# Creating a Pod

There were 5 jargons we learnt about

1. Cluster

2. Nodes

3. Images

4. Containers

5. Pods

We have created a  cluster  of  3 nodes

How can we deploy a  single container  from  an image  inside a  pod  ?

## Finding a good image

Let's try to start this image locally - https://hub.docker.com/_/nginx

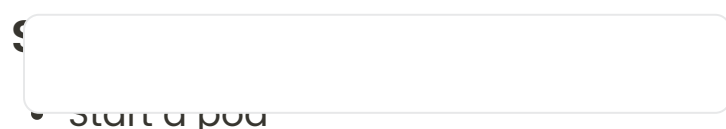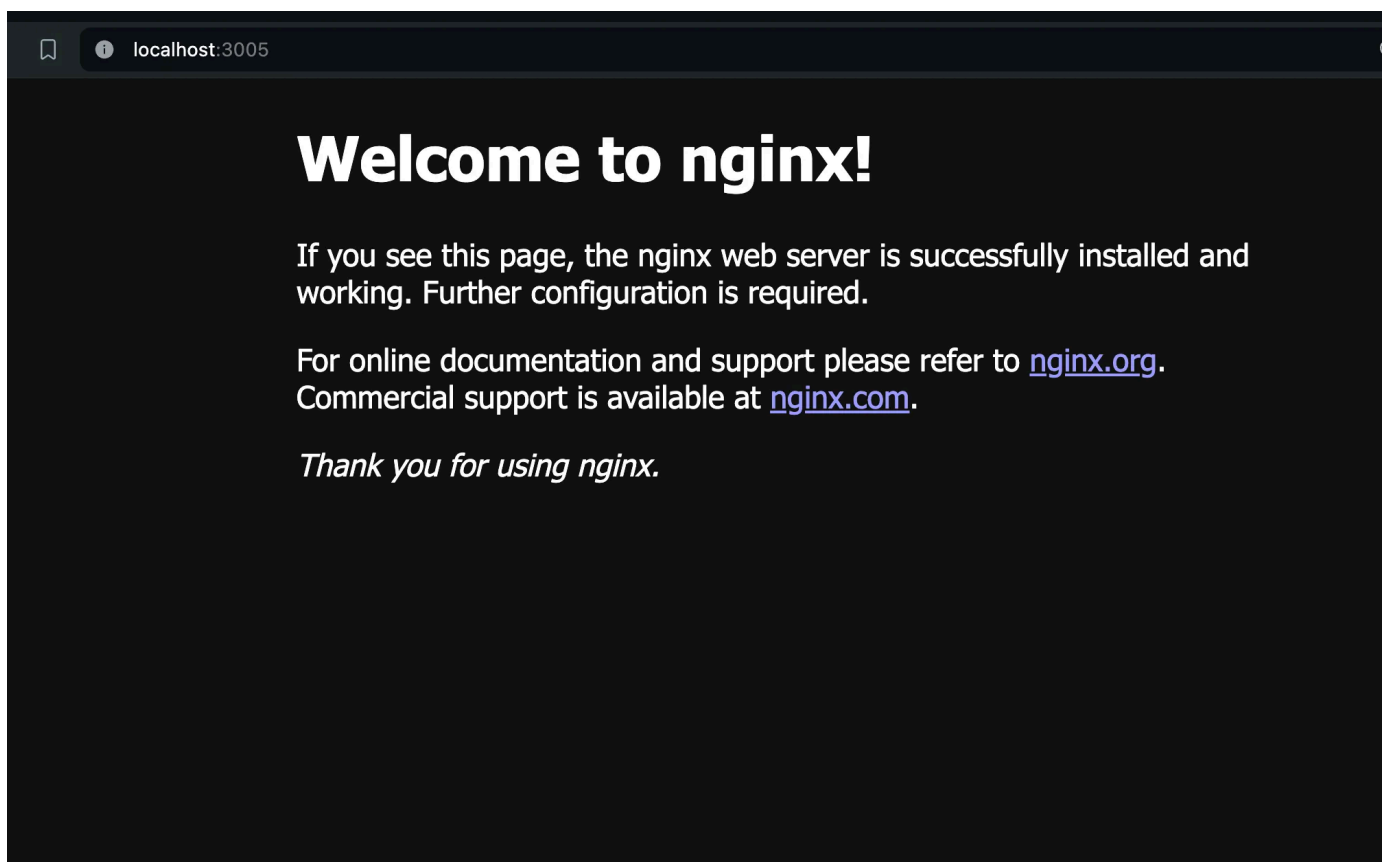## Starting using docker

```
docker run -p 3005:80 nginx
```

```
> docker run -p 3005:80 nginx

cfe05c174c17: Pull complete
f72850762d9b: Pull complete
82945d645e12: Pull complete
a6f455b832da: Pull complete
22fc067a16f6: Pull complete
4bd9fc5c1e9f: Pull complete
Digest: sha256:0f04e4f646a3f14bf31d8bc8d885b6c951fdcf42589d06845f64d18aec6a3c4d
Status: Downloaded newer image for nginx:latest
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2024/06/01 00:33:21 [notice] 1#1: using the "epoll" event method
2024/06/01 00:33:21 [notice] 1#1: nginx/1.27.0
2024/06/01 00:33:21 [notice] 1#1: built by gcc 12.2.0 (Debian 12.2.0-14)
2024/06/01 00:33:21 [notice] 1#1: OS: Linux 6.5.11-linuxkit
2024/06/01 00:33:21 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2024/06/01 00:33:21 [notice] 1#1: start worker processes
2024/06/01 00:33:21 [notice] 1#1: start worker process 29
2024/06/01 00:33:21 [notice] 1#1: start worker process 30
```

Try visiting localhost:3005

localhost:3005

# 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. Commercial support is available at nginx.com.

*Thank you for using nginx.*

kubectl run nginx --image=nginx --port=80

- Check the status of the pod

  kubectl get pods

- Check the logs

  kubectl logs nginx

```
✕  ..-prom-offline (-zsh)
→  week-26-prom-offline kubectl logs nginx
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2024/06/01 00:32:23 [notice] 1#1: using the "epoll" event method
2024/06/01 00:32:23 [notice] 1#1: nginx/1.27.0
2024/06/01 00:32:23 [notice] 1#1: built by gcc 12.2.0 (Debian 12.2.0-14)
2024/06/01 00:32:23 [notice] 1#1: OS: Linux 6.5.11-linuxkit
2024/06/01 00:32:23 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2024/06/01 00:32:23 [notice] 1#1: start worker processes
2024/06/01 00:32:23 [notice] 1#1: start worker process 32
2024/06/01 00:32:23 [notice] 1#1: start worker process 33
2024/06/01 00:32:23 [notice] 1#1: start worker process 34
2024/06/01 00:32:23 [notice] 1#1: start worker process 35
2024/06/01 00:32:23 [notice] 1#1: start worker process 36
2024/06/01 00:32:23 [notice] 1#1: start worker process 37
2024/06/01 00:32:23 [notice] 1#1: start worker process 38
2024/06/01 00:32:23 [notice] 1#1: start worker process 39
```

- Describe the pod to see more details

```
→  week-26-prom-offline kubectl describe pod nginx
Name:             nginx
Namespace:        default
Priority:         0
Service Account:  default
Node:             local-worker/172.20.0.3        → worker 1
Start Time:       Sat, 01 Jun 2024 06:02:10 +0530
Labels:           run=nginx
Annotations:      <none>
Status:           Running
IP:               10.244.1.2
IPs:
```

# What our system looks like right now

Good questions to ask

1. How can I stop a pod?

2. How can I visit the pod? Which port is it available on?

3. How many pods can I start?