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## Lab3

-Create your bridge network, two containers from ubuntu image with different names and try to ping each other using NAME.

- Using cli

```
C:\Users\hi55>docker network create --driver bridge my-bridge-net
47110ff99d3bd9cf7cac0910c474852e2d977b7e7a71130ae2b1bbf0b00fd0b6
```

```
C:\Users\hi55>docker network ls
NETWORK ID          NAME                DRIVER              SCOPE
29cf7db0c715        bridge              bridge              local
5aa5d6c79c57        host                host                local
47110ff99d3b        my-bridge-net       bridge              local
720b91579967        none                null                local

C:\Users\hi55>
```

Creating containers that attached to the created network

```
C:\Users\hi55>docker run -itd --name=ubuntu1 --network my-bridge-net ubuntu:latest
1e42bd6305ab5424eca4d57b539d4b814850556ce3e414b0f5cfd88247ac8f15

C:\Users\hi55>docker run -itd --name=ubuntu2 --network my-bridge-net ubuntu:latest
4fc9c0b1199480b700cbcc75bc0b350afa1f20a6e566980ff9f5659cc3b4cf53

C:\Users\hi55>docker ps -a
CONTAINER ID   IMAGE             COMMAND                  CREATED        STATUS              PORTS          NAMES
4fc9c0b11994   ubuntu:latest     "/bin/bash"             10 seconds ago Up 8 seconds           ubuntu2
1e42bd6305ab   ubuntu:latest     "/bin/bash"             18 seconds ago Up 16 seconds           ubuntu1
edcbab57148e   docker/getting-started "/docker-entrypoint..." 3 days ago    Exited (255) 2 days ago 0.0.0.0:80->80/tcp great_keldysh

C:\Users\hi55>
```

Then open the second container shell and update then install ping and ping the first container

```
C:\Users\hi55>docker exec -it ubuntu2 /bin/bash
```

```
root@4fc9c0b11994:/# apt-get update
Get:1 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy InRelease [270 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [914 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [108 kB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [23.2 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy/main amd64 Packages [1792 kB]
Get:8 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [908 kB]
Get:9 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [907 kB]
Get:10 http://archive.ubuntu.com/ubuntu jammy/restricted amd64 Packages [164 kB]
Get:11 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [266 kB]
Get:12 http://archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [17.5 MB]
Get:13 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1148 kB]
Get:14 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1251 kB]
Get:15 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [962 kB]
Get:16 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [28.6 kB]
Get:17 http://archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [49.0 kB]
Get:18 http://archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [23.3 kB]
Fetched 26.5 MB in 1min 26s (307 kB/s)
Reading package lists... Done
```

```
root@4fc9c0b11994:/# apt-get install -y iputils-ping
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libcap2-bin libpam-cap
The following NEW packages will be installed:
  iputils-ping libcap2-bin libpam-cap
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 76.8 kB of archives.
After this operation, 230 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 libcap2-bin amd64 1:2.44-1build3 [26.0 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 iputils-ping amd64 3:20211215-1 [42.9 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy/main amd64 libpam-cap amd64 1:2.44-1build3 [7932 B]
Fetched 76.8 kB in 2s (43.6 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package libcap2-bin.
(Reading database ... 4395 files and directories currently installed.)
Preparing to unpack .../libcap2-bin_1%3a2.44-1build3_amd64.deb ...
Unpacking libcap2-bin (1:2.44-1build3) ...
Selecting previously unselected package iputils-ping.
Preparing to unpack .../iputils-ping_3%3a20211215-1_amd64.deb ...
Unpacking iputils-ping (3:20211215-1) ...
Selecting previously unselected package libpam-cap:amd64.
Preparing to unpack .../libpam-cap_1%3a2.44-1build3_amd64.deb ...
Unpacking libpam-cap:amd64 (1:2.44-1build3) ...
Setting up libcap2-bin (1:2.44-1build3) ...
Setting up libpam-cap:amd64 (1:2.44-1build3) ...
debconf: unable to initialize frontend: Dialog
debconf: (No usable dialog-like program is installed, so the dialog based frontend cannot be used. at /usr/share/perl5/Debconf/FrontEnd/Dialog.pm line 78.)
debconf: falling back to frontend: Readline
debconf: unable to initialize frontend: Readline
debconf: (Can't locate Term/Readline.pm in @INC (you may need to install the Term::Readline module) (@INC contains: /etc/perl /usr/local/lib/x86_64-linux-gnu/perl/5.34.0 /usr/local/share/perl/5.34.0 /usr/lib/x86_64-linux-gnu/perl5/5.34 /usr/share/perl5 /usr/lib/x86_64-linux-gnu/perl-base /usr/lib/x86_64-linux-gnu/perl/5.34 /usr/share/perl/5.34 /usr/local/lib/site_perl) at /usr/share/perl5/Debconf/FrontEnd/Readline.pm line 7.)
debconf: falling back to frontend: Teletype
Setting up iputils-ping (3:20211215-1) ...
```

```
root@4fc9c0b11994:/# ping ubuntu1
PING ubuntu1 (172.18.0.2) 56(84) bytes of data.
64 bytes from ubuntu1.my-bridge-net (172.18.0.2): icmp_seq=1 ttl=64 time=0.131 ms
64 bytes from ubuntu1.my-bridge-net (172.18.0.2): icmp_seq=2 ttl=64 time=0.176 ms
64 bytes from ubuntu1.my-bridge-net (172.18.0.2): icmp_seq=3 ttl=64 time=0.159 ms
64 bytes from ubuntu1.my-bridge-net (172.18.0.2): icmp_seq=4 ttl=64 time=0.155 ms
^C
--- ubuntu1 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3060ms
rtt min/avg/max/mdev = 0.131/0.155/0.176/0.016 ms
```

- Using Docker Compose File

docker-compose.yml - Notepad

File Edit Format View Help

```
version: '3'
services:
  serv1:
    image: ubuntu
    container_name: ubuntu1
    networks:
      new-net:

  serv2:
    image: ubuntu
    container_name: ubuntu2
    networks:
      new-net:
    restart: always
    command: bash -c "apt-get update && apt-get install -y iputils-ping && ping -c 4 ubuntu2"

networks:
  new-net:
    driver: bridge
```

C:\Users\hi55\Documents>docker compose up

[+] Running 3/3

- Network documents_new-net	Created	0.7s
- Container ubuntu2	Created	0.2s
- Container ubuntu1	Created	0.2s

Attaching to ubuntu1, ubuntu2

ubuntu1 exited with code 0

```
ubuntu2 | Setting up iputils-ping (3:20211215-1) ...
ubuntu2 | PING ubuntu2 (172.22.0.2) 56(84) bytes of data.
ubuntu2 | 64 bytes from 54879acbd720 (172.22.0.2): icmp_seq=1 ttl=64 time=0.033 ms
ubuntu2 | 64 bytes from 54879acbd720 (172.22.0.2): icmp_seq=2 ttl=64 time=0.101 ms
ubuntu2 | 64 bytes from 54879acbd720 (172.22.0.2): icmp_seq=3 ttl=64 time=0.044 ms
ubuntu2 | 64 bytes from 54879acbd720 (172.22.0.2): icmp_seq=4 ttl=64 time=0.159 ms
ubuntu2 |
ubuntu2 | --- ubuntu2 ping statistics ---
ubuntu2 | 4 packets transmitted, 4 received, 0% packet loss, time 3097ms
ubuntu2 | rtt min/avg/max/mdev = 0.033/0.084/0.159/0.050 ms
ubuntu2 |
ubuntu2 exited with code 0
```