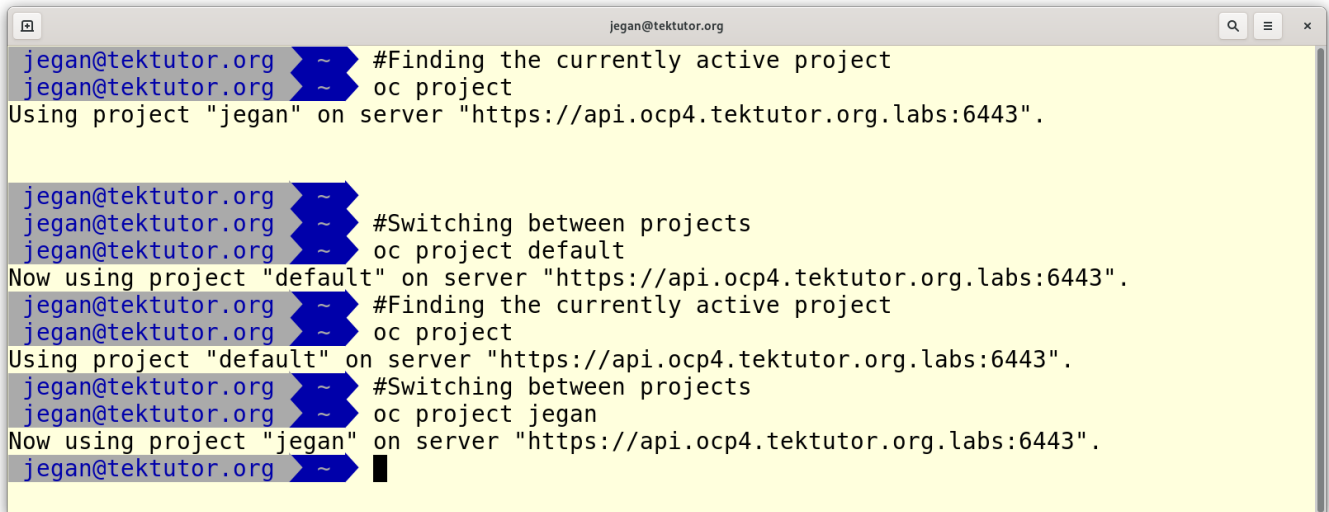
```
jegan@tektutor.org ~$ oc get namespaces
```

NAME	STATUS	AGE
default	Active	8d
jegan	Active	15s
knative-eventing	Active	3d20h
knative-serving	Active	3d20h
knative-serving-ingress	Active	3d20h
kube-node-lease	Active	8d
kube-public	Active	8d
kube-system	Active	8d
metallb-system	Active	6d22h
openshift	Active	8d
openshift-apiserver	Active	8d
openshift-apiserver-operator	Active	8d
openshift-authentication	Active	8d
openshift-authentication-operator	Active	8d
openshift-cloud-controller-manager	Active	8d
openshift-cloud-controller-manager-operator	Active	8d
openshift-cloud-credential-operator	Active	8d
openshift-cloud-network-config-controller	Active	8d
openshift-cloud-platform-infra	Active	8d
openshift-cluster-csi-drivers	Active	8d

Lab - Finding the currently project and switching between projects

```
oc project
oc project default
oc project
oc project jegan
```

Expected output



```
jegan@tektutor.org ~ #Finding the currently active project
jegan@tektutor.org ~ # oc project
Using project "jegan" on server "https://api.ocp4.tektutor.org.labs:6443".

jegan@tektutor.org ~ #Switching between projects
jegan@tektutor.org ~ # oc project default
Now using project "default" on server "https://api.ocp4.tektutor.org.labs:6443".
jegan@tektutor.org ~ #Finding the currently active project
jegan@tektutor.org ~ # oc project
Using project "default" on server "https://api.ocp4.tektutor.org.labs:6443".
jegan@tektutor.org ~ #Switching between projects
jegan@tektutor.org ~ # oc project jegan
Now using project "jegan" on server "https://api.ocp4.tektutor.org.labs:6443".
jegan@tektutor.org ~ #
```

Lab - Deploying your first application

nginx is a web server image that will be downloaded from Docker Hub Remote Registry by Openshift

```
oc create deployment nginx --image=nginx:latest
```

In the above command, nginx is the user-defined deployment name and nginx:latest is the docker image that will be downloaded from Docker Hub.

Listing the deployments

```
oc get deployments
oc get deployment
oc get deploy
```

Listing the replicaset

```
oc get replicaset
oc get replicaset
oc get rs
```

Listing the pods

```
oc get pods
oc get pod
oc get po
```

Expected output

```
jegan@tektutor.org ~$ oc create deployment nginx --image=nginx:latest
deployment.apps/nginx created
jegan@tektutor.org ~$ oc get deployments
NAME    READY   UP-TO-DATE   AVAILABLE   AGE
nginx   0/1     1            0           5s
jegan@tektutor.org ~$ oc get deployment
NAME    READY   UP-TO-DATE   AVAILABLE   AGE
nginx   0/1     1            0           9s
jegan@tektutor.org ~$ oc get deploy
NAME    READY   UP-TO-DATE   AVAILABLE   AGE
nginx   0/1     1            0           11s
jegan@tektutor.org ~$ oc get replicaset
NAME    DESIRED   CURRENT   READY   AGE
nginx-56fcf95486 1         1         0       65s
jegan@tektutor.org ~$ oc get replicaset
NAME    DESIRED   CURRENT   READY   AGE
nginx-56fcf95486 1         1         0       68s
jegan@tektutor.org ~$ oc get rs
NAME    DESIRED   CURRENT   READY   AGE
nginx-56fcf95486 1         1         0       71s
jegan@tektutor.org ~$ oc get pods
NAME                                READY   STATUS              RESTARTS   AGE
nginx-56fcf95486-dmzxk 0/1     CrashLoopBackOff    3 (17s ago) 78s
jegan@tektutor.org ~$ oc get pod
NAME                                READY   STATUS              RESTARTS   AGE
nginx-56fcf95486-dmzxk 0/1     CrashLoopBackOff    3 (21s ago) 82s
jegan@tektutor.org ~$ oc get po
NAME                                READY   STATUS              RESTARTS   AGE
nginx-56fcf95486-dmzxk 0/1     CrashLoopBackOff    3 (23s ago) 84s
jegan@tektutor.org ~$
```

Troubleshooting - checking the pod logs

```
oc get po
oc logs nginx-56fcf95486-dmzxk
```

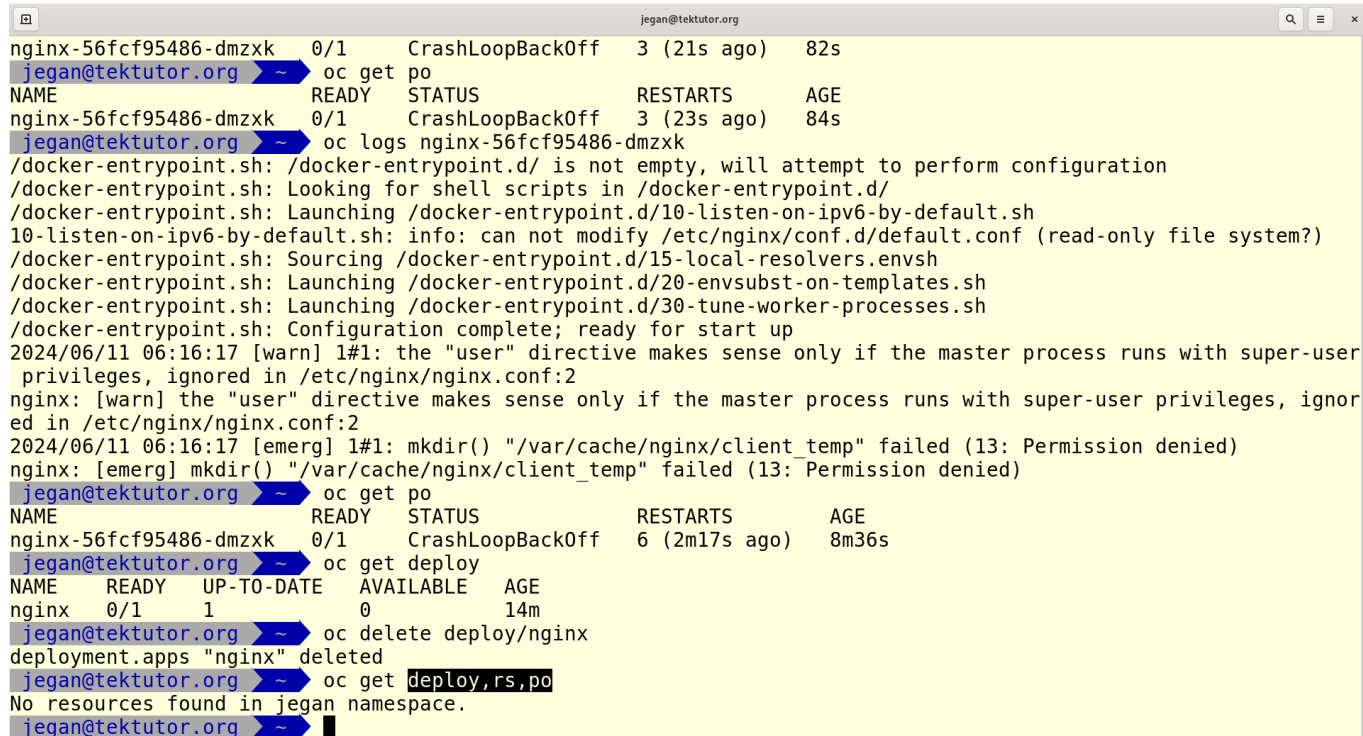
Expected output

```
jegan@tektutor.org ~$ oc get pods
NAME                                READY   STATUS              RESTARTS   AGE
nginx-56fcf95486-dmzxk 0/1     CrashLoopBackOff    0           71s
jegan@tektutor.org ~$ oc get pods
NAME                                READY   STATUS              RESTARTS   AGE
nginx-56fcf95486-dmzxk 0/1     CrashLoopBackOff    3 (17s ago) 78s
jegan@tektutor.org ~$ oc get pod
NAME                                READY   STATUS              RESTARTS   AGE
nginx-56fcf95486-dmzxk 0/1     CrashLoopBackOff    3 (21s ago) 82s
jegan@tektutor.org ~$ oc get po
NAME                                READY   STATUS              RESTARTS   AGE
nginx-56fcf95486-dmzxk 0/1     CrashLoopBackOff    3 (23s ago) 84s
jegan@tektutor.org ~$ oc logs nginx-56fcf95486-dmzxk
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: can not modify /etc/nginx/conf.d/default.conf (read-only file system?)
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2024/06/11 06:16:17 [warn] 1#1: the "user" directive makes sense only if the master process runs with super-user privileges, ignored in /etc/nginx/nginx.conf:2
nginx: [warn] the "user" directive makes sense only if the master process runs with super-user privileges, ignored in /etc/nginx/nginx.conf:2
2024/06/11 06:16:17 [emerg] 1#1: mkdir() "/var/cache/nginx/client_temp" failed (13: Permission denied)
nginx: [emerg] mkdir() "/var/cache/nginx/client_temp" failed (13: Permission denied)
jegan@tektutor.org ~$ oc get po
NAME                                READY   STATUS              RESTARTS   AGE
nginx-56fcf95486-dmzxk 0/1     CrashLoopBackOff    6 (2m17s ago) 8m36s
jegan@tektutor.org ~$
```

Lab - Deleting nginx deployment


```
oc get deploy
oc delete deploy/nginx
oc get deploy,rs,po
```

Expected output



```
jegan@tektutor.org
nginx-56fcf95486-dmzxk 0/1 CrashLoopBackOff 3 (21s ago) 82s
jegan@tektutor.org ~$ oc get po
NAME READY STATUS RESTARTS AGE
nginx-56fcf95486-dmzxk 0/1 CrashLoopBackOff 3 (23s ago) 84s
jegan@tektutor.org ~$ oc logs nginx-56fcf95486-dmzxk
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: can not modify /etc/nginx/conf.d/default.conf (read-only file system?)
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2024/06/11 06:16:17 [warn] 1#1: the "user" directive makes sense only if the master process runs with super-user
privileges, ignored in /etc/nginx/nginx.conf:2
nginx: [warn] the "user" directive makes sense only if the master process runs with super-user privileges, ignor
ed in /etc/nginx/nginx.conf:2
2024/06/11 06:16:17 [emerg] 1#1: mkdir() "/var/cache/nginx/client_temp" failed (13: Permission denied)
nginx: [emerg] mkdir() "/var/cache/nginx/client_temp" failed (13: Permission denied)
jegan@tektutor.org ~$ oc get po
NAME READY STATUS RESTARTS AGE
nginx-56fcf95486-dmzxk 0/1 CrashLoopBackOff 6 (2m17s ago) 8m36s
jegan@tektutor.org ~$ oc get deploy
NAME READY UP-TO-DATE AVAILABLE AGE
nginx 0/1 1 0 14m
jegan@tektutor.org ~$ oc delete deploy/nginx
deployment.apps "nginx" deleted
jegan@tektutor.org ~$ oc get deploy,rs,po
No resources found in jegan namespace.
jegan@tektutor.org ~$
```

Lab - Deploying nginx web server using bitnami rootless image

```
oc create deployment nginx --image=bitnami/nginx:1.18 --replicas=3
oc get deploy,rs,po
```

Expected output

```
jegan@tektutor.org ~$ oc create deployment nginx --image=bitnami/nginx:1.18 --replicas=3
deployment.apps/nginx created
jegan@tektutor.org ~$ oc get deploy,rs,po
NAME                                READY    UP-TO-DATE    AVAILABLE    AGE
deployment.apps/nginx              0/3      3              0            5s

NAME                                DESIRED    CURRENT    READY    AGE
replicaset.apps/nginx-566b5879cb    3          3          0        5s

NAME                                READY    STATUS              RESTARTS    AGE
pod/nginx-566b5879cb-rj2f9          0/1      ContainerCreating    0           5s
pod/nginx-566b5879cb-rn4mk          0/1      ContainerCreating    0           5s
pod/nginx-566b5879cb-sl4bd          0/1      ContainerCreating    0           5s
jegan@tektutor.org ~$ oc get po -w
NAME                                READY    STATUS              RESTARTS    AGE
nginx-566b5879cb-rj2f9              0/1      ContainerCreating    0           15s
nginx-566b5879cb-rn4mk              0/1      ContainerCreating    0           15s
nginx-566b5879cb-sl4bd              0/1      ContainerCreating    0           15s
nginx-566b5879cb-sl4bd              1/1      Running              0           17s
nginx-566b5879cb-rn4mk              1/1      Running              0           17s
nginx-566b5879cb-rj2f9              1/1      Running              0           18s
^C
jegan@tektutor.org ~$ oc get po
NAME                                READY    STATUS    RESTARTS    AGE
nginx-566b5879cb-rj2f9              1/1      Running   0           27s
nginx-566b5879cb-rn4mk              1/1      Running   0           27s
nginx-566b5879cb-sl4bd              1/1      Running   0           27s
jegan@tektutor.org ~$
```

Lab - Deep dive into deployment

```
oc get deploy
oc describe deploy/nginx

oc get rs
oc describe rs/nginx-566b5879cb

oc get po
oc describe po/nginx-566b5879cb-sl4bd
```

```
jegan@tektutor.org
nginx-566b5879cb-rn4mk 1/1 Running 0 27s
nginx-566b5879cb-sl4bd 1/1 Running 0 27s
jegan@tektutor.org ~$ oc get po -o wide
NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE READINESS GATES
nginx-566b5879cb-rj2f9 1/1 Running 0 2m18s 10.128.2.7 worker-1.ocp4.tektutor.org.labs <none> <none>
nginx-566b5879cb-rn4mk 1/1 Running 0 2m18s 10.129.0.65 master-1.ocp4.tektutor.org.labs <none> <none>
nginx-566b5879cb-sl4bd 1/1 Running 0 2m18s 10.131.0.40 worker-2.ocp4.tektutor.org.labs <none> <none>
jegan@tektutor.org ~$ oc describe deploy/nginx
Name: nginx
Namespace: jegan
CreationTimestamp: Tue, 11 Jun 2024 12:02:24 +0530
Labels: app=nginx
Annotations: deployment.kubernetes.io/revision: 1
Selector: app=nginx
Replicas: 3 desired | 3 updated | 3 total | 3 available | 0 unavailable
StrategyType: RollingUpdate
MinReadySeconds: 0
RollingUpdateStrategy: 25% max unavailable, 25% max surge
Pod Template:
Labels: app=nginx
Containers:
  nginx:
    Image: bitnami/nginx:1.18
    Port: <none>
    Host Port: <none>
    Environment: <none>
    Mounts: <none>
    Volumes: <none>
Conditions:
  Type Status Reason
  ----
  Available True MinimumReplicasAvailable
  Progressing True NewReplicaSetAvailable
OldReplicaSets: <none>
NewReplicaSet: nginx-566b5879cb (3/3 replicas created)
Events:
Type Reason Age From Message
----
Normal ScalingReplicaSet 2m51s deployment-controller Scaled up replica set nginx-566b5879cb to 3
jegan@tektutor.org ~$ oc get rs
NAME DESIRED CURRENT READY AGE
nginx-566b5879cb 3 3 3 14m
jegan@tektutor.org ~$ oc describe rs/nginx-566b5879cb
Name: nginx-566b5879cb
Selector: app=nginx,pod-template-hash=566b5879cb
Labels: app=nginx
pod-template-hash=566b5879cb
Annotations: deployment.kubernetes.io/desired-replicas: 3
deployment.kubernetes.io/max-replicas: 4
deployment.kubernetes.io/revision: 1
Controlled By: Deployment/nginx
Replicas: 3 current / 3 desired
Pods Status: 3 Running / 0 Waiting / 0 Succeeded / 0 Failed
Pod Template:
Labels: app=nginx
pod-template-hash=566b5879cb
Containers:
  nginx:
    Image: bitnami/nginx:1.18
    Port: <none>
    Host Port: <none>
    Environment: <none>
    Mounts: <none>
    Volumes: <none>
Events:
Type Reason Age From Message
----
Normal SuccessfulCreate 14m replicaset-controller Created pod: nginx-566b5879cb-sl4bd
Normal SuccessfulCreate 14m replicaset-controller Created pod: nginx-566b5879cb-rn4mk
Normal SuccessfulCreate 14m replicaset-controller Created pod: nginx-566b5879cb-rj2f9
jegan@tektutor.org ~$ oc get po
NAME READY STATUS RESTARTS AGE
nginx-566b5879cb-rj2f9 1/1 Running 0 15m
nginx-566b5879cb-rn4mk 1/1 Running 0 15m
nginx-566b5879cb-sl4bd 1/1 Running 0 15m
jegan@tektutor.org ~$ oc describe pod/nginx-566b5879cb-sl4bd
Name: nginx-566b5879cb-sl4bd
Namespace: jegan
Priority: 0
Service Account: default
Node: worker-2.ocp4.tektutor.org.labs/192.168.122.81
Start Time: Tue, 11 Jun 2024 12:02:24 +0530
Labels: app=nginx
pod-template-hash=566b5879cb
Annotations: k8s.ovn.org/pod-networks:
{"default":{"ip_addresses":["10.131.0.40/23"],"mac_address":"0a:58:0a:83:00:28","gateway_ips":["10.131.0.1"],"routes":[{"dest":"10.128.0.0
...


```

```
jegan@tektutor.org
nginx-566b5879cb-sl4bd 1/1 Running 0 15m
jegan@tektutor.org ➔ oc describe pod/nginx-566b5879cb-sl4bd
Name: nginx-566b5879cb-sl4bd
Namespace: jegan
Priority: 0
Service Account: default
Node: worker-2.ocp4.tektutor.org/labs/192.168.122.81
Start Time: Tue, 11 Jun 2024 12:02:24 +0530
Labels: app=nginx
Annotations: k8s.ovn.org/pod-networks:
{"default":{"ip_addresses":["10.131.0.40/23"],"mac_address":"0a:58:0a:83:00:28","gateway_ips":["10.131.0.1"],"routes":[{"dest":"10.128.0.0
...
k8s.v1.cni.cncf.io/network-status:
[{"name": "ovn-kubernetes",
"interface": "eth0",
"ips": [
"10.131.0.40"
],
"mac": "0a:58:0a:83:00:28",
"default": true,
"dns": {}
}]
openshift.io/scc: restricted-v2
seccomp.security.alpha.kubernetes.io/pod: runtime/default
Status: Running
SeccompProfile: RuntimeDefault
IP: 10.131.0.40
IPs:
IP: 10.131.0.40
Controlled By: ReplicaSet/nginx-566b5879cb
Containers:
nginx:
Container ID: cri-o://f4cc6ab0f7a3b40e9b231c9b8dc90bce467dd75011cd5ccd1cd42c0b65701e69
Image: bitnami/nginx:1.18
Image ID: docker.io/bitnami/nginx@sha256:6b998c3c1a9e411346cff07fe48bcade4ab4775130da80efc00d223dfe03ce0b
Port: <none>
Host Port: <none>
State: Running
Started: Tue, 11 Jun 2024 12:02:40 +0530
Ready: True
Restart Count: 0
Environment: <none>
Mounts:
/var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-x7kj4 (ro)
Conditions:
Type Status
Initialized True
Ready True
ContainersReady True
PodScheduled True
Volumes:
kube-api-access-x7kj4:
Type: Projected (a volume that contains injected data from multiple sources)
TokenExpirationSeconds: 3607
ConfigMapName: kube-root-ca.crt
ConfigMapOptional: <nil>
DownwardAPI: true
ConfigMapName: openshift-service-ca.crt
ConfigMapOptional: <nil>
QoS Class: BestEffort
Node-Selectors: <none>
Tolerations: node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events:
Type Reason Age From Message
-----
Normal Scheduled 15m default-scheduler Successfully assigned jegan/nginx-566b5879cb-sl4bd to worker-2.ocp4.tektutor.org/labs
Normal AddedInterface 15m multus Add eth0 [10.131.0.40/23] from ovn-kubernetes
Normal Pulling 15m kubelet Pulling image "bitnami/nginx:1.18"
Normal Pulled 15m kubelet Successfully pulled image "bitnami/nginx:1.18" in 15.847s (15.847s including waiting)
Normal Created 15m kubelet Created container nginx
Normal Started 15m kubelet Started container nginx
jegan@tektutor.org ➔
```

Lab - Getting inside a node shell from terminal (please don't make any changes)

```
oc debug node/master-1.ocp4.tektutor.org/labs
oc debug node/master-2.ocp4.tektutor.org/labs
oc debug node/master-3.ocp4.tektutor.org/labs
oc debug node/worker-1.ocp4.tektutor.org/labs
oc debug node/worker-2.ocp4.tektutor.org/labs
chroot /host
exit
exit
```

Lab - Accessing the etcd database content in one of the master nodes

Expected output  etcd