

### EXPERIMENT NO.10

**Aim:** To study and implement container orchestration using Kubernetes.

**Theory:**

Container orchestration tools simplify the management of containerized applications, making them easier to deploy, scale, manage, and maintain in production environments. They play a crucial role in enabling organizations to leverage the benefits of container technology while ensuring reliability, scalability, and efficiency. Container orchestration tools are essential in managing the complexities of deploying and scaling containerized applications efficiently.

1. **Scalability:** Containerized applications need to be able to scale rapidly to meet fluctuating demand. Orchestration tools provide mechanisms to automatically scale containers up or down based on factors like CPU usage, memory consumption, or incoming traffic.
2. **High Availability:** Orchestration tools ensure that applications remain available even if individual containers or entire nodes fail. They automatically detect failures and reschedule containers on healthy nodes to maintain service availability.
3. **Resource Optimization:** Orchestration tools optimize the allocation of resources by efficiently packing containers onto host machines. They balance the workload across the infrastructure, ensuring that resources are utilized effectively without wasting capacity.
4. **Service Discovery and Load Balancing:** As containerized applications are often composed of multiple microservices, orchestration tools facilitate service discovery and load balancing. They enable containers to locate and communicate with each other dynamically, distributing incoming requests across multiple instances to prevent bottlenecks.
5. **Rolling Updates and Rollbacks:** Orchestration tools support seamless deployment of updates to applications without downtime. They enable rolling updates, where new container instances are gradually introduced

while old instances are retired, ensuring continuous availability. In case of issues, they also allow for quick rollbacks to previous versions.

6. Configuration Management: Orchestration tools provide mechanisms for managing configuration parameters across containers, ensuring consistency and facilitating easy updates. They allow for centralized management of environment variables, secrets, and other configuration settings.

7. Health Monitoring and Logging: Orchestration tools monitor the health of containers and nodes, providing insights into the overall status of the application infrastructure. They collect logs and metrics from containers and make them available for analysis, troubleshooting, and performance optimization.

8. Security: Orchestration tools offer features to enhance the security of containerized applications, such as network segmentation, access controls, and automated security updates. They help enforce security policies and best practices across the container environment.

Kubernetes is an open-source container orchestration platform originally developed by Google, now maintained by the Cloud Native Computing Foundation (CNCF). It provides a robust infrastructure for automating deployment, scaling, and managing containerized applications. Here are some of its key features:

1. Container Orchestration: Kubernetes automates the deployment, scaling, and management of containerized applications across clusters of hosts. It abstracts away the underlying infrastructure, allowing developers to focus on building and running their applications without worrying about the complexities of managing individual containers.

2. Service Discovery and Load Balancing: Kubernetes provides built-in service discovery and load balancing mechanisms. Services are assigned unique DNS names, which are automatically updated as containers are created or terminated. Kubernetes also distributes incoming traffic across multiple instances of a service to ensure high availability and optimal performance.

3. Automatic Scaling: Kubernetes supports both manual and automatic scaling of application instances based on resource utilization metrics such as CPU and memory usage. Horizontal Pod Autoscaling (HPA) automatically adjusts the number of replica pods in a deployment to match the desired resource utilization levels, ensuring that applications can handle fluctuations in demand effectively.

4. Rolling Updates and Rollbacks: Kubernetes facilitates seamless updates to applications through rolling updates. It gradually replaces old instances of containers with new ones, ensuring that the application remains available throughout the update process. In case of issues, Kubernetes supports quick rollbacks to previous versions, minimizing downtime and reducing the risk of service disruptions.

5. Storage Orchestration: Kubernetes provides built-in support for persistent storage, allowing applications to store and access data beyond the lifecycle of individual containers. It offers various storage options, including local storage, network-attached storage (NAS), and cloud-based storage solutions, and provides mechanisms for dynamically provisioning and attaching storage volumes to containers as needed.

6. Self-Healing: Kubernetes continuously monitors the health of containers and nodes in the cluster. If a container or node fails, Kubernetes automatically restarts failed containers, reschedules them onto healthy nodes, and replaces unhealthy nodes as necessary to maintain the desired state of the application.

7. Declarative Configuration: Kubernetes uses declarative YAML or JSON configuration files to define the desired state of applications, services, and infrastructure components. Developers specify the desired configuration, and Kubernetes handles the details of ensuring that the actual state matches the desired state, automatically making any necessary adjustments as needed.

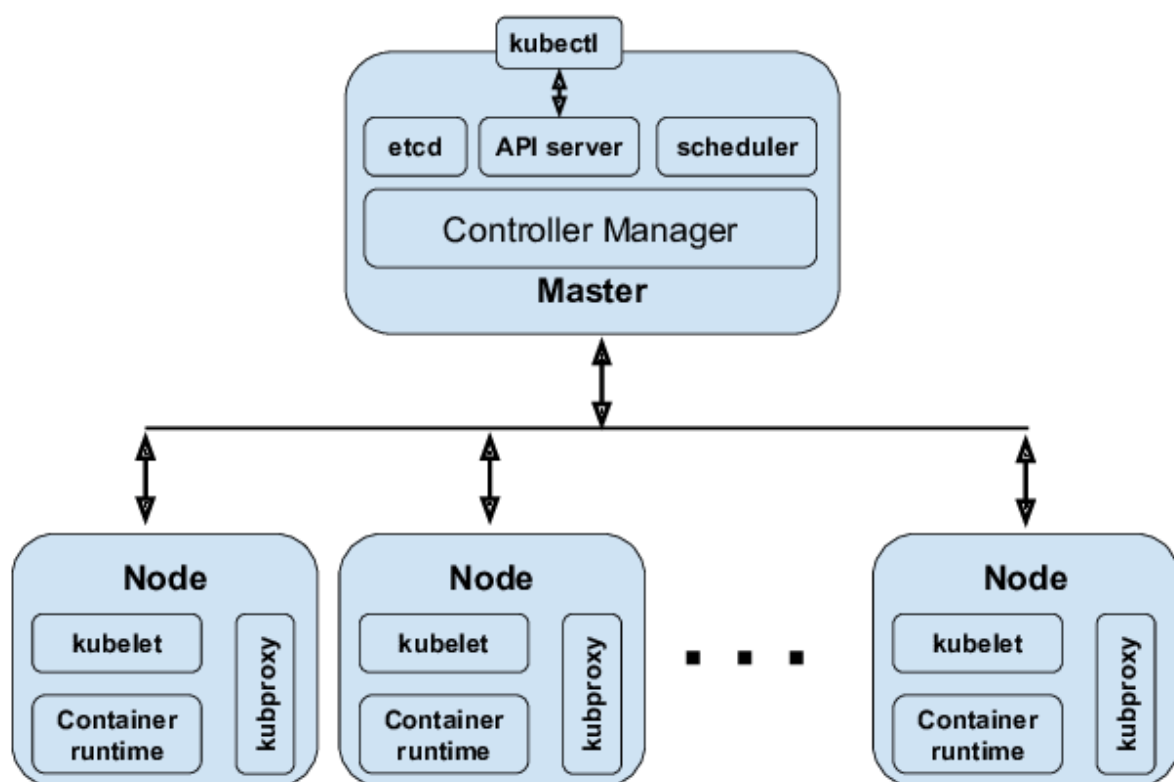
8. Extensibility and Ecosystem: Kubernetes is highly extensible and provides a rich ecosystem of plugins, extensions, and integrations. It supports custom resource definitions (CRDs) and operators, allowing

users to extend Kubernetes functionality to support custom application requirements or integrate with third-party tools and services.

Kubernetes is an open-source container orchestration platform designed to automate the deployment, scaling, and management of containerized applications. It was originally developed by Google and is now maintained by the Cloud Native Computing Foundation (CNCF).

Kubernetes provides a robust set of features for managing containerized workloads across a cluster of machines.

Components of Kubernetes:



### 1. Master Node:

- **kube-apiserver**: Exposes the Kubernetes API, which is used by other components to communicate with the cluster.
- **kube-controller-manager**: Manages various controllers that regulate the state of the cluster, such as node and replication controllers.
- **kube-scheduler**: Responsible for scheduling pods (groups of containers) onto nodes based on resource requirements and constraints.

### 2. Worker Node:

- **kubelet**: Acts as an agent running on each node in the cluster, responsible for managing containers, pods, and their lifecycle.
- **kube-proxy**: Maintains network rules and performs load balancing across services.
- **Container Runtime**: The software responsible for running containers, such as Docker, containerd, or CRI-O.

### 3. etcd:

- Distributed key-value store used as Kubernetes' backing store for all cluster data, including configuration details and state.

### Working of Kubernetes:

1. **Deployment**: Users define the desired state of their applications using Kubernetes manifests (YAML or JSON files) specifying details such as container images, resource requirements, and scaling policies.
2. **API Server**: Users interact with the Kubernetes cluster through the API server, which exposes endpoints for managing resources.
3. **Scheduler**: The scheduler assigns pods to nodes based on resource requirements, node capacity, and other constraints.
4. **Kubelet**: Runs on each node and ensures that the containers described in the pods are running and healthy. It communicates with the API server to receive pod specifications and report the status of containers.
5. **Controller Manager**: Monitors the cluster state and ensures that the current state matches the desired state defined by users. It includes controllers like the replication controller, which manages the number of pod replicas, and the node controller, which handles node lifecycle events.
6. **etcd**: Stores the state of the entire Kubernetes cluster, including configuration data, secrets, and the state of running pods.

## Kubernetes Architecture:

- **Master-Worker Architecture**: Kubernetes follows a master-worker architecture, where the master node manages and controls the cluster's state and configuration, while worker nodes execute the actual containerized workloads.
- **Declarative Model**: Kubernetes uses a declarative model, where users specify the desired state of their applications, and Kubernetes ensures that the current state matches the desired state continuously.
- **High Availability**: Kubernetes supports high availability by allowing multiple master nodes and providing mechanisms for automatic failover and redundancy.
- **Networking**: Kubernetes manages networking between pods and services using a flat, virtual network that spans all nodes in the cluster. Each pod gets its IP address, and containers within the same pod share the same network namespace.
- **Plugins and Extensions**: Kubernetes offers a modular architecture with a rich ecosystem of plugins and extensions for networking, storage, monitoring, logging, and security, allowing users to customize and extend Kubernetes to meet their specific requirements.

Aspect	Pod	Node
Definition	Smallest deployable unit in Kubernetes	A physical or virtual machine in the cluster
Composition	One or more containers	Hosts multiple Pods
Atomic Unit	Single instance of a workload	A single machine in the cluster
Networking	Each Pod has its own unique IP address	Each Node has a unique IP address
Resource	Consumes resources such as CPU, memory, etc.	Provides resources to run Pods
Scheduling	Scheduled to run on a Node by Kubernetes	Managed by Kubernetes scheduler
Lifecycle	Pods can be created, deleted, or terminated	Nodes can be added, removed, or drained
Failover	If a Pod fails, Kubernetes restarts it	If a Node fails, Kubernetes reschedules Pods
Scaling	Horizontal scaling is done by replicating Pods	Vertical scaling is done by adding resources
Management	Managed by Kubernetes through the API server	Managed by the kubelet and Kubernetes master
Independence	Pods are independent of each other	Nodes are part of the overall cluster
Health Checks	Kubernetes checks Pod health using probes	Nodes are checked for health using probes

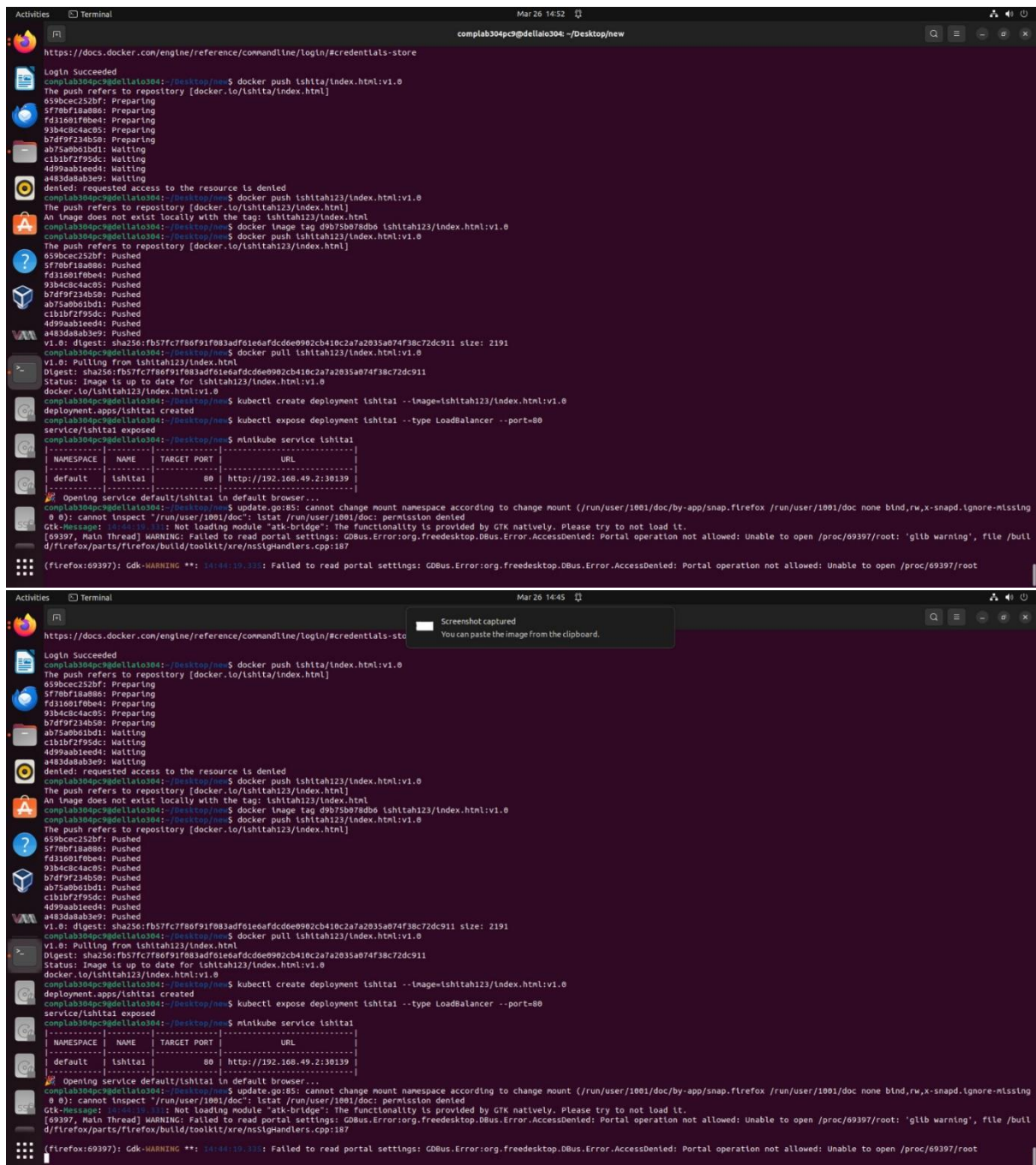
Kubernetes and Docker Swarm both provide container orchestration capabilities, but they differ in their architecture, scalability, feature set, and target audience. Kubernetes is favored for its extensive features, scalability, and large ecosystem, making it suitable for managing large, complex containerized applications. On the other hand, Docker Swarm is simpler to set up and use, making it a good choice for smaller deployments or organizations already using Docker.

Aspect	Kubernetes	Docker Swarm
Origin	Developed by Google, open-sourced, and managed by CNCF	Developed and maintained by Docker
Architecture	Master-worker architecture	Decentralized architecture
Scalability	Highly scalable, suitable for large, complex deployments	Scales well for small to medium deployments
Orchestration Features	Rich set of features including auto-scaling, rolling updates, service discovery, and more	Provides basic orchestration features like service discovery, load balancing, and rolling updates
Networking	Offers a highly flexible networking model with built-in solutions like Kubernetes Networking (kubenet) and Container Network Interface (CNI) plugins	Networking features are simpler compared to Kubernetes, but support overlay networks and other basic networking functionalities

Aspect	Kubernetes	Docker Swarm
Configuration	Uses YAML or JSON manifests for defining resources and configurations	Supports Docker Compose for defining services, but configurations are generally simpler compared to Kubernetes
Community & Ecosystem	Large and vibrant community with extensive ecosystem of tools, plugins, and third-party integrations	Growing community and ecosystem, but smaller compared to Kubernetes
Learning Curve	Steeper learning curve due to its complexity and rich feature set	Generally simpler to learn and use, especially for users already familiar with Docker
Adoption	Widely adopted across industries and enterprises for managing complex containerized workloads at scale	Popular among small to medium-sized deployments and organizations already using Docker for containerization
Vendor Support	Supported by various cloud providers and vendors offering managed Kubernetes services	Docker provides Swarm as part of its Docker Enterprise Edition (EE) offering, and there are some third-party solutions available for support

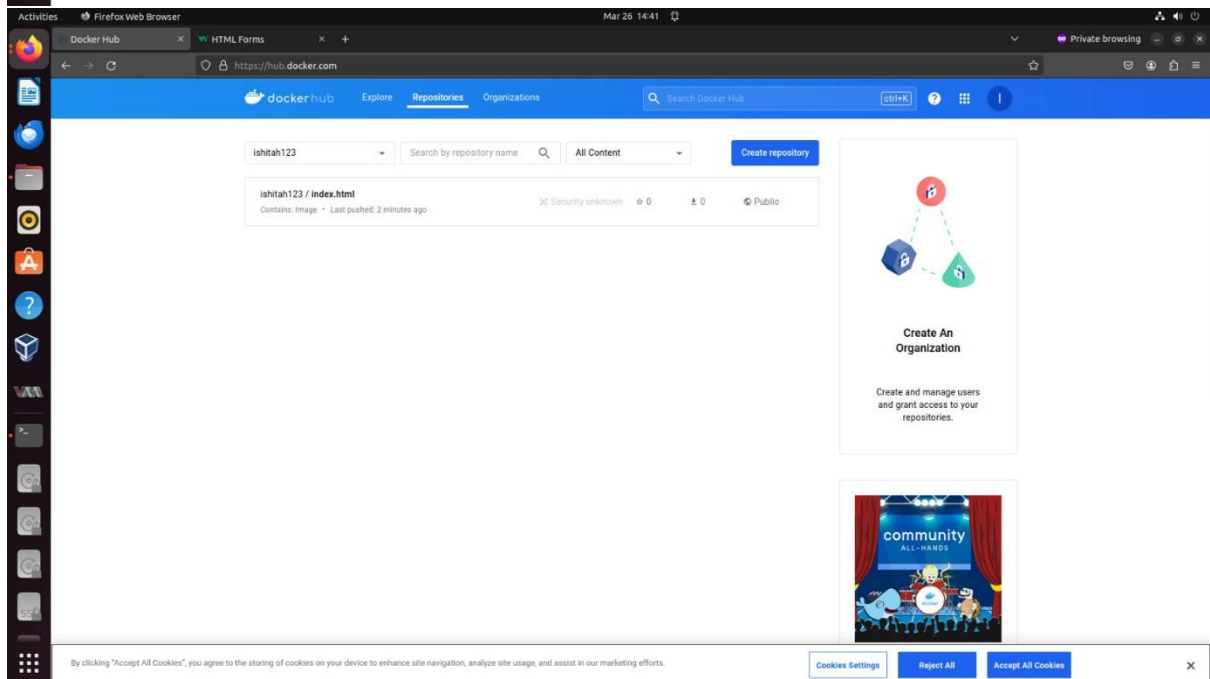
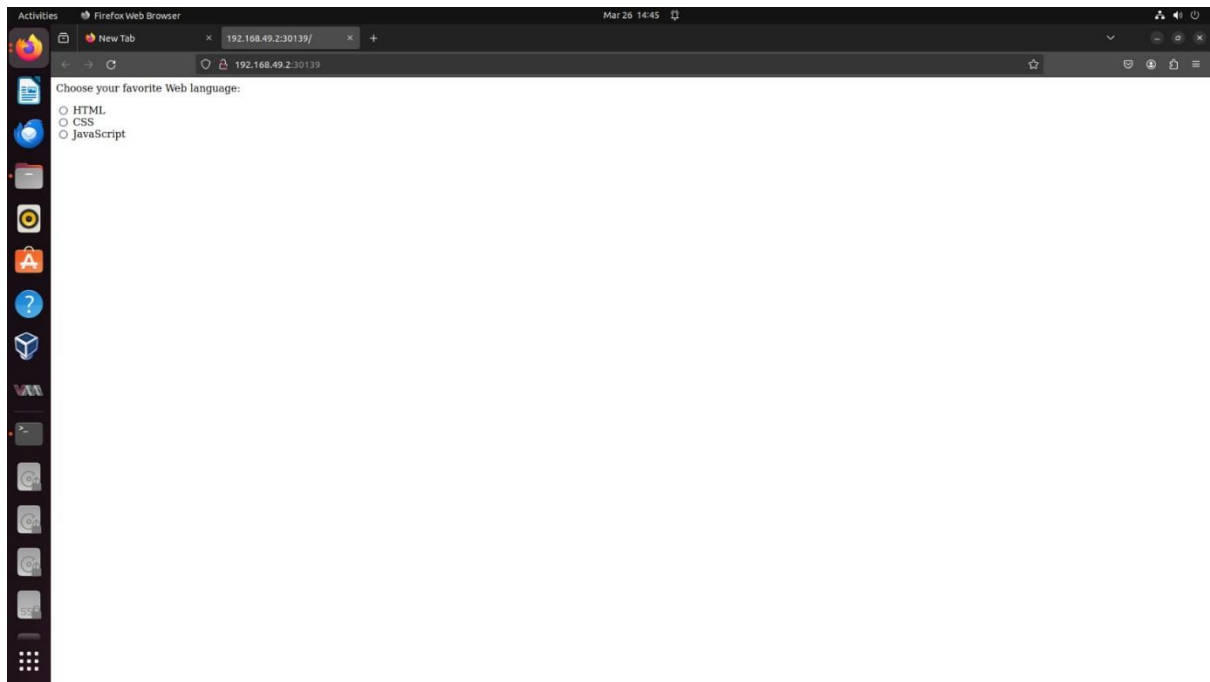


# Implementation:



```
https://docs.docker.com/engine/reference/commandline/login/#credentials-store
Login Succeeded
complab304pc@dellaio304: ~/Desktop/new$ docker push ishitai/index.html:v1.0
The push refers to repository [docker.io/ishitai/index.html]
659bcec252bf: Preparing
5f70bf18a880: Preparing
fd31681f8be4: Preparing
93b4c8c4ac05: Preparing
b7df9f234b50: Preparing
ab75a0b01bd1: Waiting
c1b1bf2f95dc: Waiting
4d99aabee4: Waiting
a483da8ab3e9: Waiting
denied: requested access to the resource is denied
complab304pc@dellaio304: ~/Desktop/new$ docker push ishitah123/index.html:v1.0
The push refers to repository [docker.io/ishitah123/index.html]
An image does not exist locally with the tag: ishitah123/index.html
complab304pc@dellaio304: ~/Desktop/new$ docker image tag d9b75b078db6 ishitah123/index.html:v1.0
complab304pc@dellaio304: ~/Desktop/new$ docker push ishitah123/index.html:v1.0
The push refers to repository [docker.io/ishitah123/index.html]
659bcec252bf: Pushed
5f70bf18a880: Pushed
fd31681f8be4: Pushed
93b4c8c4ac05: Pushed
b7df9f234b50: Pushed
ab75a0b01bd1: Pushed
c1b1bf2f95dc: Pushed
4d99aabee4: Pushed
a483da8ab3e9: Pushed
v1.0: digest: sha256:fb57fc7f80f91f083adf01eafdc0e0902cb410c2a7a2035a074f38c72dc911 size: 2191
complab304pc@dellaio304: ~/Desktop/new$ docker pull ishitah123/index.html:v1.0
v1.0: Pulling from ishitah123/index.html
Digest: sha256:fb57fc7f80f91f083adf01eafdc0e0902cb410c2a7a2035a074f38c72dc911
Status: Image is up to date for ishitah123/index.html:v1.0
complab304pc@dellaio304: ~/Desktop/new$ kubectl create deployment ishitai --image=ishitah123/index.html:v1.0
deployment.apps/ishitai created
complab304pc@dellaio304: ~/Desktop/new$ kubectl expose deployment ishitai --type LoadBalancer --port=80
service/ishitai exposed
complab304pc@dellaio304: ~/Desktop/new$ minikube service ishitai
-----
| NAMESPACE | NAME   | TARGET PORT | URL                                |
|-----|-----|-----|-----|
| default   | ishitai | 80          | http://192.168.49.2:30139        |
|-----|-----|-----|-----|
Opening service default/ishitai in default browser...
complab304pc@dellaio304: ~/Desktop/new$ update-go85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.firefox /run/user/1001/doc none bind,rw,x-snapd.ignore-missing
0 0): cannot inspect "/run/user/1001/doc": lstat /run/user/1001/doc: permission denied
Gtk-Message: 14:44:19.331: Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
(69397, Main Thread) WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/69397/root: 'glib warning', file /bui
d/firefox/parts/firefox/build/toolkit/xre/nsSGHandlers.cpp:187
(firefox:69397): Gdk-WARNING **: 14:44:19.335: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/69397/root
```

Screenhot captured  
You can paste the image from the clipboard.



```
Activities Terminal Mar 26 14:39 complab304pc9@dellalo304: ~/Desktop/new

Opening to docker.io/library/index.html
complab304pc9@dellalo304:~/Desktop/new$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
index.html latest d9b75b078db6 13 seconds ago 187MB
nginx latest 92b11f67642b 5 weeks ago 187MB
gcr.io/k8s-minikube/kicbase v0.0.42 d0c44475405 4 months ago 1.2GB
complab304pc9@dellalo304:~/Desktop/new$ docker image tag ^C
complab304pc9@dellalo304:~/Desktop/new$ docker image tag d9b75b078db6 lshita/index.html:v1.0
complab304pc9@dellalo304:~/Desktop/new$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
index.html latest d9b75b078db6 2 minutes ago 187MB
lshita/index.html v1.0 d9b75b078db6 2 minutes ago 187MB
nginx latest 92b11f67642b 5 weeks ago 187MB
gcr.io/k8s-minikube/kicbase v0.0.42 d0c44475405 4 months ago 1.2GB
complab304pc9@dellalo304:~/Desktop/new$ docker login
Log in with your Docker ID or email address to push and pull images from Docker Hub. If you don't have a Docker ID, head over to https://hub.docker.com/ to create one.
You can log in with your password or a Personal Access Token (PAT). Using a limited-scope PAT grants better security and is required for organizations using SSO. Learn more at https://docs.docker.com/go/accessToken-tokens/
Username: lshita123
Password:
WARNING! Your password will be stored unencrypted in /home/complab304pc9/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
complab304pc9@dellalo304:~/Desktop/new$ docker push lshita/index.html:v1.0
The push refers to repository [docker.io/lshita/index.html]
659bcec222bf: Preparing
5f70bf1a0e00: Preparing
fd31001f0be4: Preparing
93b4c8c4ac05: Preparing
b7d7f9f23ab0: Preparing
ab75a0b01bd1: Waiting
c1b1bf2f95dc: Waiting
4d99a0b1e0ed: Waiting
a483da8ab3e9: Waiting
denied: requested access to the resource is denied
complab304pc9@dellalo304:~/Desktop/new$ docker push lshita123/index.html:v1.0
The push refers to repository [docker.io/lshita123/index.html]
An image does not exist locally with the tag: lshita123/index.html
complab304pc9@dellalo304:~/Desktop/new$ docker image tag d9b75b078db6 lshita123/index.html:v1.0
complab304pc9@dellalo304:~/Desktop/new$ docker push lshita123/index.html:v1.0
The push refers to repository [docker.io/lshita123/index.html]
659bcec222bf: Pushed
5f70bf1a0e00: Pushed
fd31001f0be4: Pushed
93b4c8c4ac05: Pushed
b7d7f9f23ab0: Pushed
ab75a0b01bd1: Pushed
c1b1bf2f95dc: Pushed
4d99a0b1e0ed: Pushed
a483da8ab3e9: Pushed
v1.0: digest: sha256:fb57fc7f86f91f083adfe1eafdc0e0902cb410c2a7a2035a074f38c72dc911 size: 2191
complab304pc9@dellalo304:~/Desktop/new$

Activities Terminal Mar 26 14:21 complab304pc9@dellalo304: -

Opening http://127.0.0.1:33497/apl/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/ in your default browser...
update.go:85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.flrfox /run/user/1001/doc none bind,rw,x-snapd.ignore-missing 0 0): cannot inspect "/run/user/1001/doc"
C: lstat /run/user/1001/doc: permission denied
Gtk-Message: Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
[37865, Main Thread] WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/37865/root: 'glib warning', file /build/d/f/firefox/parts/firefox/build/toolkit/xre/nsISgiandlers.cpp:187
(firefox:37865): Gdk-WARNING **: 14:07:13.279: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/37865/root
^C
complab304pc9@dellalo304:~/Desktop/new$ kubectl get services
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
lshita-nginx LoadBalancer 10.107.130.190 <pending> 80:30818/TCP 10m
kubernetes ClusterIP 10.96.0.1 <none> 443/TCP 27m
nginx-web NodePort 10.100.91.23 <none> 80:31852/TCP 23m
complab304pc9@dellalo304:~/Desktop/new$ kubectl delete deployments lshita-nginx
deployment.apps "lshita-nginx" deleted
complab304pc9@dellalo304:~/Desktop/new$ kubectl get services
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
lshita-nginx LoadBalancer 10.107.130.190 <pending> 80:30818/TCP 10m
kubernetes ClusterIP 10.96.0.1 <none> 443/TCP 27m
nginx-web NodePort 10.100.91.23 <none> 80:31852/TCP 24m
complab304pc9@dellalo304:~/Desktop/new$ kubectl get deployments
NAME READY UP-TO-DATE AVAILABLE AGE
dumb 0/0 0 0 7m4s
nginx-web 1/1 1 1 24m
complab304pc9@dellalo304:~/Desktop/new$ kubectl delete deployments dumb
deployment.apps "dumb" deleted
complab304pc9@dellalo304:~/Desktop/new$ kubectl delete deployments nginx-web
deployment.apps "nginx-web" deleted
complab304pc9@dellalo304:~/Desktop/new$ kubectl delete deployments nginx-web
deployment.apps "nginx-web" deleted
Verifying dashboard health ...
Launching proxy ...
Verifying proxy health ...
Opening http://127.0.0.1:41079/apl/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/ in your default browser...
update.go:85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.flrfox /run/user/1001/doc none bind,rw,x-snapd.ignore-missing 0 0): cannot inspect "/run/user/1001/doc"
C: lstat /run/user/1001/doc: permission denied
Gtk-Message: Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
[40523, Main Thread] WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/40523/root: 'glib warning', file /build/d/f/firefox/parts/firefox/build/toolkit/xre/nsISgiandlers.cpp:187
(firefox:40523): Gdk-WARNING **: 14:08:00.434: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/40523/root
^C
complab304pc9@dellalo304:~/Desktop/new$ nano index.html
complab304pc9@dellalo304:~/Desktop/new$ cat index.html
<p>Choose your favorite Web language:</p>
<form>
<input type="radio" id="html" name="fav_language" value="HTML">
<label for="html">HTML</label><br>
<input type="radio" id="css" name="fav_language" value="CSS">
<label for="css">CSS</label><br>
<input type="radio" id="javascript" name="fav_language" value="JavaScript">
<label for="javascript">JavaScript</label>
</form>
complab304pc9@dellalo304:~/Desktop/new$
```

```
Activities Terminal Mar 26 14:10
(firefox:31547): Gdk-WARNING **: 14:08:13.830: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/31547/root
^C
comlab304pc@qdel1a0304:~$ kubectl create deployment dumb --image=nginx
deployment.apps/dumb created
comlab304pc@qdel1a0304:~$ kubectl create deployment dumb --image=nginx:latest --replicas=2
error: failed to create deployment: deployments.apps "dumb" already exists
comlab304pc@qdel1a0304:~$ kubectl scale --replicas=0 deployment dumb
deployment.apps/dumb scaled
comlab304pc@qdel1a0304:~$ minikube dashboard
Verifying dashboard health ...
Launching proxy ...
Verifying proxy health ...
Opening http://127.0.0.1:33497/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:proxy/ in your default browser...
update.go:85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.firefox /run/user/1001/doc none bind,rw,x-snapd.ignore-missing 0 0): cannot inspect "/run/user/1001/doc": lstat /run/user/1001/doc: permission denied
C: lstat /run/user/1001/doc: permission denied
Gtk-Message: Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
[37865, Main Thread] WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/37865/root: 'glib warning', file /build
d/firefox/parts/firefox/build/toolkit/xre/nsSGIandlers.cpp:187

(firefox:37865): Gdk-WARNING **: 14:07:32.279: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/37865/root
^C
comlab304pc@qdel1a0304:~$ kubectl get services
NAME      TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE
tshita-nginx  LoadBalancer  10.107.136.190   <pending>        80:30818/TCP  10m
kubernetes  ClusterIP     10.96.0.1        <none>           443/TCP       27m
nginx-web   NodePort      10.106.91.23     <none>           80:31852/TCP  23m
comlab304pc@qdel1a0304:~$ kubectl delete deployments tshita-nginx
deployment.apps "tshita-nginx" deleted
comlab304pc@qdel1a0304:~$ kubectl get services
NAME      TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE
tshita-nginx  LoadBalancer  10.107.136.190   <pending>        80:30818/TCP  10m
kubernetes  ClusterIP     10.96.0.1        <none>           443/TCP       27m
nginx-web   NodePort      10.106.91.23     <none>           80:31852/TCP  24m
comlab304pc@qdel1a0304:~$ kubectl get deployments
NAME      READY   UP-TO-DATE   AVAILABLE   AGE
dumb      0/0     0             0           7m4s
nginx-web 1/1     1             1           24m
comlab304pc@qdel1a0304:~$ kubectl delete deployments dumb
deployment.apps "dumb" deleted
comlab304pc@qdel1a0304:~$ kubectl delete deployments nginx-web
deployment.apps "nginx-web" deleted
comlab304pc@qdel1a0304:~$ minikube dashboard
Verifying dashboard health ...
Launching proxy ...
Verifying proxy health ...
Opening http://127.0.0.1:33497/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:proxy/ in your default browser...
update.go:85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.firefox /run/user/1001/doc none bind,rw,x-snapd.ignore-missing 0 0): cannot inspect "/run/user/1001/doc": lstat /run/user/1001/doc: permission denied
C: lstat /run/user/1001/doc: permission denied
Gtk-Message: Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
[40523, Main Thread] WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/40523/root: 'glib warning', file /build
d/firefox/parts/firefox/build/toolkit/xre/nsSGIandlers.cpp:187

(firefox:40523): Gdk-WARNING **: 14:10:06.434: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/40523/root
^C
comlab304pc@qdel1a0304:~$

Activities Terminal Mar 26 14:10
Gtk-Message: 14:09:59.330: Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
[30890, Main Thread] WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/30890/root: 'glib warning', file /build
d/firefox/parts/firefox/build/toolkit/xre/nsSGIandlers.cpp:187

(firefox:30890): Gdk-WARNING **: 14:09:58.530: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/30890/root
^C
comlab304pc@qdel1a0304:~$ minikube dashboard
Error: unknown command "dashboard" for "minikube"

Did you mean this?
  dashboard

Run 'minikube --help' for usage.
comlab304pc@qdel1a0304:~$ minikube dashboard
Verifying dashboard health ...
Launching proxy ...
Verifying proxy health ...
Opening http://127.0.0.1:33497/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:proxy/ in your default browser...
update.go:85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.firefox /run/user/1001/doc none bind,rw,x-snapd.ignore-missing 0 0): cannot inspect "/run/user/1001/doc": lstat /run/user/1001/doc: permission denied
C: lstat /run/user/1001/doc: permission denied
Gtk-Message: Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
[31547, Main Thread] WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/31547/root: 'glib warning', file /build
d/firefox/parts/firefox/build/toolkit/xre/nsSGIandlers.cpp:187

(firefox:31547): Gdk-WARNING **: 14:08:13.830: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/31547/root
^C
comlab304pc@qdel1a0304:~$ kubectl create deployment dumb --image=nginx
deployment.apps/dumb created
comlab304pc@qdel1a0304:~$ kubectl create deployment dumb --image=nginx:latest --replicas=2
error: failed to create deployment: deployments.apps "dumb" already exists
comlab304pc@qdel1a0304:~$ kubectl scale --replicas=0 deployment dumb
deployment.apps/dumb scaled
comlab304pc@qdel1a0304:~$ minikube dashboard
Verifying dashboard health ...
Launching proxy ...
Verifying proxy health ...
Opening http://127.0.0.1:33497/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:proxy/ in your default browser...
update.go:85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.firefox /run/user/1001/doc none bind,rw,x-snapd.ignore-missing 0 0): cannot inspect "/run/user/1001/doc": lstat /run/user/1001/doc: permission denied
C: lstat /run/user/1001/doc: permission denied
Gtk-Message: Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
[37865, Main Thread] WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/37865/root: 'glib warning', file /build
d/firefox/parts/firefox/build/toolkit/xre/nsSGIandlers.cpp:187

(firefox:37865): Gdk-WARNING **: 14:07:32.279: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/37865/root
^C
comlab304pc@qdel1a0304:~$ kubectl get services
NAME      TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE
tshita-nginx  LoadBalancer  10.107.136.190   <pending>        80:30818/TCP  10m
kubernetes  ClusterIP     10.96.0.1        <none>           443/TCP       27m
nginx-web   NodePort      10.106.91.23     <none>           80:31852/TCP  23m
comlab304pc@qdel1a0304:~$ kubectl delete deployments tshita-nginx
deployment.apps "tshita-nginx" deleted
comlab304pc@qdel1a0304:~$ kubectl get services
NAME      TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE
tshita-nginx  LoadBalancer  10.107.136.190   <pending>        80:30818/TCP  10m
kubernetes  ClusterIP     10.96.0.1        <none>           443/TCP       27m
```



Activities Terminal Mar 26 14:10

comp1ab304pc9@dellaio304 -

```
e78b137be355: Pull complete
39fca75b2b2a: Pull complete
035788421403: Pull complete
87c3fb37cbf2: Pull complete
c5cd1cecf32d: Pull complete
33932c59632c: Pull complete
Digest: sha256:6db391d1c0cfb30588ba0b72ea999404f2764feb0f1f196acd5867ac7efa7e
Status: Downloaded newer image for nginx:latest
docker.io/library/nginx:latest
comp1ab304pc9@dellaio304: $ docker images
REPOSITORY          TAG         IMAGE ID      CREATED       SIZE
gcr.io/k8s-minikube/kicbase   v0.9.42    dbc048475405   4 months ago   1.2GB
comp1ab304pc9@dellaio304: $ kubectl create deployment tshita-nginx --image=nginx:latest
deployment.apps/tshita-nginx created
comp1ab304pc9@dellaio304: $ kubectl get deployments
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
tshita-nginx   1/1     1             1           26s
nginx-web     1/1     1             1           9m30s
comp1ab304pc9@dellaio304: $ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
tshita-nginx-50446fd667-d88bq   1/1     Running   0           48s
nginx-web-5b757f798d-gp9xb     1/1     Running   0           9m31s
comp1ab304pc9@dellaio304: $ kubectl expose deployment tshita-nginx --port=80 --type=LoadBalancer
error: unknown flag: --tshita-nginx
See 'kubectl expose --help' for usage.
comp1ab304pc9@dellaio304: $ kubectl expose deployment tshita-nginx --port=80 --type=LoadBalancer
service/tshita-nginx exposed
comp1ab304pc9@dellaio304: $ kubectl get services
NAME          TYPE          CLUSTER-IP      EXTERNAL-IP    PORT(S)          AGE
tshita-nginx  LoadBalancer  10.107.130.190   <pending>      80:30818/TCP      14s
kubernetes    ClusterIP      10.96.0.1        <none>          443/TCP           17m
nginx-web     NodePort       10.105.91.23     <none>          80:31852/TCP      13m
comp1ab304pc9@dellaio304: $ minikube service tshita-nginx
|-----|-----|-----|
| NAME          | TARGET PORT | URL              | |
|---|---|---|---|
| default       | tshita-nginx | 80 | http://192.168.49.2:30818 |
|-----|-----|-----|
Opening service default/tshita-nginx in default browser...
comp1ab304pc9@dellaio304: $ update.go:85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.firefox /run/user/1001/doc none bind,rw,x-snapd.ignore-missing 0 0): cannot inspect "/run/user/1001/doc": lstat /run/user/1001/doc: permission denied
Gtk-Messages: Not loading module "gtk-bridge": The functionality is provided by GTK natively. Please try to not load it.
[30899, Main Thread] WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/30899/root: 'glib warning', file /build/firefox/parts/firefox/build/toolkit/xre/nsStdHandlers.cpp:187
(rfrefox:30899): Gdk-WARNING **: 13:59:56.139: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/30899/root
^C
comp1ab304pc9@dellaio304: $ minikube dashboard
Error: unknown command "dashboard" for "minikube"

Did you mean this?
  dashboard

Run 'minikube --help' for usage.
comp1ab304pc9@dellaio304: $ minikube dashboard
```

Activities Firefox Web Browser Mar 26 14:10

How to Install Minikube x Kubernetes Dashboard x Welcome to nginx! x Kubernetes Dashboard x Kubernetes Dashboard x Kubernetes Dashboard x

127.0.0.1:41079/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard/proxy/#/workloads?namespace=default

kubernetes default Search

Workloads

Workloads

There is nothing to display here

You can deploy a containerized app, select other namespace or take the Dashboard Tour to learn more.

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Config Maps

Persistent Volume Claims

Secrets

Storage Classes

Cluster

Cluster Role Bindings

Cluster Roles

Events

Namespaces

Network Policies

Activities | Firefox Web Browser | Mar 26 14:07

How to Install Minikube | Kubernetes Dashboard | Welcome to nginx | Kubernetes Dashboard | Kubernetes Dashboard

127.0.0.1:33497/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard/proxy/#/workloads?namespace=default

### kubernetes

default | Search

#### Workloads

Workload Status

Running 3 Deployments | Running 2 Pods | Running 3 Replica Sets

#### Deployments

Name	Images	Labels	Pods	Created
dumb	nginx	app: dumb	0 / 0	5 minutes ago
ishita-nginx	nginx:latest	app: ishita-nginx	1 / 1	13 minutes ago
nginx-web	nginx	app: nginx-web	1 / 1	22 minutes ago

#### Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
ishita-nginx-59446f867-d88qj	nginx:latest	app: ishita-nginx pod-template-hash: 59446f867	minikube	Running	0	-	-	13 minutes ago

Activities | Terminal | Mar 26 14:07

complab304pc@dellalo304: ~

```
nginx-web NodePort 10.106.91.23 <none> 80:31852/TCP 13m
complab304pc@dellalo304:~$ minikube service ishita-nginx
-----|-----|-----|-----|
|NAMESPACE|NAME|TARGET PORT|URL|
|-----|-----|-----|-----|
|default|ishita-nginx|80|http://192.168.49.2:30818|
|-----|-----|-----|-----|
Opening service default/ishita-nginx in default browser...
complab304pc@dellalo304:~$ update.go:85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.firefox /run/user/1001/doc none bind,rw,x-snapd.ignore-missing 0 0): cannot inspect "/run/user/1001/doc": lstat /run/user/1001/doc: permission denied
Gdk-Messages: : Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
[30899: Main Thread] WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/30899/root: 'glib warning', file /build/f/firefox/build/toolkit/xre/nsstghandlers.cpp:187
(firefox:30899): Gdk-WARNING **: 13:59:58.330: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/30899/root
complab304pc@dellalo304:~$ minikube dashboard
Error: unknown command "dashboard" for "minikube"
Did you mean this?
  dashboard
Run 'minikube --help' for usage.
complab304pc@dellalo304:~$ minikube dashboard
Verifying dashboard health ...
Launching proxy ...
Verifying proxy health ...
Opening http://127.0.0.1:33497/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard/proxy/ in your default browser...
update.go:85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.firefox /run/user/1001/doc none bind,rw,x-snapd.ignore-missing 0 0): cannot inspect "/run/user/1001/doc": lstat /run/user/1001/doc: permission denied
Gdk-Messages: : Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
[31547: Main Thread] WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/31547/root: 'glib warning', file /build/f/firefox/build/toolkit/xre/nsstghandlers.cpp:187
(firefox:31547): Gdk-WARNING **: 14:01:13.830: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/31547/root
complab304pc@dellalo304:~$ kubectl create deployment dumb --image=nginx
deployment.apps/dumb created
complab304pc@dellalo304:~$ kubectl create deployment dumb --image=nginx:latest --replicas=2
error: failed to create deployment: deployments.apps "dumb" already exists
complab304pc@dellalo304:~$ kubectl scale --replicas=0 deployment dumb
deployment.apps/dumb scaled
complab304pc@dellalo304:~$ minikube dashboard
Verifying dashboard health ...
Launching proxy ...
Verifying proxy health ...
Opening http://127.0.0.1:33497/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard/proxy/ in your default browser...
update.go:85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.firefox /run/user/1001/doc none bind,rw,x-snapd.ignore-missing 0 0): cannot inspect "/run/user/1001/doc": lstat /run/user/1001/doc: permission denied
Gdk-Messages: : Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
[37865: Main Thread] WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/37865/root: 'glib warning', file /build/f/firefox/build/toolkit/xre/nsstghandlers.cpp:187
(firefox:37865): Gdk-WARNING **: 14:07:32.279: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/37865/root
```

Activities Firefox Web Browser Mar 26 14:01

kubernetes Dashboard x Welcome to nginx x kubernetes Dashboard x

127.0.0.1:38135/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard/proxy/#/workloads?namespace=default

kubernetes default Search

Workloads

Workloads \*  
Cron Jobs  
Daemon Sets  
Deployments  
Jobs  
Pods  
Replica Sets  
Replication Controllers  
Stateful Sets  
Service  
Ingresses  
Ingress Classes  
Services  
Config and Storage  
Config Maps  
Persistent Volume Claims  
Secrets  
Storage Classes  
Cluster  
Cluster Role Bindings  
Cluster Roles  
Events  
Namespaces  
Network Policies

Workload Status

Running 2 Deployments Running 2 Pods Running 2 Replica Sets

Deployments

Name	Images	Labels	Pods	Created
ishita-nginx	nginx:latest	app: ishita-nginx	1 / 1	7 minutes ago
nginx-web	nginx	app: nginx-web	1 / 1	16 minutes ago

Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
ishita-nginx-59446f6d67-d8tqj	nginx:latest	app: ishita-nginx pod-template-hash: 59446f6d67	minikube	Running	0	-	-	7 minutes ago
nginx-web-5b3c7298d-wnvbf	nginx	app: nginx-web	minikube	Running	0	-	-	16 minutes ago

Activities Firefox Web Browser Mar 26 14:00

How to install Minkube x kubernetes Dashboard x Problem loading page x Welcome to nginx x

127.0.0.1:45087/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard/proxy/#/workloads?namespace=default

kubernetes default Search

Workloads

Workloads \*  
Cron Jobs  
Daemon Sets  
Deployments  
Jobs  
Pods  
Replica Sets  
Replication Controllers  
Stateful Sets  
Service  
Ingresses  
Ingress Classes  
Services  
Config and Storage  
Config Maps  
Persistent Volume Claims  
Secrets  
Storage Classes  
Cluster  
Cluster Role Bindings  
Cluster Roles  
Events  
Namespaces  
Network Policies

Workload Status

Running 1 Deployments Running 1 Pods Running 1 Replica Sets

Deployments

Name	Images	Labels	Pods	Created
nginx-web	nginx	app: nginx-web	1 / 1	14 minutes ago

Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
nginx-web-5b757f798d-gpxb6	nginx	app: nginx-web pod-template-hash: 5b757f798d	minikube	Running	0	-	-	14 minutes ago

Replica Sets

Activities Firefox Web Browser Mar 26 14:00

How to Install Minkube x Kubernetes Dashboard x Kubernetes Dashboard x Welcome to nginx!

192.168.49.2:30818

## Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to [nginx.org](https://nginx.org). Commercial support is available at [nginx.com](https://nginx.com).

Thank you for using nginx.

Activities Terminal Mar 26 14:00

comlab304pc9dellato304: \$ docker images

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
gcr.io/k8s-minikube/kicbase	v0.9.42	dbc648475465	4 months ago	1.2GB

comlab304pc9dellato304: \$ docker pull nginx

Using default tag: latest

latest: Pulling from library/nginx

ba1e25ce7c4f: Pull complete

e78b137e355: Pull complete

39fc875d52b2: Pull complete

83578a421403: Pull complete

87c3f337cbf2: Pull complete

c5cddice752d: Pull complete

33952c599532: Pull complete

Digest: sha256:cdb391d1c0cfb30588ab8f72ea999404f2764feb9f0f1f96acd5807ac7efa7e

Status: Downloaded newer image for nginx:latest

comlab304pc9dellato304: \$ docker images

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
nginx	latest	92b11f67642b	5 weeks ago	187MB
gcr.io/k8s-minikube/kicbase	v0.9.42	dbc648475465	4 months ago	1.2GB

comlab304pc9dellato304: \$ kubectl create deployment tshita-nginx --image=nginx:latest

deployment.apps/tshita-nginx created

comlab304pc9dellato304: \$ kubectl get deployments

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
tshita-nginx	1/1	1	1	26s

comlab304pc9dellato304: \$ kubectl get pods

NAME	READY	STATUS	RESTARTS	AGE
tshita-nginx-59446fd67-d88q	1/1	Running	0	40s
nginx-web-5b757f798d-gpxb6	1/1	Running	0	9m3s

comlab304pc9dellato304: \$ kubectl expose deployment tshita-nginx --port=80 --type=LoadBalancer

error: unknown flag: --tshita-nginx

See 'kubectl expose --help' for usage.

comlab304pc9dellato304: \$ kubectl expose deployment tshita-nginx --port=80 --type=LoadBalancer

service/tshita-nginx exposed

comlab304pc9dellato304: \$ kubectl get services

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
tshita-nginx	LoadBalancer	10.107.136.190	<pending>	80:30818/TCP	14s
kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	17m
nginx-web	NodePort	10.106.91.23	<none>	80:31852/TCP	13m

comlab304pc9dellato304: \$ minikube service tshita-nginx

NAMESPACE	NAME	TARGET PORT	URL
default	tshita-nginx	80	http://192.168.49.2:30818

Opening service default/tshita-nginx in default browser...

comlab304pc9dellato304: \$ update-ps:85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.firefox /run/user/1001/doc none bind,rw,x-snapd:ignore-missing 0 0): cannot inspect /run/user/1001/doc: istat /run/user/1001/doc: permission denied

Gtk-Message: Not loading module 'atk-bridge': the functionality is provided by GTK natively. Please try to not load it.

[30899: main Thread] WARNING: failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/30899/root: 'glib warning', file /build/d/firefox/parts/firefox/build/toolkit/xre/nsSigHandlers.cpp:187

(firefox:30899): Gtk-WARNING \*\*: 14:59:58.399: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/30899/root



```
Activities Terminal Mar 26 14:00
comlab304pc@dellaio304:~$ minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured

comlab304pc@dellaio304:~$ kubectl get deployments
NAME READY UP-TO-DATE AVAILABLE AGE
nginx-web 1/1 1 1 4m24s

comlab304pc@dellaio304:~$ kubectl get pods
NAME READY STATUS RESTARTS AGE
nginx-web-5b757f798d-gpxb6 1/1 Running 0 4m39s

comlab304pc@dellaio304:~$ minikube dashboard
Verifying dashboard health ...
Launching proxy ...
Opening http://127.0.0.1:38267/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/ in your default browser...
update.go:85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.firefox /run/user/1001/doc none bind,rw,x-snapd.ignore-missing 0 0): cannot inspect "/run/user/1001/doc": lstat /run/user/1001/doc: permission denied
Gtk-Message: Not loading module 'atk-bridge': The functionality is provided by GTK natively. Please try to not load it.
[21124, Main Thread] WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/21124/root: 'glib warning', file /build/firefox/parts/firefox/build/toolkit/xre/nsSigHandlers.cpp:187

(firefox:21124): Gtk-WARNING **: 13:50:00.300: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/21124/root

comlab304pc@dellaio304:~$ kubectl get nodes
NAME STATUS ROLES AGE VERSION
minikube Ready control-plane 9m45s v1.28.3

comlab304pc@dellaio304:~$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
docker.io/k8s-minikube/kicbase v0.0.42 dbc048475405 4 months ago 1.2GB
comlab304pc@dellaio304:~$ docker pull nginx
Using default tag: latest
latest: pulling from library/nginx
8a1e25ce7c4f: Pull complete
e78b137b355: Pull complete
39f6c75b02b2: Pull complete
035788421403: Pull complete
87c3f37cbf2: Pull complete
c5cd1ce792d: Pull complete
13952c59532: Pull complete
Digest: sha256:0db391d1c0c7b30588ba0b72ea999404f2764feb0f1f196acd5807ac7efa7e
Status: Downloaded newer image for nginx:latest
docker.io/library/nginx:latest

comlab304pc@dellaio304:~$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
nginx latest 3b211f76742b 5 weeks ago 187MB
gcr.io/k8s-minikube/kicbase v0.0.42 dbc048475405 4 months ago 1.2GB
comlab304pc@dellaio304:~$ kubectl create deployment ishita-nginx --image=nginx:latest
deployment.apps/ishita-nginx created

comlab304pc@dellaio304:~$ kubectl get deployments
NAME READY UP-TO-DATE AVAILABLE AGE
ishita-nginx 1/1 1 1 26s
nginx-web 1/1 1 1 4m39s

Activities Terminal Mar 26 13:50
Screenshot captured
You can paste the image from the clipboard.

| registry | minikube | disabled | minikube |
| registry-aliases | minikube | disabled | 3rd party (unknown) |
| registry-creds | minikube | disabled | 3rd party (UPMC Enterprises) |
| storage-provisioner | minikube | enabled | minikube |
| storage-provisioner-gluster | minikube | disabled | 3rd party (Gluster) |
| storage-provisioner-rancher | minikube | disabled | 3rd party (Rancher) |
| volumesnapshots | minikube | disabled | minikube |
|-----|-----|-----|-----|

comlab304pc@dellaio304:~$ minikube addons enable dashboard
dashboard is an addon maintained by Kubernetes. For any concerns contact minikube on GitHub.
You can view the list of minikube maintainers at: https://github.com/kubernetes/minikube/blob/master/OWNERS
■ Using image docker.io/kubernetes/dashboard:v2.7.0
■ Using image docker.io/kubernetes/metrics-scraper:v1.0.8
Some dashboard features require the metrics-server addon. To enable all features please run:
minikube addons enable metrics-server

The 'dashboard' addon is enabled
minikube addons enable ingress
Ingress is an addon maintained by Kubernetes. For any concerns contact minikube on GitHub.
You can view the list of minikube maintainers at: https://github.com/kubernetes/minikube/blob/master/OWNERS
■ Using image registry.k8s.io/ingress-nginx/controller:v1.9.4
■ Using image registry.k8s.io/ingress-nginx/kube-webhook-certgen:v20231011-0b53cabe0
■ Using image registry.k8s.io/ingress-nginx/kube-webhook-certgen:v20231011-0b53cabe0
Verifying ingress addon...
The 'Ingress' addon is enabled
comlab304pc@dellaio304:~$ minikube dashboard
Verifying dashboard health ...
Launching proxy ...
Opening http://127.0.0.1:45087/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/ in your default browser...
update.go:85: cannot change mount namespace according to change mount (/run/user/1001/doc/by-app/snap.firefox /run/user/1001/doc none bind,rw,x-snapd.ignore-missing 0 0): cannot inspect "/run/user/1001/doc": lstat /run/user/1001/doc: permission denied
Gtk-Message: Not loading module 'atk-bridge': The functionality is provided by GTK natively. Please try to not load it.
[18447, Main Thread] WARNING: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/18447/root: 'glib warning', file /build/firefox/parts/firefox/build/toolkit/xre/nsSigHandlers.cpp:187

(firefox:18447): Gtk-WARNING **: 13:47:21.810: Failed to read portal settings: GDBus.Error:org.freedesktop.DBus.Error.AccessDenied: Portal operation not allowed: Unable to open /proc/18447/root

comlab304pc@dellaio304:~$ minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured

comlab304pc@dellaio304:~$ kubectl get deployments
NAME READY UP-TO-DATE AVAILABLE AGE
nginx-web 1/1 1 1 4m24s

comlab304pc@dellaio304:~$ kubectl get pods
NAME READY STATUS RESTARTS AGE
nginx-web-5b757f798d-gpxb6 1/1 Running 0 4m39s
comlab304pc@dellaio304:~$
```

```
Activities Terminal Mar 26 13:49
NAME pod/nginx-web-5b757f798d-gpxb6 READY STATUS RESTARTS AGE
service/kubernet... ClusterIP 10.96.0.1 <none> 443/TCP 4m
service/nginx-web NodePort 10.186.91.23 <none> 80:31852/TCP 21s
comlab384pc9gdel...$ minikube addons list
+-----+-----+-----+-----+
| ADDON NAME | PROFILE | STATUS | MAINTAINER |
+-----+-----+-----+-----+
| ambassador | minikube | disabled | 3rd party (Ambassador) |
| auto-pause | minikube | disabled | minikube |
| cloud-spanner | minikube | disabled | Google |
| csi-hostpath-driver | minikube | disabled | Kubernetes |
| dashboard | minikube | disabled | Kubernetes |
| default-storageclass | minikube | enabled | Kubernetes |
| efk | minikube | disabled | 3rd party (Elastic) |
| freshpod | minikube | disabled | Google |
| gcp-auth | minikube | disabled | Google |
| gvisor | minikube | disabled | minikube |
| headlamp | minikube | disabled | 3rd party (kinvolk.io) |
| helm-tiller | minikube | disabled | 3rd party (Helm) |
| inaccel | minikube | disabled | 3rd party (Inaccel) |
| ingress | minikube | disabled | [info@inaccel.com] |
| ingress-dns | minikube | disabled | Kubernetes |
| inspektor-gadget | minikube | disabled | minikube |
| istio | minikube | disabled | 3rd party (Inspektor-gadget.io) |
| istio-provisioner | minikube | disabled | 3rd party (Istio) |
| kong | minikube | disabled | 3rd party (Kong HQ) |
| kube-flow | minikube | disabled | 3rd party |
| kubeflow | minikube | disabled | 3rd party (KubeVirt) |
| logviewer | minikube | disabled | 3rd party (unknown) |
| metallb | minikube | disabled | 3rd party (MetalLB) |
| metrics-server | minikube | disabled | Kubernetes |
| nvidia-device-plugin | minikube | disabled | 3rd party (NVIDIA) |
| nvidia-driver-installer | minikube | disabled | 3rd party (NVIDIA) |
| nvidia-gpu-device-plugin | minikube | disabled | 3rd party (Operator Framework) |
| oln | minikube | disabled | 3rd party (unknown) |
| pod-security-policy | minikube | disabled | 3rd party (unknown) |
| portainer | minikube | disabled | 3rd party (Portainer.io) |
| registry | minikube | disabled | minikube |
| registry-allases | minikube | disabled | 3rd party (unknown) |
| registry-creds | minikube | disabled | 3rd party (UPMC Enterprises) |
| storage-provisioner | minikube | disabled | minikube |
| storage-provisioner-gluster | minikube | disabled | 3rd party (Gluster) |
| storage-provisioner-rancher | minikube | disabled | 3rd party (Rancher) |
| volumesnapshots | minikube | disabled | Kubernetes |
+-----+-----+-----+-----+
comlab384pc9gdel...$ minikube addons enable dashboard
dashboard is an add-on maintained by Kubernetes. For any concerns contact minikube on GitHub.
You can view the list of minikube maintainers at: https://github.com/kubernetes/minikube/blob/master/OWNERS
■ Using image docker.io/kubernetes/dashboard:v2.7.0
■ Using image docker.io/kubernetes/metrics-server:v1.0.8
■ Some dashboard features require the metrics-server add-on. To enable all features please run:
minikube addons enable metrics-server

Activities Terminal Mar 26 13:49
major: "1"
minor: "29"
platform: linux/amd64
kustomizeVersion: v5.0.4-0.20230601165947-6cebf396ce3

The connection to the server localhost:8080 was refused - did you specify the right host or port?
comlab384pc9gdel...$ minikube start --driver=docker
minikube v1.32.0 on Ubuntu 22.04
Using the docker driver based on user configuration
Using Docker driver with root privileges
Starting control plane node minikube in cluster minikube
Pulling base image ...
Creating docker container (CPU=2, Memory=2200MB) ...
Preparing Kubernetes v1.28.3 on Docker 24.0.7 ...
■ Generating certificates and keys ...
■ Booting up control plane ...
■ Configuring RBAC rules ...
■ Configuring bridge CNI (Container Networking Interface) ...
■ Using image gcr.io/k8s-minikube/storage-provisioner:v5
■ Verifying Kubernetes components...
Enabled addons: storage-provisioner, default-storageclass
Done! kubectll is now configured to use "minikube" cluster and "default" namespace by default
comlab384pc9gdel...$ minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured
comlab384pc9gdel...$ kubectll get nodes
NAME STATUS ROLES AGE VERSION
minikube Ready control-plane 00s v1.28.3
comlab384pc9gdel...$ kubectll cluster-info
Kubernetes control plane is running at https://192.168.49.2:8443
CoreDNS is running at https://192.168.49.2:8443/api/v1/namespaces/kube-system/services/kube-dns:dns/proxy

To further debug and diagnose cluster problems, use 'kubectll cluster-info dump'.
comlab384pc9gdel...$ ^[[200-kubectll create deployment nginx-web --image=nginx-
kubectll: command not found
comlab384pc9gdel...$ kubectll create deployment nginx-web --image=nginx-
deployment.apps/nginx-web created
comlab384pc9gdel...$ kubectll expose deployment nginx-web --type NodePort --port=80
service/nginx-web exposed
comlab384pc9gdel...$ kubectll get deployment,pod,svc
NAME READY UP-TO-DATE AVAILABLE AGE
deployment.apps/nginx-web 1/1 1 1 45s
comlab384pc9gdel...$ kubectll get pods
NAME READY STATUS RESTARTS AGE
pod/nginx-web-5b757f798d-gpxb6 1/1 Running 0 44s
comlab384pc9gdel...$ minikube addons list
+-----+-----+-----+-----+
| ADDON NAME | PROFILE | STATUS | MAINTAINER |
+-----+-----+-----+-----+
| ambassador | minikube | disabled | 3rd party (Ambassador) |
| auto-pause | minikube | disabled | minikube |
| cloud-spanner | minikube | disabled | Google |
| csi-hostpath-driver | minikube | disabled | Kubernetes |
| dashboard | minikube | disabled | Kubernetes |
| default-storageclass | minikube | enabled | Kubernetes |
| efk | minikube | disabled | 3rd party (Elastic) |
| freshpod | minikube | disabled | Google |
| gcp-auth | minikube | disabled | Google |
| gvisor | minikube | disabled | minikube |
| headlamp | minikube | disabled | 3rd party (kinvolk.io) |
| helm-tiller | minikube | disabled | 3rd party (Helm) |
| inaccel | minikube | disabled | 3rd party (Inaccel) |
| ingress | minikube | disabled | [info@inaccel.com] |
| ingress-dns | minikube | disabled | Kubernetes |
| inspektor-gadget | minikube | disabled | minikube |
| istio | minikube | disabled | 3rd party (Inspektor-gadget.io) |
| istio-provisioner | minikube | disabled | 3rd party (Istio) |
| kong | minikube | disabled | 3rd party (Kong HQ) |
| kube-flow | minikube | disabled | 3rd party |
| kubeflow | minikube | disabled | 3rd party (KubeVirt) |
| logviewer | minikube | disabled | 3rd party (unknown) |
| metallb | minikube | disabled | 3rd party (MetalLB) |
| metrics-server | minikube | disabled | Kubernetes |
| nvidia-device-plugin | minikube | disabled | 3rd party (NVIDIA) |
| nvidia-driver-installer | minikube | disabled | 3rd party (NVIDIA) |
| nvidia-gpu-device-plugin | minikube | disabled | 3rd party (Operator Framework) |
| oln | minikube | disabled | 3rd party (unknown) |
| pod-security-policy | minikube | disabled | 3rd party (unknown) |
| portainer | minikube | disabled | 3rd party (Portainer.io) |
| registry | minikube | disabled | minikube |
| registry-allases | minikube | disabled | 3rd party (unknown) |
| registry-creds | minikube | disabled | 3rd party (UPMC Enterprises) |
| storage-provisioner | minikube | disabled | minikube |
| storage-provisioner-gluster | minikube | disabled | 3rd party (Gluster) |
| storage-provisioner-rancher | minikube | disabled | 3rd party (Rancher) |
| volumesnapshots | minikube | disabled | Kubernetes |
+-----+-----+-----+-----+
```

```
Activities Terminal Mar 26 13:49
comlab304pc9@dellalo304: ~

# docker.service - Docker Application Container Engine
Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset:
Active: active (running) since Tue 2024-03-26 13:23:51 IST; 11min ago
TriggeredBy: ● docker.socket
Docs: https://docs.docker.com
Main PID: 1426 (dockerd)
Tasks: 14
Memory: 109.4M
CPU: 392ms
CGroup: /system.slice/docker.service
        └─1426 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/cont

Mar 26 13:23:47 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:47.150187180+0
Mar 26 13:23:47 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:47.290750211+0
Mar 26 13:23:48 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:48.350700135+0
Mar 26 13:23:48 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:48.583644897+0
Mar 26 13:23:49 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:49.821444095+0
Mar 26 13:23:50 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:50.108247766+0
Mar 26 13:23:50 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:50.831371168+0
Mar 26 13:23:50 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:50.908925635+0
Mar 26 13:23:51 dellalo304 systemd[1]: Started Docker Application Container Eng
Mar 26 13:23:51 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:51.366509593+0
-

comlab304pc9@dellalo304: ~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 89.3M 100 89.3M 0 0 7754k 0 0:00:11 0:00:11 --:-- 9652k
comlab304pc9@dellalo304: ~$ sudo install minikube-linux-amd64 /usr/local/bin/minikube
minikube version: v1.32.0
commit: 8220a6b95f0a4d757f72d7b1acef975f09512d
comlab304pc9@dellalo304: ~$ curl -LO https://storage.googleapis.com/kubernetes-release/release/`curl -s https://storage.googleapis.com/kubernetes-release/release/stable.txt`/bin/linux/amd64/kubectl
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 47.4M 100 47.4M 0 0 7839k 0 0:00:06 0:00:06 --:-- 10.8M
comlab304pc9@dellalo304: ~$ chmod +x kubectl
comlab304pc9@dellalo304: ~$ sudo mv kubectl /usr/local/bin/
comlab304pc9@dellalo304: ~$ kubectl version -o yaml
clientVersion:
  buildDate: "2024-03-15T00:08:19Z"
  compiler: gc
  gitCommit: d813025b7cd706db5bc7388921be03071e1a492d
  gitTreeState: clean
  gitVersion: v1.29.3
  goVersion: go1.21.8
  major: "1"
  minor: "29"
  platform: linux/amd64
kustomizeVersion: v5.0.4-0.20230601165947-0cebf390ce3

The connection to the server localhost:8080 was refused - did you specify the right host or port?
comlab304pc9@dellalo304: ~$ minikube start --driver=docker
minikube v1.32.0 on Ubuntu 22.04

major: "1"
minor: "29"
platform: linux/amd64
kustomizeVersion: v5.0.4-0.20230601165947-0cebf390ce3

The connection to the server localhost:8080 was refused - did you specify the right host or port?
comlab304pc9@dellalo304: ~$ minikube start --driver=docker
minikube v1.32.0 on Ubuntu 22.04
Using the docker driver based on user configuration
Using Docker driver with root privileges
Starting control plane node minikube in cluster minikube
Pulling base image ...
Creating docker container (CPU=2, Memory=2200MB) ...
Preparing Kubernetes v1.28.3 on Docker 24.0.7 ...
  Generating certificates and keys ...
  Booting up control plane ...
  Configuring RBAC rules ...
  Configuring bridge CNI (Container Networking Interface) ...
  Using image gcr.io/k8s-minikube/storage-provisioner:v5
  Verifying Kubernetes components...
  Enabled addons: storage-provisioner, default-storageclass
Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
comlab304pc9@dellalo304: ~$ minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured

comlab304pc9@dellalo304: ~$ kubectl get nodes
NAME STATUS ROLES AGE VERSION
minikube Ready control-plane 00s v1.28.3
comlab304pc9@dellalo304: ~$ kubectl cluster-info
Kubernetes control plane is running at https://192.168.49.2:8443
CoreDNS is running at https://192.168.49.2:8443/api/v1/namespaces/kube-system/services/kube-dns:dns/proxy

To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.
comlab304pc9@dellalo304: ~$ kubectl create deployment nginx-web --image=nginx
kubectl: command not found
comlab304pc9@dellalo304: ~$ kubectl create deployment nginx-web --image=nginx
deployment.apps/nginx-web created
comlab304pc9@dellalo304: ~$ kubectl expose deployment nginx-web --type NodePort --port=80
service/nginx-web exposed
comlab304pc9@dellalo304: ~$ kubectl get deployment,pod,svc
NAME READY UP-TO-DATE AVAILABLE AGE
deployment.apps/nginx-web 1/1 1 1 45s
comlab304pc9@dellalo304: ~$ kubectl get deployment,pod,svc
NAME READY STATUS RESTARTS AGE
pod/nginx-web-5b757f798d-gpxb6 1/1 Running 0 44s
comlab304pc9@dellalo304: ~$ kubectl get deployment,pod,svc
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
service/kubernetes ClusterIP 10.96.0.1 <none> 443/TCP 4m
service/nginx-web NodePort 10.106.91.23 <none> 80:31852/TCP 21s
comlab304pc9@dellalo304: ~$
```

```
Activities Terminal Mar 26 13:43 comlab304pc9@dellalo304 -  
  
minikube version: v1.32.0  
commit: 822a0eb95fa04d57f72d7b1acef975f050512d  
comlab304pc9@dellalo304: $ curl -LO https://storage.googleapis.com/kubernetes-release/release/`curl -s https://storage.googleapis.com/kubernetes-release/release/stable.txt`/bin/linux/amd64/kubectl  
% Total % Received % Xferd Average Speed Time Time Current  
100 47.4M 100 47.4M 0 0 7839k 0 0:00:00 0:00:00 --:--:-- 10.8M  
comlab304pc9@dellalo304: $ chmod +x kubectl  
comlab304pc9@dellalo304: $ sudo mv kubectl /usr/local/bin/  
comlab304pc9@dellalo304: $ kubectl version -o yaml  
clientVersion:  
  buildDate: "2024-03-15T00:08:19Z"  
  compiler: gc  
  gitCommit: 6813625b7cd766db5bc7388921be03071e1a492d  
  gitTreeState: clean  
  gitVersion: v1.29.3  
  goVersion: go1.21.8  
  major: "1"  
  minor: "29"  
  platform: linux/amd64  
kustomizeVersion: v5.0.4-0.20230601165947-0cebf390ce3  
  
The connection to the server localhost:8080 was refused - did you specify the right host or port?  
comlab304pc9@dellalo304: $ minikube start --driver=docker  
minikube v1.32.0 on Ubuntu 22.04  
Using the docker driver based on user configuration  
Using Docker driver with root privileges  
Starting control plane node minikube in cluster minikube  
Pulling base image ...  
Creating docker container (CPUs=2, Memory=2200MB) ...  
Preparing Kubernetes v1.29.3 on Docker 24.0.7 ...  
  Generating certificates and keys ...  
  Booting up control plane ...  
  Configuring RBAC rules ...  
  Configuring bridge CNI (Container Networking Interface) ...  
  Using image gcr.io/k8s-minikube/storage-provisioner:v5  
  Verifying Kubernetes components ...  
  Enabled addons: storage-provisioner, default-storageclass  
  Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default  
comlab304pc9@dellalo304: $ minikube status  
minikube  
  type: Control Plane  
  host: Running  
  kubelet: Running  
  apiserver: Running  
  kubeconfig: Configured  
  
comlab304pc9@dellalo304: $ kubectl get nodes  
NAME STATUS ROLES AGE VERSION  
minikube Ready control-plane 89s v1.29.3  
comlab304pc9@dellalo304: $ kubectl cluster-info  
Kubernetes control plane is running at https://192.168.49.2:8443  
CoreDNS is running at https://192.168.49.2:8443/api/v1/namespaces/kube-system/services/kube-dns:proxy  
  
To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.  
comlab304pc9@dellalo304: $  
  
Activities Terminal Mar 26 13:43 comlab304pc9@dellalo304 -  
  
@docker.service - Docker Application Container Engine  
Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset:   
Active: active (running) since Tue 2024-03-26 13:23:51 IST; 11min ago  
TriggeredBy: @docker.socket  
Docs: https://docs.docker.com  
Main PID: 1426 (dockerd)  
Tasks: 14  
Memory: 109.4M  
CPU: 392ms  
CGroup: /system.slice/docker.service  
         └─1426 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/cont  
  
Mar 26 13:23:47 dellalo304 dockerd[1426]: tline="2024-03-26T13:23:47.156187180+0  
Mar 26 13:23:47 dellalo304 dockerd[1426]: tline="2024-03-26T13:23:47.290750211+0  
Mar 26 13:23:48 dellalo304 dockerd[1426]: tline="2024-03-26T13:23:48.350700135+0  
Mar 26 13:23:48 dellalo304 dockerd[1426]: tline="2024-03-26T13:23:48.583644897+0  
Mar 26 13:23:49 dellalo304 dockerd[1426]: tline="2024-03-26T13:23:49.021444069+0  
Mar 26 13:23:50 dellalo304 dockerd[1426]: tline="2024-03-26T13:23:50.108247766+0  
Mar 26 13:23:50 dellalo304 dockerd[1426]: tline="2024-03-26T13:23:50.831371168+0  
Mar 26 13:23:50 dellalo304 dockerd[1426]: tline="2024-03-26T13:23:50.908925635+0  
Mar 26 13:23:51 dellalo304 systemd[1]: Started Docker Application Container Eng  
Mar 26 13:23:51 dellalo304 dockerd[1426]: tline="2024-03-26T13:23:51.366509503+0  
~  
  
comlab304pc9@dellalo304: $ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64  
% Total % Received % Xferd Average Speed Time Time Current  
100 89.3M 100 89.3M 0 0 7754k 0 0:00:11 0:00:11 --:--:-- 9652k  
comlab304pc9@dellalo304: $ sudo install minikube-linux-amd64 /usr/local/bin/minikube  
minikube version: v1.32.0  
commit: 822a0eb95fa04d57f72d7b1acef975f050512d  
comlab304pc9@dellalo304: $ curl -LO https://storage.googleapis.com/kubernetes-release/release/`curl -s https://storage.googleapis.com/kubernetes-release/release/stable.txt`/bin/linux/amd64/kubectl  
% Total % Received % Xferd Average Speed Time Time Current  
100 47.4M 100 47.4M 0 0 7839k 0 0:00:00 0:00:00 --:--:-- 10.8M  
comlab304pc9@dellalo304: $ chmod +x kubectl  
comlab304pc9@dellalo304: $ sudo mv kubectl /usr/local/bin/  
comlab304pc9@dellalo304: $ kubectl version -o yaml  
clientVersion:  
  buildDate: "2024-03-15T00:08:19Z"  
  compiler: gc  
  gitCommit: 6813625b7cd766db5bc7388921be03071e1a492d  
  gitTreeState: clean  
  gitVersion: v1.29.3  
  goVersion: go1.21.8  
  major: "1"  
  minor: "29"  
  platform: linux/amd64  
kustomizeVersion: v5.0.4-0.20230601165947-0cebf390ce3  
  
The connection to the server localhost:8080 was refused - did you specify the right host or port?  
comlab304pc9@dellalo304: $ minikube start --driver=docker  
minikube v1.32.0 on Ubuntu 22.04  
Using the docker driver based on user configuration  
Using Docker driver with root privileges
```



```
Activities Terminal Mar 26 13:38 complab304pc9@dellalo304 -

docker.service - Docker Application Container Engine
Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset:
Active: active (running) since Tue 2024-03-26 13:23:51 IST; 11min ago
TriggeredBy: ● docker.socket
Docs: https://docs.docker.com
Main PID: 1426 (dockerd)
Tasks: 14
Memory: 109.4M
CPU: 392ms
CGroup: /system.slice/docker.service
└─1426 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/cont

Mar 26 13:23:47 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:47.158187180+0
Mar 26 13:23:47 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:47.200750211+0
Mar 26 13:23:48 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:48.350700135+0
Mar 26 13:23:48 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:48.583644897+0
Mar 26 13:23:49 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:49.821444983+0
Mar 26 13:23:50 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:50.108247766+0
Mar 26 13:23:50 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:50.831371108+0
Mar 26 13:23:50 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:50.903925635+0
Mar 26 13:23:51 dellalo304 systemd[1]: Started Docker Application Container Eng
Mar 26 13:23:51 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:51.366509583+0
-

complab304pc9@dellalo304:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
% Total % Received % Xferd Average Speed Time Time Time Current
0 0 0 0 0 0 0 0
100 89.3M 100 89.3M 0 0 7754k 0 0:00:11 0:00:11 --:-- 9652k
complab304pc9@dellalo304:~$
```

```
Activities Terminal Mar 26 13:38 complab304pc9@dellalo304 -

docker.service - Docker Application Container Engine
Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset:
Active: active (running) since Tue 2024-03-26 13:23:51 IST; 11min ago
TriggeredBy: ● docker.socket
Docs: https://docs.docker.com
Main PID: 1426 (dockerd)
Tasks: 14
Memory: 109.4M
CPU: 392ms
CGroup: /system.slice/docker.service
└─1426 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/cont

Mar 26 13:23:47 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:47.158187180+0
Mar 26 13:23:47 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:47.200750211+0
Mar 26 13:23:48 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:48.350700135+0
Mar 26 13:23:48 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:48.583644897+0
Mar 26 13:23:49 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:49.821444983+0
Mar 26 13:23:50 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:50.108247766+0
Mar 26 13:23:50 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:50.831371108+0
Mar 26 13:23:50 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:50.903925635+0
Mar 26 13:23:51 dellalo304 systemd[1]: Started Docker Application Container Eng
Mar 26 13:23:51 dellalo304 dockerd[1426]: ttime="2024-03-26T13:23:51.366509583+0
-

complab304pc9@dellalo304:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
% Total % Received % Xferd Average Speed Time Time Time Current
0 0 0 0 0 0 0 0
52 89.3M 52 46.9M 0 0 6584k 0 0:00:13 0:00:07 0:00:06 9011k
```

```
Activities Terminal Mar 26 13:36 Screenshot captured You can paste the image from the clipboard. Active: active (running) since Tue 2024-03-26 13:23:51 IST; 11min ago TriggeredBy: @ docker.socket Docs: https://docs.docker.com Main PID: 1426 (dockerd) Tasks: 14 Memory: 109.4M CPU: 392ms CGroup: /system.slice/docker.service ──1426 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/cont... Mar 26 13:23:47 dellato304 dockerd[1426]: tline="2024-03-26T13:23:47.150187180+05:30" Mar 26 13:23:47 dellato304 dockerd[1426]: tline="2024-03-26T13:23:47.200750211+05:30" Mar 26 13:23:48 dellato304 dockerd[1426]: tline="2024-03-26T13:23:48.350700135+05:30" Mar 26 13:23:48 dellato304 dockerd[1426]: tline="2024-03-26T13:23:48.583644807+05:30" Mar 26 13:23:49 dellato304 dockerd[1426]: tline="2024-03-26T13:23:49.821444985+05:30" Mar 26 13:23:50 dellato304 dockerd[1426]: tline="2024-03-26T13:23:50.188247766+05:30" Mar 26 13:23:50 dellato304 dockerd[1426]: tline="2024-03-26T13:23:50.831371108+05:30" Mar 26 13:23:50 dellato304 dockerd[1426]: tline="2024-03-26T13:23:50.983925635+05:30" Mar 26 13:23:51 dellato304 systemd[1]: Started Docker Application Container Engine. Mar 26 13:23:51 dellato304 dockerd[1426]: tline="2024-03-26T13:23:51.366599503+05:30" tline="1:22/22 (END)...skipping..." ●docker.service - Docker Application Container Engine Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled) Active: active (running) since Tue 2024-03-26 13:23:51 IST; 11min ago TriggeredBy: @ docker.socket Docs: https://docs.docker.com Main PID: 1426 (dockerd) Tasks: 14 Memory: 109.4M CPU: 392ms CGroup: /system.slice/docker.service ──1426 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/cont... Mar 26 13:23:47 dellato304 dockerd[1426]: tline="2024-03-26T13:23:47.150187180+05:30" level-info msg="Starting up" Mar 26 13:23:47 dellato304 dockerd[1426]: tline="2024-03-26T13:23:47.200750211+05:30" level-info msg="detected 127.0.0.53 nameserver, assuming systemd-resolved, so using resolv.conf: /run/systemd/resolv/r... Mar 26 13:23:48 dellato304 dockerd[1426]: tline="2024-03-26T13:23:48.350700135+05:30" level-info msg="[graphdriver] using prior storage driver: overlay2" Mar 26 13:23:48 dellato304 dockerd[1426]: tline="2024-03-26T13:23:48.583644807+05:30" level-info msg="Loading containers: start." Mar 26 13:23:49 dellato304 dockerd[1426]: tline="2024-03-26T13:23:49.821444985+05:30" level-info msg="Default bridge (docker0) is assigned with an IP address 172.17.0.0/16. Daemon option --bip can be used to" Mar 26 13:23:50 dellato304 dockerd[1426]: tline="2024-03-26T13:23:50.188247766+05:30" level-info msg="Loading containers: done." Mar 26 13:23:50 dellato304 dockerd[1426]: tline="2024-03-26T13:23:50.831371108+05:30" level-info msg="Docker daemon" commit=8b79278 containerd-snapshotter=false storage-driver=overlay2 version=26.0.0 Mar 26 13:23:50 dellato304 dockerd[1426]: tline="2024-03-26T13:23:50.983925635+05:30" level-info msg="Daemon has completed initialization" Mar 26 13:23:51 dellato304 dockerd[1426]: tline="2024-03-26T13:23:51.366599503+05:30" level-info msg="API listen on /run/docker.sock" Activities Terminal Mar 26 13:36 comlab304pc@9@dellato304:~$ sudo apt install ca-certificates curl gnupg wget apt-transport-https -y $: command not found comlab304pc@9@dellato304:~$ sudo apt install ca-certificates curl gnupg wget apt-transport-https -y (sudo) password for comlab304pc: Reading package lists... Done Building dependency tree... Done Reading state information... Done wget is already the newest version (1.21.2-2ubuntu1). ca-certificates is already the newest version (20230311ubuntu2.04.1). curl is already the newest version (7.81.0-1ubuntu1.15). gnupg is already the newest version (2.2.27-3ubuntu2.1). apt-transport-https is already the newest version (2.4.11). 0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded. comlab304pc@9@dellato304:~$ sudo install -m 0755 -d /etc/apt/keyrings comlab304pc@9@dellato304:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg File /etc/apt/keyrings/docker.gpg exists. Overwrite? (y/N) y comlab304pc@9@dellato304:~$ sudo chmod a+r /etc/apt/keyrings/docker.gpg comlab304pc@9@dellato304:~$ echo \ "deb [arch=$(dpkg --print-architecture)] signed-by=/etc/apt/keyrings/docker.gpg https://download.docker.com/linux/ubuntu \ $1 /etc/os-release && echo "VERSION_CODENAME" stable" | \ sudo tee /etc/apt/sources.list.d/docker.list > /dev/null comlab304pc@9@dellato304:~$ sudo apt install -y docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin Reading package lists... Done Building dependency tree... Done Reading state information... Done containerd.io is already the newest version (1.6.28-2). docker-buildx-plugin is already the newest version (0.13.1-1-ubuntu.22.04-jammy). docker-ce-cli is already the newest version (5:26.0.0-1-ubuntu.22.04-jammy). docker-ce is already the newest version (5:26.0.0-1-ubuntu.22.04-jammy). docker-compose-plugin is already the newest version (2.25.0-1-ubuntu.22.04-jammy). 0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded. comlab304pc@9@dellato304:~$ sudo usermod -s docker $USER comlab304pc@9@dellato304:~$ newgrp docker comlab304pc@9@dellato304:~$ systemctl status docker ●docker.service - Docker Application Container Engine Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: Active: active (running) since Tue 2024-03-26 13:23:51 IST; 11min ago TriggeredBy: @ docker.socket Docs: https://docs.docker.com Main PID: 1426 (dockerd) Tasks: 14 Memory: 109.4M CPU: 392ms CGroup: /system.slice/docker.service ──1426 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/cont... Mar 26 13:23:47 dellato304 dockerd[1426]: tline="2024-03-26T13:23:47.150187180+05:30" Mar 26 13:23:47 dellato304 dockerd[1426]: tline="2024-03-26T13:23:47.200750211+05:30" Mar 26 13:23:48 dellato304 dockerd[1426]: tline="2024-03-26T13:23:48.350700135+05:30" Mar 26 13:23:48 dellato304 dockerd[1426]: tline="2024-03-26T13:23:48.583644807+05:30" Mar 26 13:23:49 dellato304 dockerd[1426]: tline="2024-03-26T13:23:49.821444985+05:30" Mar 26 13:23:50 dellato304 dockerd[1426]: tline="2024-03-26T13:23:50.188247766+05:30" Mar 26 13:23:50 dellato304 dockerd[1426]: tline="2024-03-26T13:23:50.831371108+05:30" Mar 26 13:23:50 dellato304 dockerd[1426]: tline="2024-03-26T13:23:50.983925635+05:30" Mar 26 13:23:51 dellato304 systemd[1]: Started Docker Application Container Engine
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complab304pc9@dellaio304: ~  
  
inerd.sock  
  
Mar 26 13:23:47 dellaio304 dockerd[1426]: time="2024-03-26T13:23:47.150187180+05:30" level=info msg="Starting up"  
Mar 26 13:23:47 dellaio304 dockerd[1426]: time="2024-03-26T13:23:47.200750211+05:30" level=info msg="detected 127.0.0.53 nameserver, assuming systemd-resolved, so using resolv.conf: /run/systemd/resolve/resolv.conf"  
Mar 26 13:23:48 dellaio304 dockerd[1426]: time="2024-03-26T13:23:48.350700135+05:30" level=info msg="[graphdriver] using prior storage driver: overlay2"  
Mar 26 13:23:48 dellaio304 dockerd[1426]: time="2024-03-26T13:23:48.583644897+05:30" level=info msg="Loading containers: start."  
Mar 26 13:23:49 dellaio304 dockerd[1426]: time="2024-03-26T13:23:49.821444985+05:30" level=info msg="Default bridge (docker0) is assigned with an IP address 172.17.0.0/16. Daemon option --bip can be used to set a bridge IP address"  
Mar 26 13:23:50 dellaio304 dockerd[1426]: time="2024-03-26T13:23:50.188247766+05:30" level=info msg="Loading containers: done."  
Mar 26 13:23:50 dellaio304 dockerd[1426]: time="2024-03-26T13:23:50.831371168+05:30" level=info msg="Docker daemon" commit=8b79278 containerd-snapshotter=false storage-driver=overlay2 version=26.0.0  
Mar 26 13:23:50 dellaio304 dockerd[1426]: time="2024-03-26T13:23:50.903925635+05:30" level=info msg="Daemon has completed initialization"  
Mar 26 13:23:51 dellaio304 systemd[1]: Started Docker Application Container Engine.  
Mar 26 13:23:51 dellaio304 dockerd[1426]: time="2024-03-26T13:23:51.366509503+05:30" level=info msg="API listen on /var/run/docker.sock"
```