

A.Bhavagna

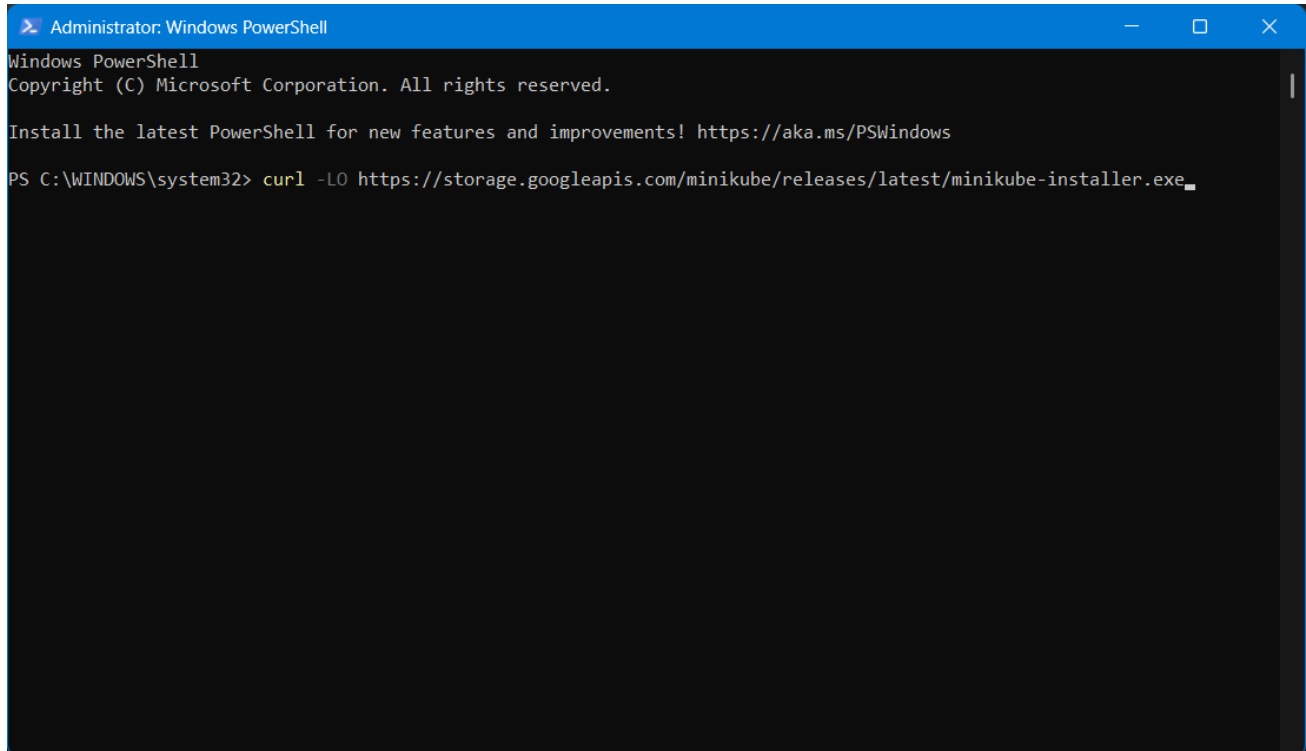
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Working with minikube and Nagios

Minikube Installation :

Run command in powershell

`curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64`

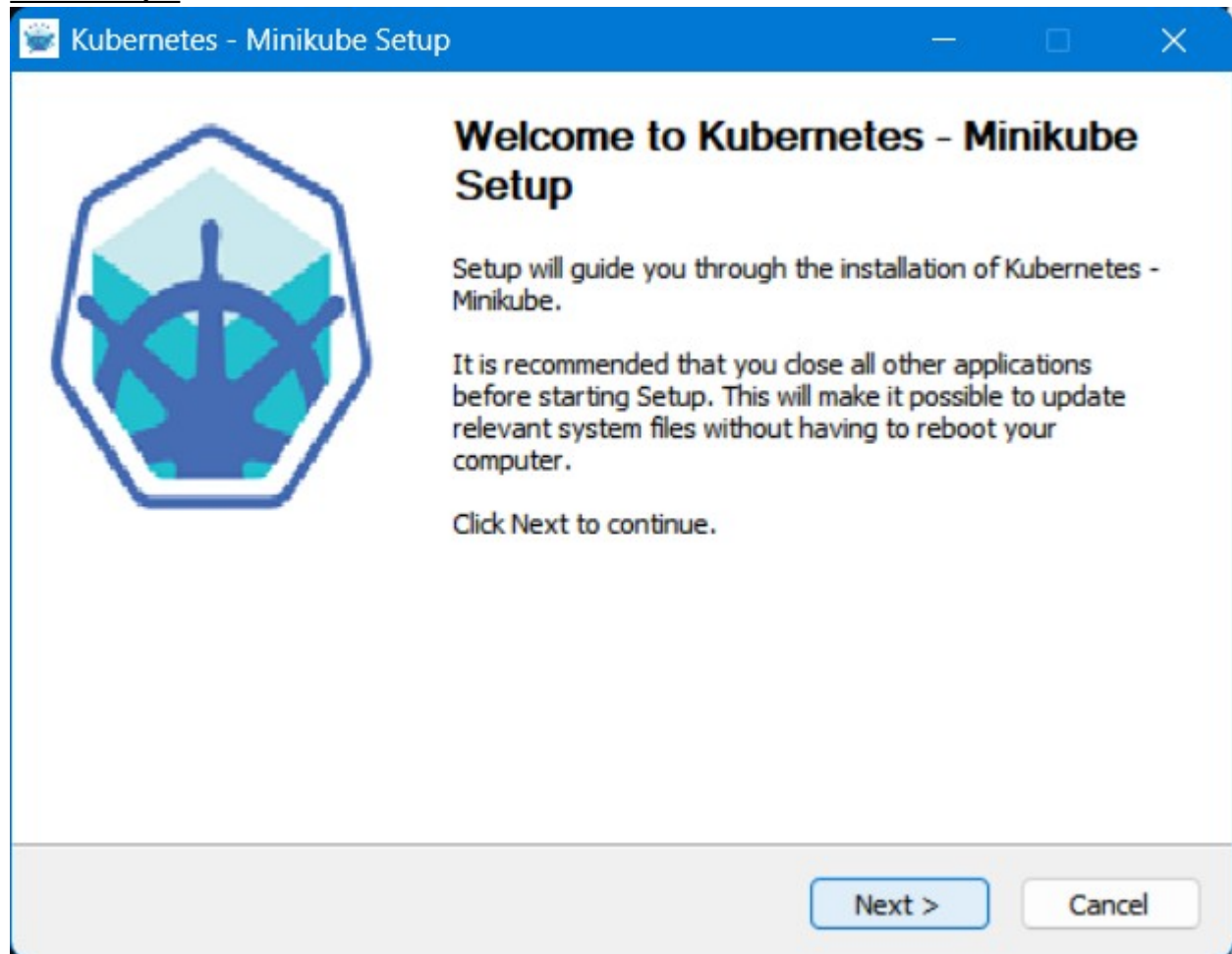
A screenshot of a Windows PowerShell terminal window. The title bar is blue and reads "Administrator: Windows PowerShell". The terminal content shows the standard PowerShell startup messages: "Windows PowerShell", "Copyright (C) Microsoft Corporation. All rights reserved.", and "Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows". Below these, the command `PS C:\WINDOWS\system32> curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-installer.exe` is entered at the prompt. The cursor is at the end of the command line.

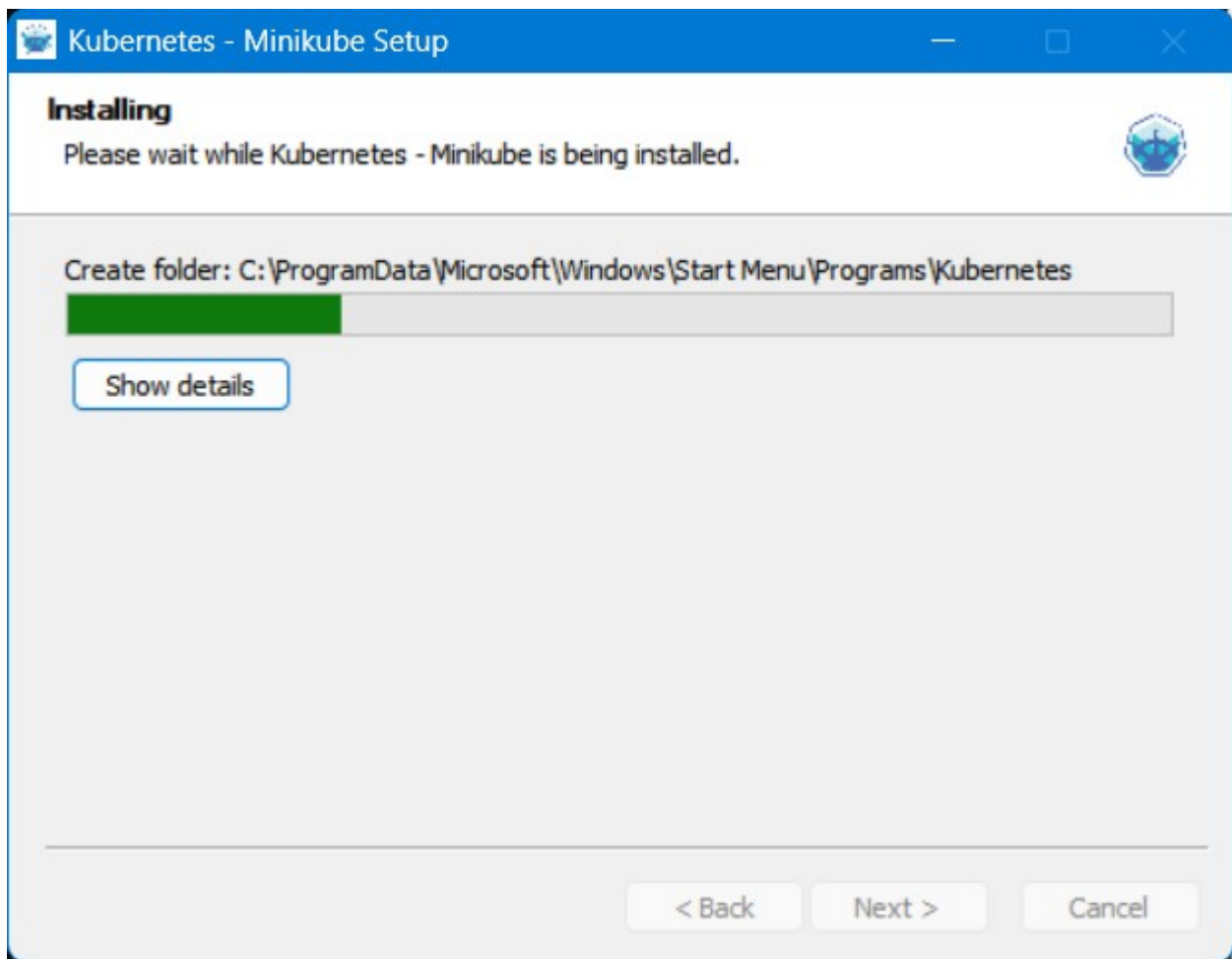
```
Administrator: Windows PowerShell
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\WINDOWS\system32> curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-installer.exe
```

**Follow steps:**





```
C:\Users\andam>curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-installer.exe
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total   Spent    Left   Speed
  0     0    0     0  0     0     0     0  0  0  0  0  0  0  0  0  0  0  0  0  0
51.2M  0  147k    0     0  103k   0  0:00:28 0:00:01 0:00:27 10 3 51.2M  3 2046k  0  0  849k  0 0:01:01 0:00:02 0:00:59 84 31 51.2
M  31 15.9M    0     0 4803k   0 0:00:10 0:00:03 0:00:07 480 62 51.2M  62 32.0M  0  0  7452k  0 0:00:07 0:00:04 0:00:03 745 94 51.2
94 48.3M    0     0 9153k   0 0:00:05 0:00:05 0:00:00 9.100 51.2M 100 51.2M  0  0  9377k  0 0:00:05 0:00:05 0:00:00 12.2M
C:\Users\andam>. \minikube-installer.exe
```

### Verify Installation:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\WINDOWS\system32> minikube version
minikube version: v1.37.0
commit: 65318f4cfff9c12cc87ec9eb8f4cdd57b25047f3
PS C:\WINDOWS\system32> |
```

## Minikube Automation Steps

### Step 1: Start Minikube Cluster

- Open your terminal and run the command:

minikube start

```
Windows PowerShell
PS C:\WINDOWS\system32> minikube status
* Profile "minikube" not found. Run "minikube profile list" to view all profiles.
  To start a cluster, run: "minikube start"
PS C:\WINDOWS\system32> minikube start
* minikube v1.37.0 on Microsoft Windows 11 Home Single Language 10.0.26100.6584 Build 26100.6584
* Automatically selected the docker driver
* Using Docker Desktop driver with root privileges
* Starting "minikube" primary control-plane node in "minikube" cluster
* Pulling base image v0.0.48 ...
* Downloading Kubernetes v1.34.0 preload ...
  > gcr.io/k8s-minikube/kicbase...: 488.52 MiB / 488.52 MiB 100.00% 10.34 M
  > preloaded-images-k8s-v18-v1...: 337.07 MiB / 337.07 MiB 100.00% 6.79 Mi
* Creating docker container (CPUs=2, Memory=3500MB) ...
! Failing to connect to https://registry.k8s.io/ from inside the minikube container
* To pull new external images, you may need to configure a proxy: https://minikube.sigs.k8s.io/docs/reference/networking/proxy/
* Preparing Kubernetes v1.34.0 on Docker 28.4.0 ...
* Configuring bridge CNI (Container Networking Interface) ...
* Verifying Kubernetes components...
  - Using image gcr.io/k8s-minikube/storage-provisioner:v5
* Enabled addons: storage-provisioner, default-storageclass

! C:\Program Files\Docker\Docker\resources\bin\kubectl.exe is version 1.31.4, which may have incompatibilities with Kubernetes 1.34.0.
  - Want kubectl v1.34.0? Try 'minikube kubectl -- get pods -A'
* Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
PS C:\WINDOWS\system32> minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured
PS C:\WINDOWS\system32> |
```

### Step 2: Create and Manage Deployment

Create an application in Kubernetes:

```
kubectl create deployment mynginx --image=nginx
```

```
Windows PowerShell
PS C:\WINDOWS\system32> kubectl create deployment mynginx --image=nginx
deployment.apps/mynginx created
PS C:\WINDOWS\system32> kubectl get deployment
NAME      READY   UP-TO-DATE   AVAILABLE   AGE
mynginx   0/1     1            0           14s
PS C:\WINDOWS\system32> kubectl get pods
NAME                                READY   STATUS             RESTARTS   AGE
mynginx-645865c456-kkl4t           0/1     ContainerCreating   0          31s
PS C:\WINDOWS\system32> kubectl get deployment
NAME      READY   UP-TO-DATE   AVAILABLE   AGE
mynginx   1/1     1            1           2m30s
PS C:\WINDOWS\system32> kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
mynginx-645865c456-kkl4t           1/1     Running   0          2m33s
PS C:\WINDOWS\system32> |
```

### Step 3: Scale the Deployment

```
Windows PowerShell
PS C:\WINDOWS\system32> kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
mynginx-645865c456-kkl4t           1/1     Running   0          2m33s
PS C:\WINDOWS\system32> kubectl describe pod mynginx-645865c456-kkl4t
Name:          mynginx-645865c456-kkl4t
Namespace:     default
Priority:       0
Service Account: default
Node:          minikube/192.168.49.2
Start Time:    Tue, 14 Oct 2025 17:37:32 +0530
Labels:        app=mynginx
               pod-template-hash=645865c456
Annotations:   <none>
Status:        Running
IP:            10.244.0.3
IPs:           IP: 10.244.0.3
Controlled By: ReplicaSet/mynginx-645865c456
Containers:
  nginx:
    Container ID:   docker://0c0023d47fba3e9591852d158771cd46c0b6981c9ef6c2d481492738b75c98d2
    Image:          nginx
    Image ID:       docker-pullable://nginx@sha256:3b7732505933ca591ce4a6d860cb713ad96a3176b82f7979a8dfa9973486a0d6
    Port:           <none>
    Host Port:      <none>
    State:          Running
      Started:      Tue, 14 Oct 2025 17:38:03 +0530
    Ready:          True
    Restart Count:  0
    Environment:    <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-q9fcz (ro)
Conditions:
  Type                               Status
  PodReadyToStartContainers          True
  Initialized                         True
  Ready                              True
  ContainersReady                    True
  PodScheduled                       True
Volumes:
  kube-api-access-q9fcz:
```

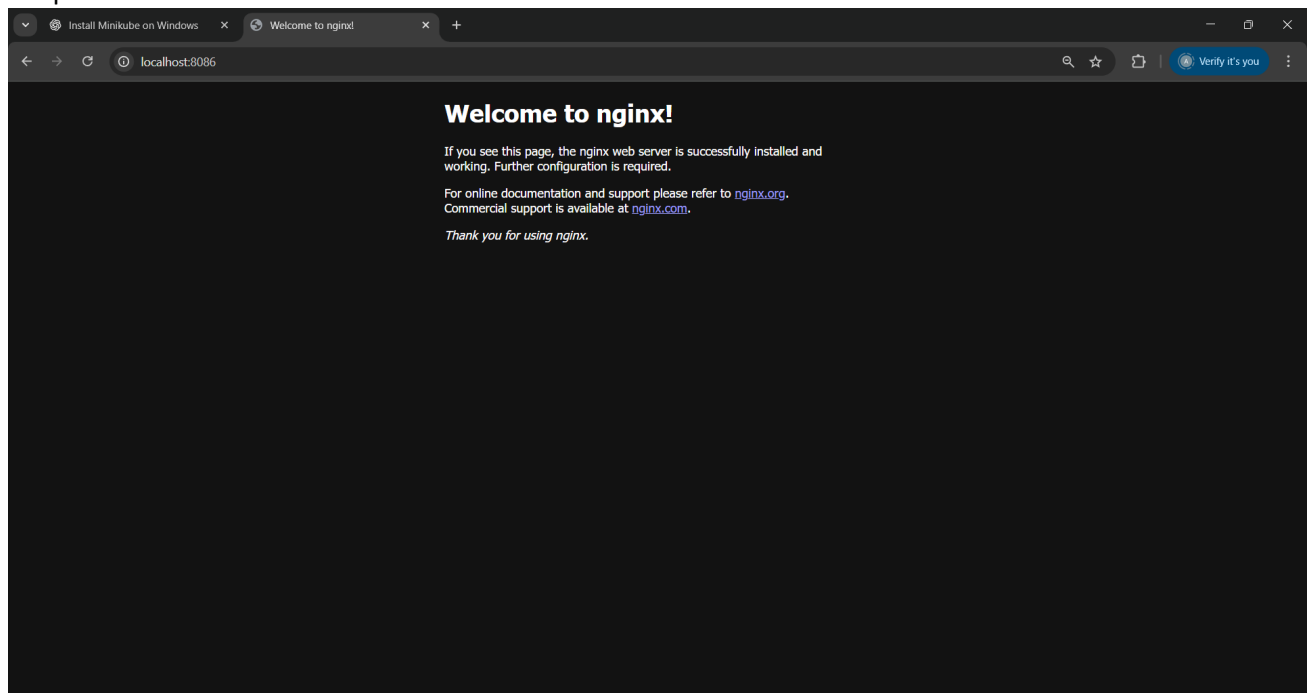
### Step 4: Access the Nginx App

#### 1. Using Port Forwarding:

```
kubectl port-forward svc/mynginx 8081:80
```

```
Windows PowerShell
Restart Count: 0
Environment: <none>
Mounts:
/var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-q9fcz (ro)
Conditions:
Type              Status
PodReadyToStartContainers True
Initialized       True
Ready             True
ContainersReady   True
PodScheduled      True
Volumes:
kube-api-access-q9fcz:
Type: Projected (a volume that contains injected data from multiple sources)
TokenExpirationSeconds: 3607
ConfigMapName: kube-root-ca.crt
ConfigMapOptional: <nil>
DownwardAPI: true
QoS Class: BestEffort
Node-Selectors: <none>
Tolerations: node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
              node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events:
Type      Reason      Age   From          Message
----      -
Normal    Scheduled   3m33s default-scheduler Successfully assigned default/mynginx-645865c456-kkl4t to minikube
Normal    Pulling     3m33s kubelet        Pulling image "nginx"
Normal    Pulled      3m10s kubelet        Successfully pulled image "nginx" in 22.351s (22.351s including waiting). Image size: 159974475 bytes.
Normal    Created     3m2s  kubelet        Created container: nginx
Normal    Started     3m2s  kubelet        Started container: nginx
PS C:\WINDOWS\system32> kubectl expose deployment mynginx --type=NodePort --port=80 --target-port=80
service/mynginx exposed
PS C:\WINDOWS\system32> kubectl get service myngnix
Error from server (NotFound): services "myngnix" not found
PS C:\WINDOWS\system32> kubectl get service mynginx
NAME      TYPE      CLUSTER-IP   EXTERNAL-IP   PORT(S)          AGE
mynginx   NodePort  10.107.163.171 <none>        80:32030/TCP    30s
PS C:\WINDOWS\system32> kubectl port-forward svc/mynginx 8086:80
Forwarding from 127.0.0.1:8086 -> 80
Forwarding from [::1]:8086 -> 80
```

Output:



## Nagios Automation Steps

### Step 1: Pull the Nagios Docker Image

- Open a terminal and run:

docker pull jasonrivers/nagios:latest

```
Command Prompt
Microsoft Windows [Version 10.0.26200.6899]
(c) Microsoft Corporation. All rights reserved.

C:\Users\andam>docker pull jasonrivers/nagios:latest
error during connect: Post "http://%2F%2F.%2Fpipe%2FdockerDesktopLinuxEngine/v1.47/images/create?fromImage=jasonrivers%2Fnagios&tag=latest": open //./pipe/dockerDesktopLinuxEngine: The system cannot find the file specified.

C:\Users\andam>docker pull jasonrivers/nagios:latest
latest: Pulling from jasonrivers/nagios
Digest: sha256:2a7c2b20d118baf92b47b69a3901e68dd7664617801b94e560bc4d6564d6ae54
Status: Image is up to date for jasonrivers/nagios:latest
docker.io/jasonrivers/nagios:latest

C:\Users\andam>
```

## Step 2: Run Nagios

docker run --name nagiosdemo -p 8888:80 jasonrivers/nagios:latest

```
Command Prompt - docker r
Microsoft Windows [Version 10.0.26200.6899]
(c) Microsoft Corporation. All rights reserved.

C:\Users\andam>docker pull jasonrivers/nagios:latest
error during connect: Post "http://%2F%2F.%2Fpipe%2FdockerDesktopLinuxEngine/v1.47/images/create?fromImage=jasonrivers%2Fnagios&tag=latest": open //./pipe/dockerDesktopLinuxEngine: The system cannot find the file specified.

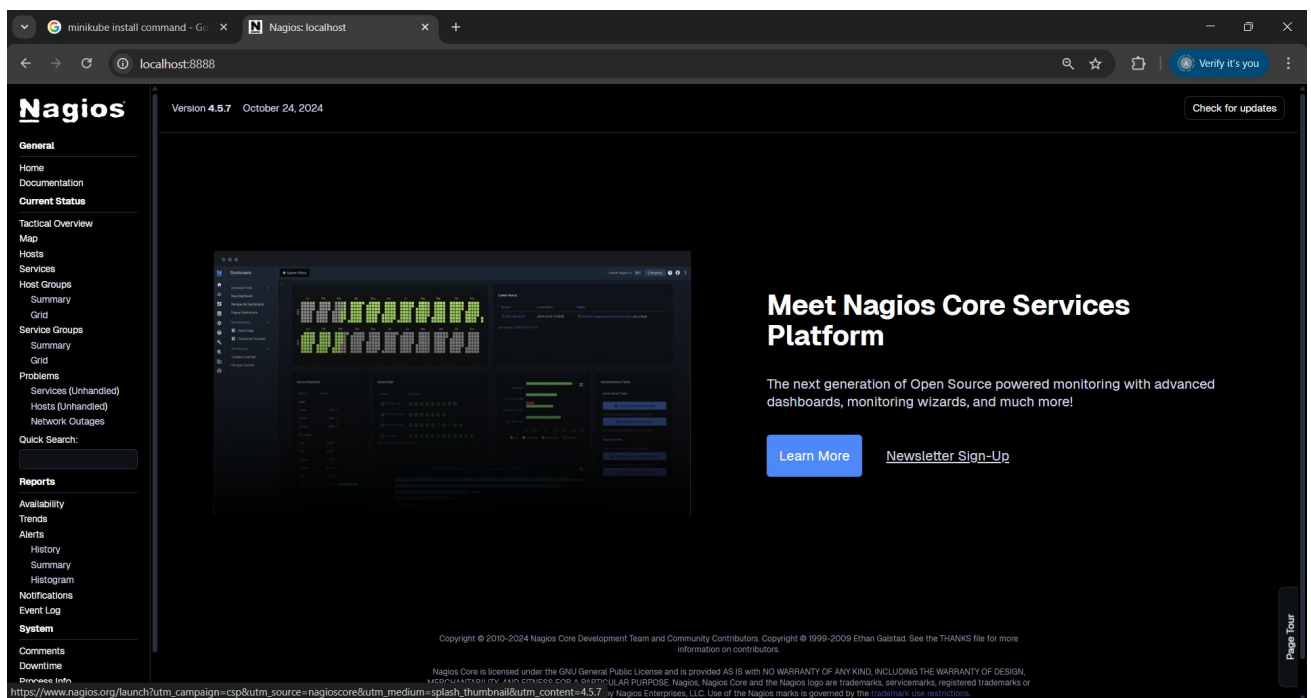
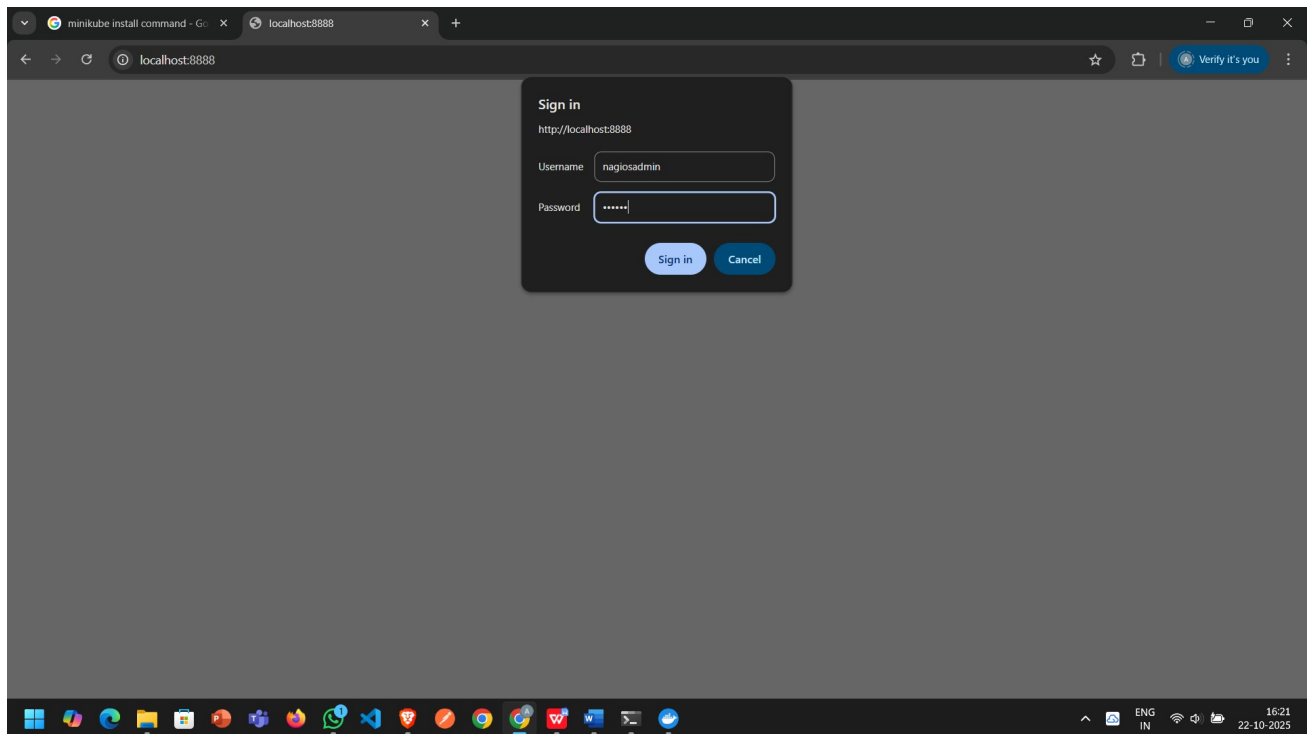
C:\Users\andam>docker pull jasonrivers/nagios:latest
latest: Pulling from jasonrivers/nagios
Digest: sha256:2a7c2b20d118baf92b47b69a3901e68dd7664617801b94e560bc4d6564d6ae54
Status: Image is up to date for jasonrivers/nagios:latest
docker.io/jasonrivers/nagios:latest

C:\Users\andam>docker run --name nagiosdemo -p 8888:80 jasonrivers/nagios:latest
docker: Error response from daemon: Conflict. The container name "/nagiosdemo" is already in use by container "b95db79f28e087777c25afcdcd8a99d44ba77643612d0ad28ee693cd9ec04422". You have to remove (or rename) that container to be able to reuse that name.
See 'docker run --help'.

C:\Users\andam>docker run --name nagiosdemos -p 8888:80 jasonrivers/nagios:latest
Adding password for user nagiosadmin
chown: warning: '.' should be ':' 'nagios.nagios'
Started runsvdir, PID is 13
checking permissions for nagios & nagiosgraph
rsyslogd: [origin software="rsyslogd" swVersion="8.2312.0" x-pid="21" x-info="https://www.rsyslog.com"] start

Nagios Core 4.5.7
Copyright (c) 2009-present Nagios Core Development Team and Community Contributors
Copyright (c) 1999-2009 Ethan Galstad
Last Modified: 2024-10-24
```

## Step 3: Access Nagios Dashboard



## Step 4: Monitoring Host Details



**Nagios**

**Current Network Status**  
 Last Updated: Wed Oct 22 10:52:44 UTC 2025  
 Updated every 90 seconds  
 Nagios® Core™ 4.5.7 - www.nagios.org  
 Logged in as nagiosadmin

**Host Status Totals**

Up	Down	Unreachable	Pending
1	0	0	0
<b>All Problems</b>		<b>All Types</b>	
0		1	

**Service Status Totals**

Ok	Warning	Unknown	Critical	Pending
2	0	0	0	5
<b>All Problems</b>		<b>All Types</b>		
0		7		

**Host Status Details For All Host Groups**

Limit Results: 100

Host **	Status **	Last Check **	Duration **	Status Information
localhost	UP	10-22-2025 10:51:05	0d 0h 1m 42s+	PING OK - Packet loss = 0%, RTA = 0.06 ms

Results 1 - 1 of 1 Matching Hosts

**Page Tour**

## SBQ's

1. Your Pod keeps restarting repeatedly. What will you do?

Describe the pod address the issue and solve it or delete the pod

2. A Kubernetes pod is stuck in a "Pending" state. What could be the possible reasons, and how would you troubleshoot it?

Reasons may be insufficient resources

Image pull issue

Troubleshoot:

Describe and check FailedScheduling

3. How would you debug a failed deployment in Kubernetes?

`kubectl get deployment deployment-name`

`kubectl describe deployment deployment-name`

And check logs

4. You have a Kubernetes Deployment with multiple replicas, and some pods are failing health checks. How would you identify the root cause and fix it?

Describe the pod and check liveness and readiness probes

5. How do you roll back a faulty deployment?

`kubectl rollout undo deployment/deployment-name`

6. How do you debug a running Pod?

`kubectl logs pod-name`

7. You need to expose a local service externally. How to do?

`kubectl expose deployment myapp --type=NodePort --port=80 --target-port=80`

8. How to Start and stop Nagios

`docker run --name nagiosdemo -p 8888:80 jasonrivers/nagios:latest`

`docker stop nagiosdemo`

`docker rm nagiosdemo`

9. You installed Nagios but the web interface shows *"Unable to connect to Nagios process"*. how to resolve this?

Verify whether is running

`ps -ef | grep nagios`

10. You added a new host in Nagios, but it's not appearing on the web interface. how to check?

Verify conf

`nagios -v /usr/local/nagios/etc/nagios.cfg`

11. How can you check whether Nagios is running properly?

`docker ps`

or web access

12. How do you view Nagios logs in real-time

`docker logs -f nagiosdemo`

13. What are the advantages of using Nagios?

Continuous monitoring of servers, services, and applications