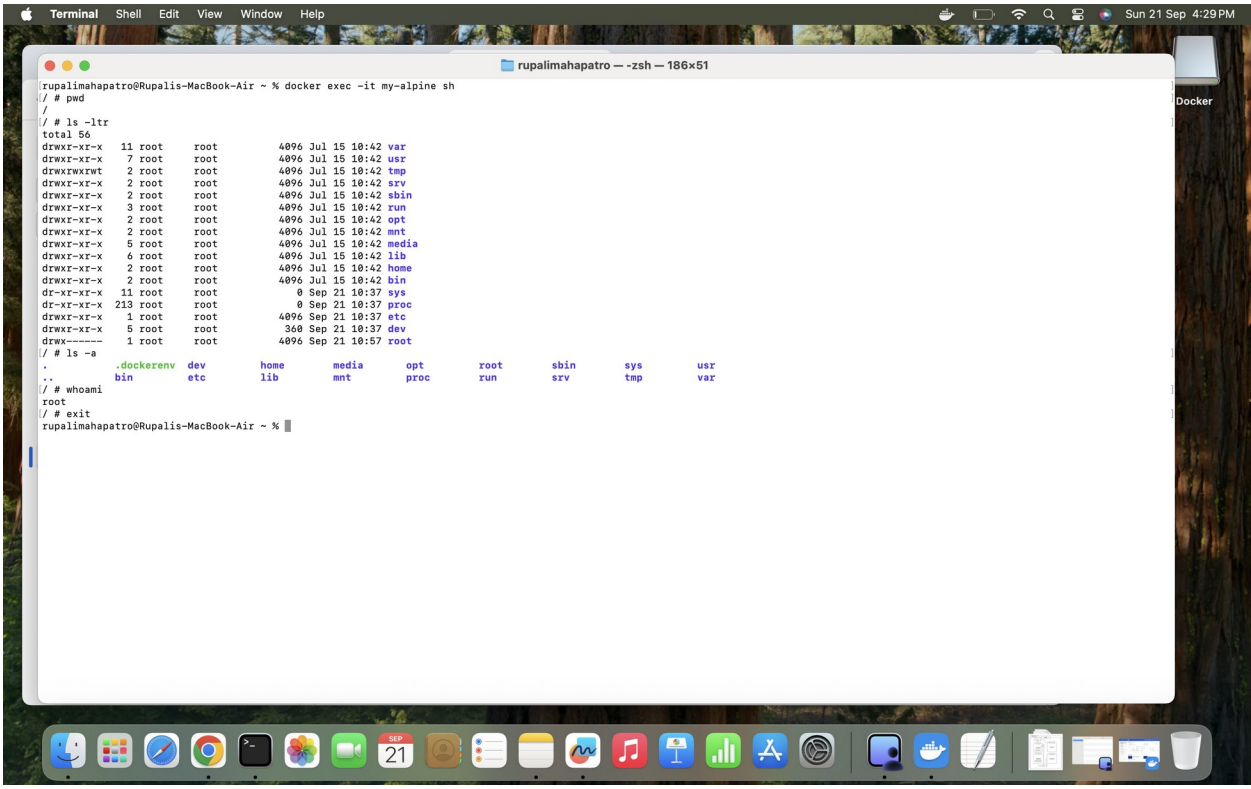
1. What's the difference between docker ps and docker ps -a?

   When we run docker ps, it will list all the containers which are currently running whereas docker ps –a will list all the containers irrespective of it's state (running/stopped etc)

1. Why are Alpine and BusyBox images so small?

   Because they don't have a full OS. It includes only core libraries. Also, they share resources with the host kernel.

1.



1.

```
drwxr-xr-x    5 root     root           360 Sep 21 10:37 dev
drwx------    1 root     root          4096 Sep 21 10:57 root
/ # exit
rupalimahapatro@Rupalis-MacBook-Air ~ % clear

rupalimahapatro@Rupalis-MacBook-Air ~ % docker exec -it my-alpine sh
/ # pwd
/
/ # ls -ltr
total 56
drwxr-xr-x   11 root     root          4096 Jul 15 10:42 var
drwxr-xr-x    7 root     root          4096 Jul 15 10:42 usr
drwxrwxrwt    2 root     root          4096 Jul 15 10:42 tmp
drwxr-xr-x    2 root     root          4096 Jul 15 10:42 srv
drwxr-xr-x    2 root     root          4096 Jul 15 10:42 sbin
drwxr-xr-x    3 root     root          4096 Jul 15 10:42 run
drwxr-xr-x    2 root     root          4096 Jul 15 10:42 opt
drwxr-xr-x    2 root     root          4096 Jul 15 10:42 mnt
drwxr-xr-x    5 root     root          4096 Jul 15 10:42 media
drwxr-xr-x    6 root     root          4096 Jul 15 10:42 lib
drwxr-xr-x    2 root     root          4096 Jul 15 10:42 home
drwxr-xr-x    2 root     root          4096 Jul 15 10:42 bin
dr-xr-xr-x   11 root     root             0 Sep 21 10:37 sys
dr-xr-xr-x  213 root     root             0 Sep 21 10:37 proc
drwxr-xr-x    1 root     root          4096 Sep 21 10:37 etc
drwxr-xr-x    5 root     root           360 Sep 21 10:37 dev
drwx------    1 root     root          4096 Sep 21 10:57 root
/ # ls -a
.           .dockerenv  dev         home        media       opt         root        sbin        sys         usr
..          bin         etc         lib         mnt         proc        run         srv         tmp         var
/ # whoami
root
/ # exit
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps
CONTAINER ID   IMAGE     COMMAND     CREATED          STATUS          PORTS     NAMES
e31d6633cb5b   busybox   "sh"        23 minutes ago   Up 23 minutes             my-busybox
48f6ca74c16d   alpine    "/bin/sh"   23 minutes ago   Up 23 minutes             my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ % docker stop e31d6633cb5b
e31d6633cb5b
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps
CONTAINER ID   IMAGE     COMMAND     CREATED          STATUS          PORTS     NAMES
48f6ca74c16d   alpine    "/bin/sh"   24 minutes ago   Up 24 minutes             my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps -a
CONTAINER ID   IMAGE     COMMAND     CREATED          STATUS                       PORTS     NAMES
e31d6633cb5b   busybox   "sh"        23 minutes ago   Exited (137) 11 seconds ago             my-busybox
48f6ca74c16d   alpine    "/bin/sh"   24 minutes ago   Up 24 minutes                           my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ % docker start e31d6633cb5b
e31d6633cb5b
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps
CONTAINER ID   IMAGE     COMMAND     CREATED          STATUS          PORTS     NAMES
e31d6633cb5b   busybox   "sh"        23 minutes ago   Up 3 seconds              my-busybox
48f6ca74c16d   alpine    "/bin/sh"   24 minutes ago   Up 24 minutes             my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ % docker rm e31d6633cb5b
Error response from daemon: cannot remove container "e31d6633cb5b": container is running: stop the container before removing or force remove
rupalimahapatro@Rupalis-MacBook-Air ~ % docker rm -f e31d6633cb5b
e31d6633cb5b
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps
CONTAINER ID   IMAGE     COMMAND     CREATED          STATUS          PORTS     NAMES
48f6ca74c16d   alpine    "/bin/sh"   24 minutes ago   Up 24 minutes             my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps -a
CONTAINER ID   IMAGE     COMMAND     CREATED          STATUS          PORTS     NAMES
48f6ca74c16d   alpine    "/bin/sh"   24 minutes ago   Up 24 minutes             my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ %
```

5.

```
rupalimahapatro@Rupalis-MacBook-Air ~ % docker run -d --name my-nginx nginx:latest
9a7382b2c89edd872f9f8ece67cdc7fddcd12f5a6cf32c3359fde2e05e52eccd
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED         STATUS         PORTS     NAMES
9a7382b2c89e   nginx:latest   "/docker-entrypoint.…"   4 seconds ago   Up 4 seconds   80/tcp    my-nginx
48f6ca74c16d   alpine         "/bin/sh"                2 hours ago     Up 2 hours               my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ % docker inspect
docker: 'docker inspect' requires at least 1 argument

Usage:  docker inspect [OPTIONS] NAME|ID [NAME|ID...]

See 'docker inspect --help' for more information
rupalimahapatro@Rupalis-MacBook-Air ~ % docker inspect my-nginx
[
    {
        "Id": "9a7382b2c89edd872f9f8ece67cdc7fddcd12f5a6cf32c3359fde2e05e52eccd",
        "Created": "2025-09-21T12:45:49.2716218847",
        "Path": "/docker-entrypoint.sh",
        "Args": [
            "nginx",
            "-g",
            "daemon off;"
        ],
        "State": {
            "Status": "running",
            "Running": true,
            "Paused": false,
            "Restarting": false,
            "OOMKilled": false,
            "Dead": false,
            "Pid": 2758,
            "ExitCode": 0,
            "Error": "",
            "StartedAt": "2025-09-21T12:45:49.306933009Z",
            "FinishedAt": "0001-01-01T00:00:00Z"
        },
        "Image": "sha256:d5f28ef21aabddd098f3dbc21fe5b7a7d7a184720bc07da0b6c9b9820e97f25e",
        "ResolvConfPath": "/var/lib/docker/containers/9a7382b2c89edd872f9f8ece67cdc7fddcd12f5a6cf32c3359fde2e05e52eccd/resolv.conf",
        "HostnamePath": "/var/lib/docker/containers/9a7382b2c89edd872f9f8ece67cdc7fddcd12f5a6cf32c3359fde2e05e52eccd/hostname",
        "HostsPath": "/var/lib/docker/containers/9a7382b2c89edd872f9f8ece67cdc7fddcd12f5a6cf32c3359fde2e05e52eccd/hosts",
        "LogPath": "/var/lib/docker/containers/9a7382b2c89edd872f9f8ece67cdc7fddcd12f5a6cf32c3359fde2e05e52eccd/9a7382b2c89edd872f9f8ece67cdc7fddcd12f5a6cf32c3359fde2e05e52eccd-json.log",
        "Name": "/my-nginx",
        "RestartCount": 0,
        "Driver": "overlayfs",
        "Platform": "linux",
        "MountLabel": "",
        "ProcessLabel": "",
        "AppArmorProfile": "",
        "ExecIDs": null,
        "HostConfig": {
            "Binds": null,
            "ContainerIDFile": "",
            "LogConfig": {
                "Type": "json-file",
                "Config": {}
            },
            "NetworkMode": "bridge",
            "PortBindings": {},
            "RestartPolicy": {
                "Name": "no",
                "MaximumRetryCount": 0
            },
```

6.

```
      }
    }
]
rupalimahapatro@Rupalis-MacBook-Air ~ % docker exec -it my-nginx curl localhost:80
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
html { color-scheme: light dark; }
body { width: 35em; margin: 0 auto;
font-family: Tahoma, Verdana, Arial, sans-serif; }
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
rupalimahapatro@Rupalis-MacBook-Air ~ % curl localhost:80
curl: (7) Failed to connect to localhost port 80 after 0 ms: Couldn't connect to server
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED         STATUS         PORTS     NAMES
9a7382b2c89e   nginx:latest   "/docker-entrypoint.…"   2 minutes ago   Up 2 minutes   80/tcp    my-nginx
48f6ca74c16d   alpine         "/bin/sh"                2 hours ago     Up 2 hours               my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ % docker rm -f my-nginx
my-nginx
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps
CONTAINER ID   IMAGE     COMMAND     CREATED       STATUS       PORTS     NAMES
48f6ca74c16d   alpine    "/bin/sh"   2 hours ago   Up 2 hours             my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ % docker run -d -p 8080:80 --name my-nginx ngnix:latest
Unable to find image 'ngnix:latest' locally
docker: Error response from daemon: pull access denied for ngnix, repository does not exist or may require 'docker login'

Run 'docker run --help' for more information
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps
CONTAINER ID   IMAGE     COMMAND     CREATED       STATUS       PORTS     NAMES
48f6ca74c16d   alpine    "/bin/sh"   2 hours ago   Up 2 hours             my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ % docker run -d -P 8080:80 --name my-nginx ngnix:latest
Unable to find image '8080:80' locally
docker: Error response from daemon: pull access denied for 8080, repository does not exist or may require 'docker login'

Run 'docker run --help' for more information
rupalimahapatro@Rupalis-MacBook-Air ~ % docker run -d -P 8080:80 --name my-nginx nginx:latest
Unable to find image '8080:80' locally
docker: Error response from daemon: pull access denied for 8080, repository does not exist or may require 'docker login'

Run 'docker run --help' for more information
rupalimahapatro@Rupalis-MacBook-Air ~ % docker run -d -p 8080:80 --name my-nginx nginx:latest
13e9933fe4b928bfda31a2387e2105ca5affab59acfeeb34772fe800ec131e18
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED         STATUS         PORTS                                      NAMES
13e9933fe4b9   nginx:latest   "/docker-entrypoint.…"   3 seconds ago   Up 3 seconds   0.0.0.0:8080->80/tcp, [::]:8080->80/tcp   my-nginx
48f6ca74c16d   alpine         "/bin/sh"                2 hours ago     Up 2 hours                                                my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ %
```

7.

```
<p><em>Thank you for using nginx.</em></p>
</body>
</html>
rupalimahapatro@Rupalis-MacBook-Air ~ % curl localhost:80
curl: (7) Failed to connect to localhost port 80 after 0 ms: Couldn't connect to server
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED         STATUS         PORTS     NAMES
9a7382b2c89e   nginx:latest   "/docker-entrypoint.…"   2 minutes ago   Up 2 minutes   80/tcp    my-nginx
48f6ca74c16d   alpine         "/bin/sh"                2 hours ago     Up 2 hours               my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ % docker rm -f my-nginx
my-nginx
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps
CONTAINER ID   IMAGE     COMMAND     CREATED       STATUS       PORTS     NAMES
48f6ca74c16d   alpine    "/bin/sh"   2 hours ago   Up 2 hours             my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ % docker run -d -p 8080:80 --name my-nginx ngnix:latest
Unable to find image 'ngnix:latest' locally
docker: Error response from daemon: pull access denied for ngnix, repository does not exist or may require 'docker login'

Run 'docker run --help' for more information
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CONTAINER ID   IMAGE     COMMAND     CREATED       STATUS       PORTS     NAMES
48f6ca74c16d   alpine    "/bin/sh"   2 hours ago   Up 2 hours             my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ % docker run -d -P 8080:80 --name my-nginx ngnix:latest
Unable to find image '8080:80' locally
docker: Error response from daemon: pull access denied for 8080, repository does not exist or may require 'docker login'

Run 'docker run --help' for more information
rupalimahapatro@Rupalis-MacBook-Air ~ % docker run -d -P 8080:80 --name my-nginx nginx:latest
Unable to find image '8080:80' locally
docker: Error response from daemon: pull access denied for 8080, repository does not exist or may require 'docker login'

Run 'docker run --help' for more information
rupalimahapatro@Rupalis-MacBook-Air ~ % docker run -d -p 8080:80 --name my-nginx nginx:latest
13e9933fe4b928bfda31a2387e2105ca5affab59acfeeb34772fe800ec131e18
rupalimahapatro@Rupalis-MacBook-Air ~ % docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED         STATUS         PORTS                                      NAMES
13e9933fe4b9   nginx:latest   "/docker-entrypoint.…"   3 seconds ago   Up 3 seconds   0.0.0.0:8080->80/tcp, [::]:8080->80/tcp   my-nginx
48f6ca74c16d   alpine         "/bin/sh"                2 hours ago     Up 2 hours                                                my-alpine
rupalimahapatro@Rupalis-MacBook-Air ~ % curl localhost:8080
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
html { color-scheme: light dark; }
body { width: 35em; margin: 0 auto;
font-family: Tahoma, Verdana, Arial, sans-serif; }
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
<p>If you see this page, the nginx web server is successfully installed and
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<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
rupalimahapatro@Rupalis-MacBook-Air ~ %
```

8.

```
Run 'docker run --help' for more information
rupalimahapatro@Rupalis-MacBook-Air ~ % docker run -it --network my-network --name client alpine sh
/ # ping web-server
PING web-server (172.18.0.2): 56 data bytes
64 bytes from 172.18.0.2: seq=0 ttl=64 time=0.177 ms
64 bytes from 172.18.0.2: seq=1 ttl=64 time=0.254 ms
64 bytes from 172.18.0.2: seq=2 ttl=64 time=0.206 ms
64 bytes from 172.18.0.2: seq=3 ttl=64 time=0.195 ms
64 bytes from 172.18.0.2: seq=4 ttl=64 time=0.259 ms
64 bytes from 172.18.0.2: seq=5 ttl=64 time=0.244 ms
^C
--- web-server ping statistics ---
6 packets transmitted, 6 packets received, 0% packet loss
round-trip min/avg/max = 0.177/0.222/0.259 ms
/ # wget -wO- http://web-server
wget: unrecognized option: w
BusyBox v1.37.0 (2025-05-26 20:04:45 UTC) multi-call binary.

Usage: wget [-cqS] [--spider] [-O FILE] [-o LOGFILE] [--header STR]
        [--post-data STR | --post-file FILE] [-Y on/off]
        [-P DIR] [-U AGENT] [-T SEC] URL...

Retrieve files via HTTP or FTP

        --spider        Only check URL existence: $? is 0 if exists
        --header STR    Add STR (of form 'header: value') to headers
        --post-data STR Send STR using POST method
        --post-file FILE        Send FILE using POST method
        -c              Continue retrieval of aborted transfer
        -q              Quiet
        -P DIR          Save to DIR (default .)
        -S              Show server response
        -T SEC          Network read timeout is SEC seconds
        -O FILE         Save to FILE ('-' for stdout)
        -o LOGFILE      Log messages to FILE
        -U STR          Use STR for User-Agent header
        -Y on/off       Use proxy
/ # wget -qO- http://web-server
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
html { color-scheme: light dark; }
body { width: 35em; margin: 0 auto;
font-family: Tahoma, Verdana, Arial, sans-serif; }
</style>
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<body>
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<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
/ # exit
rupalimahapatro@Rupalis-MacBook-Air ~ %
```
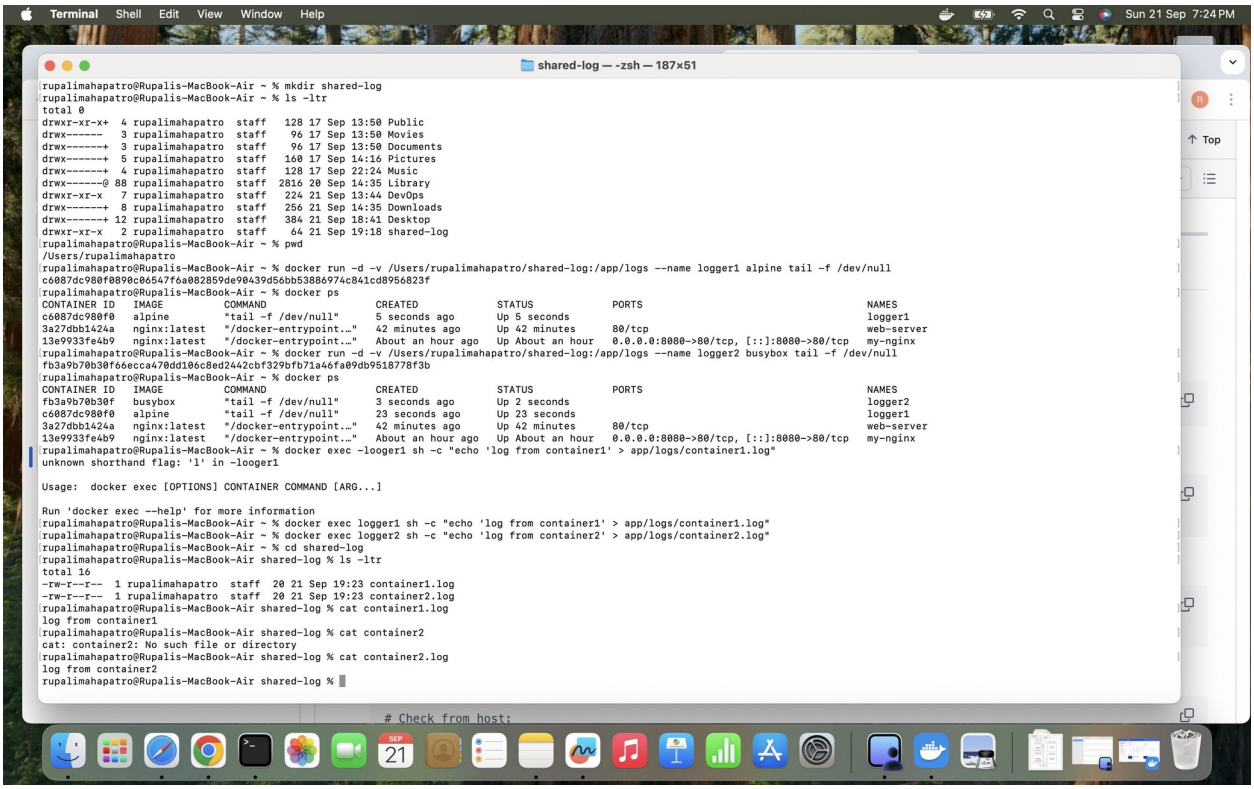

9. Why can containers ping each other by name in custom networks but not in the default bridge?

10. What happens when you try to access the web server from your host machine in the custom network?

Containers in a user-defined bridge are not exposed to the host. So, when we tried curl localhost:80 – it failed because port 80 inside the container isn’t exposed to the host.

11.



12.

```
rupalimahapatro@Rupalis-MacBook-Air flask-docker-app % ls -ltr
total 24
-rw-r--r--  1 rupalimahapatro  staff  385 21 Sep 21:48 app.py
-rw-r--r--  1 rupalimahapatro  staff   13 21 Sep 21:48 requirements.txt
-rw-r--r--  1 rupalimahapatro  staff  166 21 Sep 21:52 Dockerfile
rupalimahapatro@Rupalis-MacBook-Air flask-docker-app % docker build -t myflask-app:v1.0 .
[+] Building 2.5s (11/11) FINISHED                                                                                                  docker:desktop-linux
 => [internal] load build definition from Dockerfile                                                                                                0.0s
 => => transferring dockerfile: 205B                                                                                                                0.0s
 => [internal] load metadata for docker.io/library/python:3.11-slim                                                                                 2.3s
 => [auth] library/python:pull token for registry-1.docker.io                                                                                       0.0s
 => [internal] load .dockerignore                                                                                                                   0.0s
 => => transferring context: 2B                                                                                                                     0.0s
 => [1/5] FROM docker.io/library/python:3.11-slim@sha256:a0939570b38cddeb861b8e75d20b1c8218b21562b18f301171904b544e8cf228                           0.0s
 => => resolve docker.io/library/python:3.11-slim@sha256:a0939570b38cddeb861b8e75d20b1c8218b21562b18f301171904b544e8cf228                           0.0s
 => [internal] load build context                                                                                                                   0.0s
 => => transferring context: 63B                                                                                                                    0.0s
 => CACHED [2/5] WORKDIR /app                                                                                                                       0.0s
 => CACHED [3/5] COPY requirements.txt .                                                                                                            0.0s
 => CACHED [4/5] RUN pip install --no-cache-dir -r requirements.txt                                                                                 0.0s
 => CACHED [5/5] COPY app.py .                                                                                                                      0.0s
 => exporting to image                                                                                                                              0.1s
 => => exporting layers                                                                                                                             0.0s
 => => exporting manifest sha256:d4d78d1388d453fbc7ab2323fc11be7a1a40d3c6b290a6c39f60b3809ded3b3d                                                    0.0s
 => => exporting config sha256:c194c94d6713c162c0337eb5af2d4e0ddb0e8ebe53480f32bb1485606dda138a                                                     0.0s
 => => exporting attestation manifest sha256:a9a25efcd73ad054c68b0eee69b22600d6882d4fc7e77a3979208759b5acb948                                       0.0s
 => => exporting manifest list sha256:46be37174b59247b5eb14add280e73ec36a5144683125f069a62d6eb3be3375e                                              0.0s
 => => naming to docker.io/library/myflask-app:v1.0                                                                                                 0.0s
 => => unpacking to docker.io/library/myflask-app:v1.0                                                                                              0.1s
rupalimahapatro@Rupalis-MacBook-Air flask-docker-app % docker image ls
REPOSITORY    TAG       IMAGE ID       CREATED         SIZE
myflask-app   v1.0      46be37174b59   8 minutes ago   236MB
nginx         latest    d5f28ef21aab   5 weeks ago     281MB
alpine        latest    4bcff63911fc   2 months ago    13.3MB
busybox       latest    d82f458899c9   11 months ago   6.21MB
rupalimahapatro@Rupalis-MacBook-Air flask-docker-app % docker run -d -p 5000:5000 --name flask-app myflaskapp:v1.0
Unable to find image 'myflaskapp:v1.0' locally
docker: Error response from daemon: pull access denied for myflaskapp, repository does not exist or may require 'docker login'

Run 'docker run --help' for more information
rupalimahapatro@Rupalis-MacBook-Air flask-docker-app % docker run -d -p 5000:5000 --name flask-app myflask-app:v1.0
00c8c07edc4b6ed3a12d430f6263139181 3bfa3778a53fe9d2405f592adc9fc3
rupalimahapatro@Rupalis-MacBook-Air flask-docker-app % docker ps
CONTAINER ID   IMAGE             COMMAND                  CREATED          STATUS          PORTS                                       NAMES
00c8c07edc4b   myflask-app:v1.0  "python app.py"          3 seconds ago    Up 3 seconds    0.0.0.0:5000->5000/tcp, [::]:5000->5000/tcp flask-app
6a9832febae9   nginx:latest      "/docker-entrypoint.…"   17 minutes ago   Up 17 minutes   80/tcp                                      data2
09e2dc856767   alpine            "tail -f /dev/null"      20 minutes ago   Up 20 minutes                                               data1
fb3a9b70b30f   busybox           "tail -f /dev/null"      3 hours ago      Up 3 hours                                                  logger2
c6087dc980f0   alpine            "tail -f /dev/null"      3 hours ago      Up 3 hours                                                  logger1
3a27dbb1424a   nginx:latest      "/docker-entrypoint.…"   3 hours ago      Up 3 hours      80/tcp                                      web-server
13e9933fe4b9   nginx:latest      "/docker-entrypoint.…"   4 hours ago      Up 4 hours      0.0.0.0:8080->80/tcp, [::]:8080->80/tcp     my-nginx
rupalimahapatro@Rupalis-MacBook-Air flask-docker-app % curl localhost:5000
{
  "container_id": "00c8c07edc4b",
  "message": "Hello from Docker!"
}
rupalimahapatro@Rupalis-MacBook-Air flask-docker-app % curl localhost:5000/health
{
  "status": "healthy"
}
rupalimahapatro@Rupalis-MacBook-Air flask-docker-app %
```

Reflection Questions -

1. **Container vs VM:** Explain the key differences between Docker containers and virtual machines.

Containers share the resources of the host OS kernel while VM runs on a full OS on top of hypervisor.

Containers are

lightweight in nature as it has only app and dependencies are packaged while VM’s are heavyu.

Why do containers in custom bridge networks have DNS resolution while default bridge network containers don’t?

In Docker’s default bridge network, containers can only reach each other by IP, not by name, because Docker doesn’t enable DNS there while a custom bridge network, Docker runs an internal DNS (127.0.0.11) that automatically maps container names to their IPs.

When would you choose bind mounts over Docker volumes and vice versa?
when we need our container to directly reflect changes on the host filesystem we use bind mounts while when we want Docker to fully manage the data lifecycleWhen would you choose bind mounts over Docker volumes and vice versa?

.

. we use voulme.

What strategies could you use to reduce Docker image size?
To go for a smaller base image, copy only those things that is needed, install only necessary packages ,
What are three security best practices when building Docker images?
Only to use verified image, install only necessary packages ,
What additional considerations would you need for running containers in production?
Run containers as non-root , define resource limit(CPU.memory etc), configure load balancers, use of docker volumes.