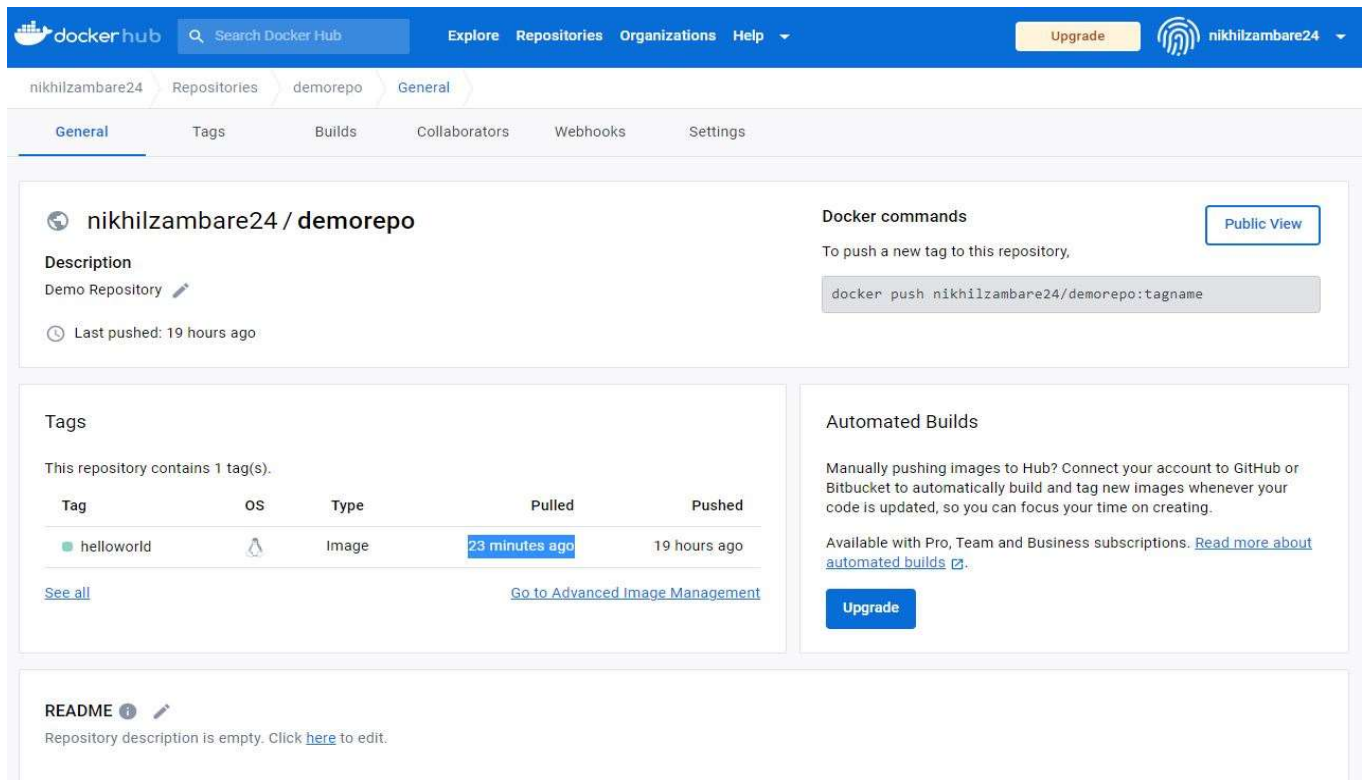


- Kubernetes Error Resolve & Basic commands

// Firstly, Pulled an image having tag helloworld from my repository on docker hub account



The screenshot shows the Docker Hub interface for a repository named 'nikhilzambare24 / demorepo'. The page includes a search bar, navigation tabs (General, Tags, Builds, Collaborators, Webhooks, Settings), and a description of the repository. The 'Tags' section shows a single tag 'helloworld' with a pull time of '23 minutes ago' and a push time of '19 hours ago'. The 'Automated Builds' section provides information on connecting to GitHub or Bitbucket for automated builds. The 'README' section is currently empty.

nikhilzambare24 / demorepo

Description
Demo Repository
Last pushed: 19 hours ago

Docker commands
To push a new tag to this repository.
`docker push nikhilzambare24/demorepo:tagname`

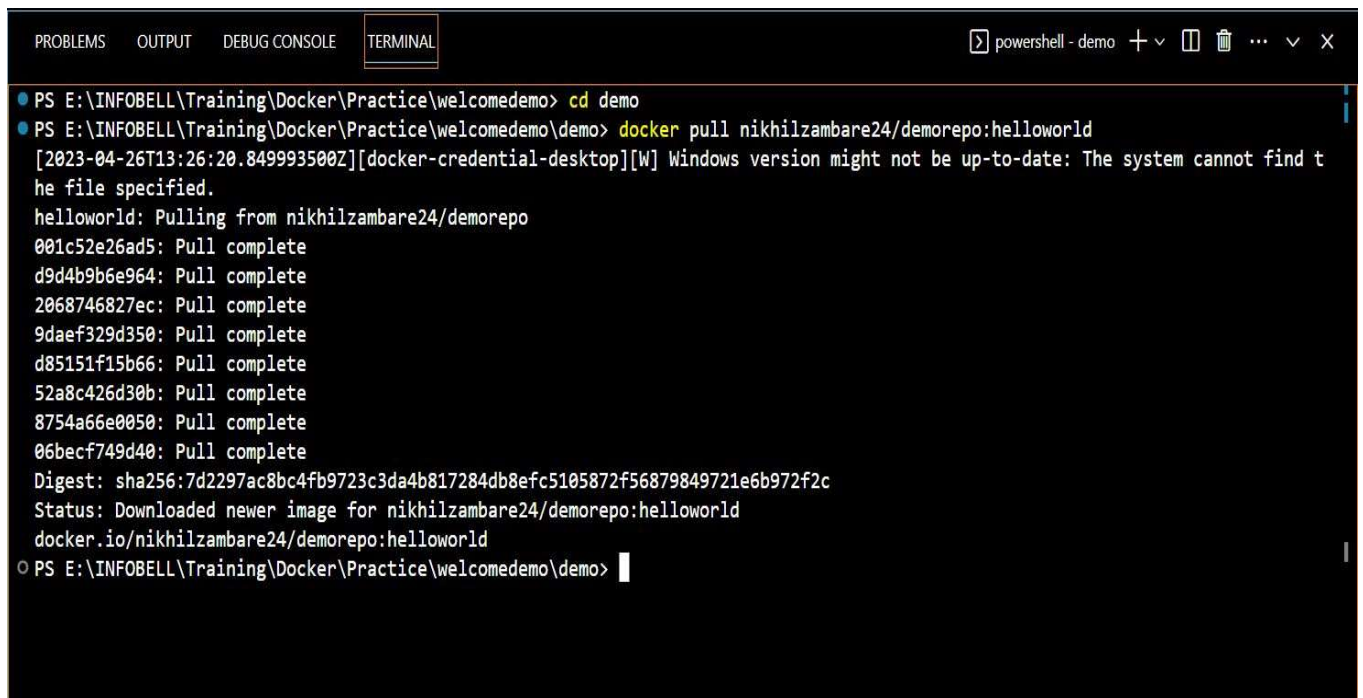
Tags
This repository contains 1 tag(s).

Tag	OS	Type	Pulled	Pushed
helloworld		Image	23 minutes ago	19 hours ago

[See all](#) [Go to Advanced Image Management](#)

Automated Builds
Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.
Available with Pro, Team and Business subscriptions. [Read more about automated builds](#)

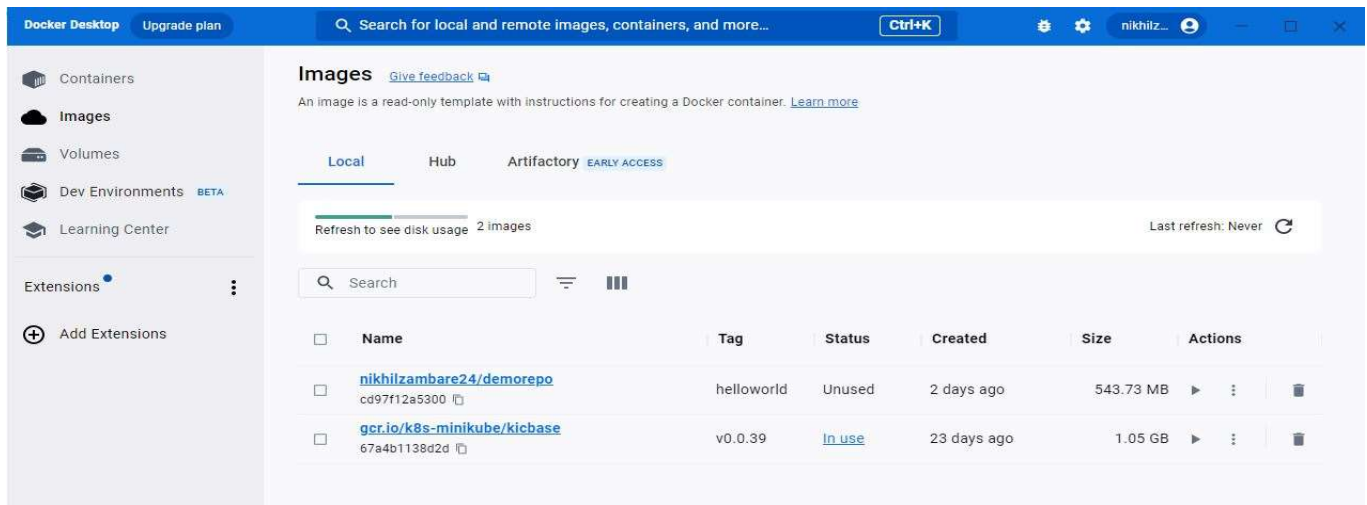
README
Repository description is empty. Click [here](#) to edit.



The screenshot shows a PowerShell terminal window with the following commands and output:

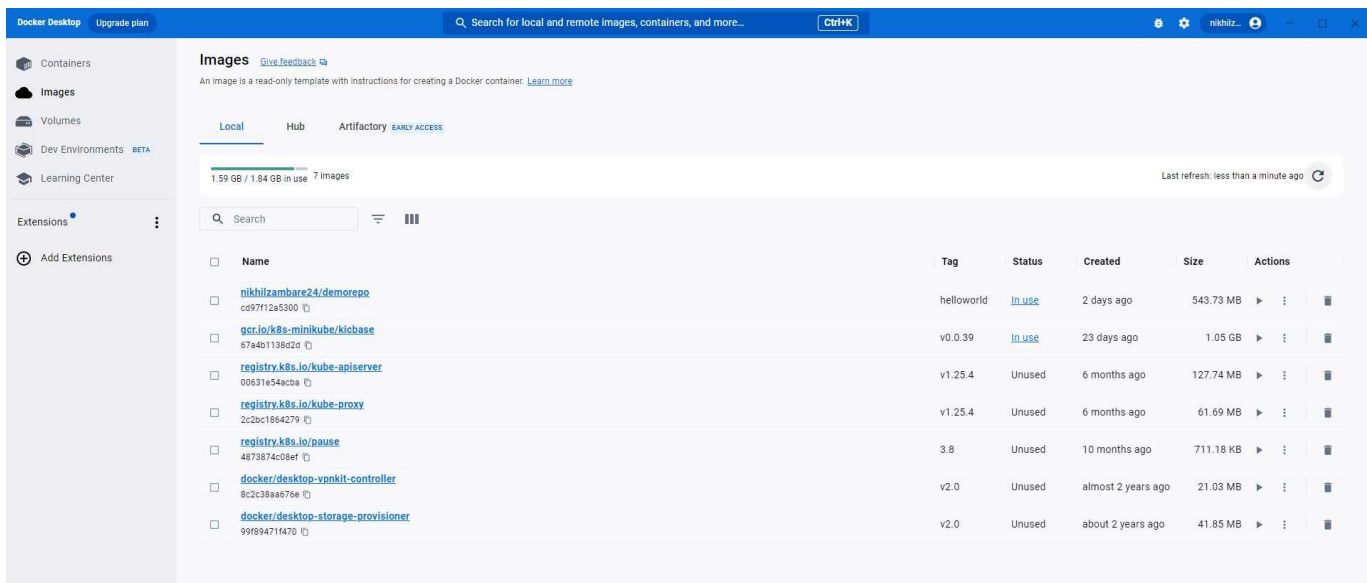
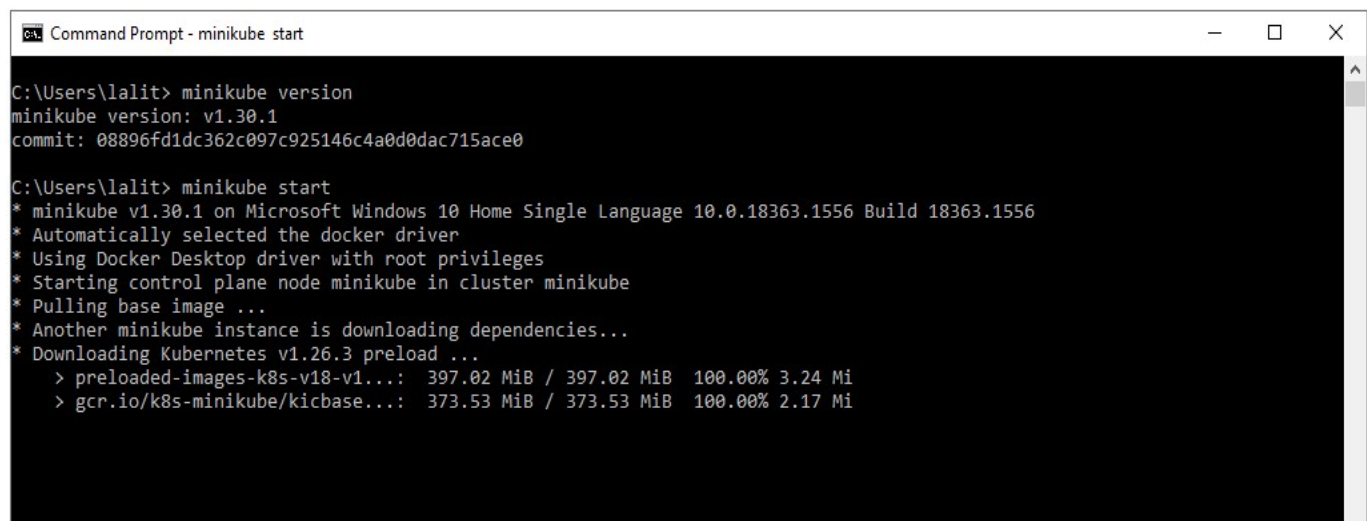
```
PS E:\INFOBELL\Training\Docker\Practice\welcomedemo> cd demo
PS E:\INFOBELL\Training\Docker\Practice\welcomedemo\demo> docker pull nikhilzambare24/demorepo:helloworld
[2023-04-26T13:26:20.849993500Z][docker-credential-desktop][W] Windows version might not be up-to-date: The system cannot find the file specified.
helloworld: Pulling from nikhilzambare24/demorepo
001c52e26ad5: Pull complete
d9d4b9b6e964: Pull complete
2068746827ec: Pull complete
9daef329d350: Pull complete
d85151f15b66: Pull complete
52a8c426d30b: Pull complete
8754a66e0050: Pull complete
06becf749d40: Pull complete
Digest: sha256:7d2297ac8bc4fb9723c3da4b817284db8efc5105872f56879849721e6b972f2c
Status: Downloaded newer image for nikhilzambare24/demorepo:helloworld
docker.io/nikhilzambare24/demorepo:helloworld
PS E:\INFOBELL\Training\Docker\Practice\welcomedemo\demo>
```

// Image with tag helloworld reflected on Docker desktop after pulled



// to display the version of Minikube that is currently installed on your local machine

// to start a single-node Kubernetes cluster using Minikube on your local machine



// Encountered an error while performing minikube start

```
Command Prompt
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\lalit> minikube version
minikube version: v1.30.1
commit: 08896fd1dc362c097c925146c4a0d0dac715ace0

C:\Users\lalit> minikube start
* minikube v1.30.1 on Microsoft Windows 10 Home Single Language 10.0.18363.1556 Build 18363.1556
* Using the docker driver based on existing profile
* Starting control plane node minikube in cluster minikube
* Pulling base image ...
* Another minikube instance is downloading dependencies...
* docker "minikube" container is missing, will recreate.
* Creating docker container (CPUs=2, Memory=2200MB) ...
! Executing "docker ps -a --format {{.Names}}" took an unusually long time: 5.982949s
* Restarting the docker service may improve performance.
! StartHost failed, but will try again: recreate: creating host: create host timed out in 360.000000 seconds
! Executing "docker container inspect minikube --format={{.State.Status}}" took an unusually long time: 4.9681751s
* Restarting the docker service may improve performance.
* docker "minikube" container is missing, will recreate.
* Creating docker container (CPUs=2, Memory=2200MB) ...
* Failed to start docker container. Running "minikube delete" may fix it: recreate: creating host: create host timed out in 360.000000 seconds

X Exiting due to DRV_CREATE_TIMEOUT: Failed to start host: recreate: creating host: create host timed out in 360.000000 seconds
* Suggestion: Try 'minikube delete', and disable any conflicting VPN or firewall software
* Related issue: https://github.com/kubernetes/minikube/issues/7072
```

// Deleted the minikube generated (minikube delete)

```
Command Prompt

C:\Users\lalit>minikube delete
* Deleting "minikube" in docker ...
* Deleting container "minikube" ...
* Removing C:\Users\lalit\.minikube\machines\minikube ...
* Removed all traces of the "minikube" cluster.

C:\Users\lalit>
```

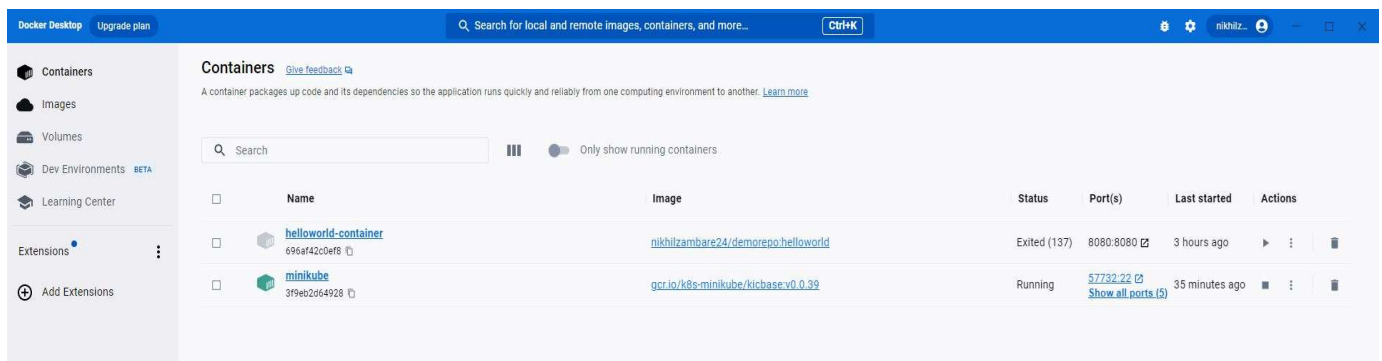
// After deletion tried to start minikube again

```
Command Prompt

C:\Users\lalit>minikube delete
* Deleting "minikube" in docker ...
* Deleting container "minikube" ...
* Removing C:\Users\lalit\.minikube\machines\minikube ...
* Removed all traces of the "minikube" cluster.

C:\Users\lalit> minikube start
* minikube v1.30.1 on Microsoft Windows 10 Home Single Language 10.0.18363.1556 Build 18363.1556
* Automatically selected the docker driver
* Using Docker Desktop driver with root privileges
* Starting control plane node minikube in cluster minikube
* Pulling base image ...
* Creating docker container (CPUs=2, Memory=2200MB) ...
! This container is having trouble accessing https://registry.k8s.io
! To pull new external images, you may need to configure a proxy: https://minikube.sigs.k8s.io/docs/reference/networking/proxy/
* Preparing Kubernetes v1.26.3 on Docker 23.0.2 ...
  - 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

C:\Users\lalit>
```



// to manage Kubectl's configuration file. This file contains information such as the cluster to connect to, the user to authenticate as, and the namespace to operate within.

```

C:\Users\lalit> kubectl config
Modify kubeconfig files using subcommands like "kubectl config set current-context my-context"

The loading order follows these rules:

  1. If the --kubeconfig flag is set, then only that file is loaded. The flag may only be set once and no merging takes place.
  2. If $KUBECONFIG environment variable is set, then it is used as a list of paths (normal path delimiting rules for your system). These paths are merged. When a value is modified, it is modified in the file that defines the stanza. When a value is created, it is created in the first file that exists. If no files in the chain exist, then it creates the last file in the list.
  3. Otherwise, ${HOME}/.kube/config is used and no merging takes place.

Available Commands:
  current-context    Display the current-context
  delete-cluster     Delete the specified cluster from the kubeconfig
  delete-context     Delete the specified context from the kubeconfig
  delete-user        Delete the specified user from the kubeconfig
  get-clusters        Display clusters defined in the kubeconfig
  get-contexts        Describe one or many contexts
  get-users           Display users defined in the kubeconfig
  rename-context     Rename a context from the kubeconfig file
  set                 Set an individual value in a kubeconfig file
  set-cluster         Set a cluster entry in kubeconfig
  set-context         Set a context entry in kubeconfig
  set-credentials    Set a user entry in kubeconfig
  unset              Unset an individual value in a kubeconfig file
  
```

// to create a new deployment in a Kubernetes cluster. A deployment is a Kubernetes resource that manages a set of replicas of a specified container image.

// to lists all the deployments in the Kubernetes cluster, regardless of the namespace they belong to.

```

C:\Users\lalit> kubectl create deployment printhello --image=nikhilzambare24/demorepo:helloworld
deployment.apps/printhello created

C:\Users\lalit> kubectl get deploy -A
NAMESPACE   NAME          READY   UP-TO-DATE   AVAILABLE   AGE
default     printhello    0/1      1             0           55s
kube-system  coredns       1/1      1             1           19m
  
```


// to create a Kubernetes Service that exposes the specified deployment to the cluster network.

```
Command Prompt

C:\Users\lalit> kubectl expose deploy printhello --type=ClusterIP --port=8080
service/printhello exposed

C:\Users\lalit> kubectl get deploy -A
NAMESPACE   NAME           READY   UP-TO-DATE   AVAILABLE   AGE
default     printhello     1/1     1            1           37m
kube-system  coredns        1/1     1            1           56m

C:\Users\lalit>
```

// to retrieve information about the pods that are currently running in the Kubernetes cluster.

```
Command Prompt

C:\Users\lalit> kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
printhello-cfd58fd56-1cf7g         1/1     Running   0          38m

C:\Users\lalit> kubectl get pod
NAME                                READY   STATUS    RESTARTS   AGE
printhello-cfd58fd56-1cf7g         1/1     Running   0          38m

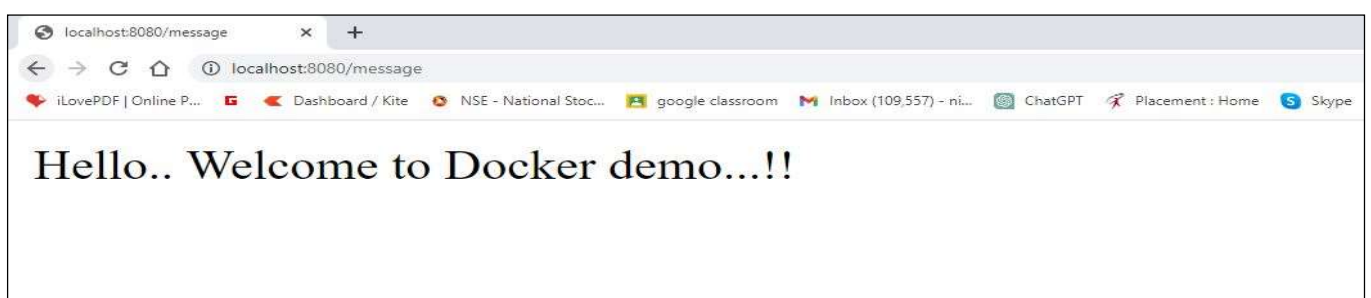
C:\Users\lalit> kubectl get pods -A
NAMESPACE   NAME                                READY   STATUS    RESTARTS   AGE
default     printhello-cfd58fd56-1cf7g         1/1     Running   0          40m
kube-system  coredns-787d4945fb-hzz89          1/1     Running   0          58m
kube-system  etcd-minikube                     1/1     Running   0          59m
kube-system  kube-apiserver-minikube           1/1     Running   0          59m
kube-system  kube-controller-manager-minikube  1/1     Running   2 (60m ago) 60m
kube-system  kube-proxy-92rtd                  1/1     Running   0          58m
kube-system  kube-scheduler-minikube           1/1     Running   0          59m
kube-system  storage-provisioner               1/1     Running   2 (30m ago) 57m

C:\Users\lalit>
```

// to create a secure tunnel between a local port on your machine and a specified port on a pod running in a Kubernetes cluster. This allows you to access the pod's services as if they were running on your local machine.

```
Command Prompt - kubectl port-forward printhello-cfd58fd56-1cf7g 8080:8080

C:\Users\lalit>
C:\Users\lalit> kubectl port-forward printhello-cfd58fd56-1cf7g 8080:8080
Forwarding from [::1]:8080 -> 8080
Handling connection for 8080
```



// to provide detailed information about the specified pod, including its name, namespace, IP address, start time, labels, annotations, status, containers, volumes, and events.

```
C:\Users\lalit> kubectl describe pod printhello-cfd58fd56-1cf7g
Name:          printhello-cfd58fd56-1cf7g
Namespace:     default
Priority:       0
Service Account: default
Node:          minikube/192.168.49.2
Start Time:    Thu, 27 Apr 2023 12:08:46 +0530
Labels:        app=printhello
               pod-template-hash=cfd58fd56
Annotations:   <none>
Status:        Running
IP:            10.244.0.3
IPs:           IP: 10.244.0.3
Controlled By: ReplicaSet/printhello-cfd58fd56
Containers:
  demorepo:
    Container ID:  docker://bfb9d3a21c6bb6bd68dd6682d3453d986648c1efa466af7dd5a1c4793c2f713c
    Image:          nikhilzambare24/demorepo:helloworld
    Image ID:       docker-pullable://nikhilzambare24/demorepo@sha256:7d2297ac8bc4fb9723c3da4b817284db8efc5105872f56879849721e6b972f2c
    Port:           <none>
    Host Port:      <none>
    State:          Running
      Started:      Thu, 27 Apr 2023 12:16:18 +0530
    Ready:          True
    Restart Count:  0
    Environment:    <none>
    Mounts:          <none>
```

// to show the logs for the demorepo container in the printhello-cfd58fd56-1cf7g pod

```
C:\Users\lalit> kubectl logs printhello-cfd58fd56-1cf7g -c demorepo

:: Spring Boot ::
(v2.7.11)

2023-04-27 06:46:23.498 INFO 1 --- [main] com.example.demo.DemoApplication : Starting DemoApplication v0.0.1-SNAPSHOT using Java 1.8.0_342 on printhello-cfd58fd56-1cf7g with PID 1 (/springboot-demo.jar started by root in /)
2023-04-27 06:46:23.583 INFO 1 --- [main] com.example.demo.DemoApplication : No active profile set, falling back to 1 default profile: "default"
2023-04-27 06:46:25.823 INFO 1 --- [main] o.s.b.w.e.tomcat.TomcatWebServer : Tomcat initialized with port(s): 8080 (http)
2023-04-27 06:46:25.845 INFO 1 --- [main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2023-04-27 06:46:25.846 INFO 1 --- [main] org.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/9.0.74]
2023-04-27 06:46:25.170 INFO 1 --- [main] o.a.c.c.c.[Tomcat].[/]           : Initializing Spring embedded WebApplicationContext
2023-04-27 06:46:25.170 INFO 1 --- [main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 1577 ms
2023-04-27 06:46:27.353 INFO 1 --- [main] o.s.b.w.e.tomcat.TomcatWebServer : Tomcat started on port(s): 8080 (http) with context path ''
2023-04-27 06:46:27.366 INFO 1 --- [main] com.example.demo.DemoApplication : Started DemoApplication in 7.75 seconds (JVM running for 8.489)
2023-04-27 07:24:31.895 INFO 1 --- [nio-8080-exec-1] o.a.c.c.c.[Tomcat].[/]           : Initializing Spring DispatcherServlet 'dispatcherServlet'
2023-04-27 07:24:31.897 INFO 1 --- [nio-8080-exec-1] o.s.web.servlet.DispatcherServlet : Initializing Servlet 'dispatcherServlet'
2023-04-27 07:24:31.903 INFO 1 --- [nio-8080-exec-1] o.s.web.servlet.DispatcherServlet : Completed initialization in 6 ms
```

// to scale up the deployment named printhello to 2 replicas. Each replica will create a pod that runs the container defined in the deployment's template.

```
C:\Users\lalit> kubectl scale deployment --replicas=2 printhello
deployment.apps/printhello scaled

C:\Users\lalit> kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
printhello-cfd58fd56-1cf7g          1/1     Running   0           76m
printhello-cfd58fd56-snzmb          1/1     Running   0           21s

C:\Users\lalit> kubectl get pods -A
NAMESPACE   NAME                                READY   STATUS    RESTARTS   AGE
default     printhello-cfd58fd56-1cf7g          1/1     Running   0           77m
default     printhello-cfd58fd56-snzmb          1/1     Running   0           40s
kube-system coredns-787d4945fb-hzz89           1/1     Running   0           94m
kube-system etcd-minikube                       1/1     Running   0           95m
kube-system kube-apiserver-minikube  1/1     Running   0           96m
kube-system kube-controller-manager-minikube  1/1     Running   2 (96m ago)  96m
kube-system kube-proxy-92rtd         1/1     Running   0           94m
kube-system kube-scheduler-minikube  1/1     Running   0           95m
kube-system storage-provisioner      1/1     Running   2 (66m ago)  93m
```

// to delete a specific pod

```
Command Prompt

C:\Users\lalit> kubectl delete pod printhello-cfd58fd56-snzmb
pod "printhello-cfd58fd56-snzmb" deleted

C:\Users\lalit> kubectl get pods -A
NAMESPACE      NAME                                                    READY   STATUS    RESTARTS   AGE
default        printhello-cfd58fd56-4b8k1                             1/1     Running   0          26s
default        printhello-cfd58fd56-1cf7g                             1/1     Running   0          82m
kube-system    coredns-787d4945fb-hzz89                             1/1     Running   0          99m
kube-system    etcd-minikube                                           1/1     Running   0         100m
kube-system    kube-apiserver-minikube                                1/1     Running   0         101m
kube-system    kube-controller-manager-minikube                       1/1     Running   2 (102m ago) 101m
kube-system    kube-proxy-92rtd                                        1/1     Running   0          99m
kube-system    kube-scheduler-minikube                                1/1     Running   0         100m
kube-system    storage-provisioner                                    1/1     Running   2 (71m ago) 98m

C:\Users\lalit>
```

// launches the Kubernetes dashboard in your default web browser.

The Kubernetes dashboard allows you to view and manage various aspects of your Kubernetes cluster, including deployments, services etc.

```
Command Prompt - minikube dashboard

C:\Users\lalit> minikube dashboard
! Executing "docker container inspect minikube --format={{.State.Status}}" took an unusually long time: 2.1216383s
* Restarting the docker service may improve performance.
* Enabling dashboard ...
  - Using image docker.io/kubernetesui/dashboard:v2.7.0
  - Using image docker.io/kubernetesui/metrics-scraper:v1.0.8
* Some dashboard features require the metrics-server addon. To enable all features please run:

    minikube addons enable metrics-server

* Verifying dashboard health ...
* Launching proxy ...
* Verifying proxy health ...
* Opening http://127.0.0.1:54771/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/ in your default browser...
```

