# TECHNIQUE :7

Step 1: Check the Networks - (Default: host, none and bridge)

docker network ls

Step 2: Create a user-defined network:

docker network create first_network

```
1RV24MC089_SAHANA_H_J@sahana: ~                                    ×
1RV24MC089_SAHANA_H_J@sahana:~$ docker network ls
NETWORK ID      NAME        DRIVER      SCOPE
ab50ca925e5b    bridge      bridge      local
38910ce92655    host        host        local
d49a0bdb4fe2    none        null        local
1RV24MC089_SAHANA_H_J@sahana:~$ docker network create first_network
1f37b043301f5d76dbb82f65fe29c015d9546587a6a7e602f55685d6ede2971b
1RV24MC089_SAHANA_H_J@sahana:~$ docker images
REPOSITORY      TAG         IMAGE ID        CREATED         SIZE
lab2            latest      a25b63fd38c8    2 days ago      122MB
lab1            latest      427ed29ab0d0    2 days ago      133MB
second          latest      e2c0c87ad429    4 days ago      143MB
hello-world     latest      1b44b5a3e06a    2 months ago    10.1kB
```

Step 3: Create two containers (in separate shells)

docker run --name container1 -it ubuntu:latest

```
1RV24MC089_SAHANA_H_J@sahana:~$ docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
4b3ffd8ccb52: Already exists
Digest: sha256:66460d557b25769b102175144d538d88219c077c678a49af4afca6fbfc1b5252
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
1RV24MC089_SAHANA_H_J@sahana:~$ docker images
REPOSITORY      TAG       IMAGE ID        CREATED       SIZE
lab2            latest    a25b63fd38c8    2 days ago    122MB
lab1            latest    427ed29ab0d0    2 days ago    133MB
second          latest    e2c0c87ad429    4 days ago    143MB
ubuntu          latest    97bed23a3497    4 weeks ago   78.1MB
hello-world     latest    1b44b5a3e06a    2 months ago  10.1kB
1RV24MC089_SAHANA_H_J@sahana:~$ docker run --name con1 -it ubuntu
root@a64b6e2edbe7:/# exit
exit
```

docker run --name container2 -it ubuntu:latest

```
1RV24MC089_SAHANA_H_J@sahana:~$ docker network connect first_network con1
1RV24MC089_SAHANA_H_J@sahana:~$ docker network connect first_network con2
1RV24MC089_SAHANA_H_J@sahana:~$ docker network inspect first_network
```

Step 4: Inspect the Network - my_network (find the connected containers inside the Containers)
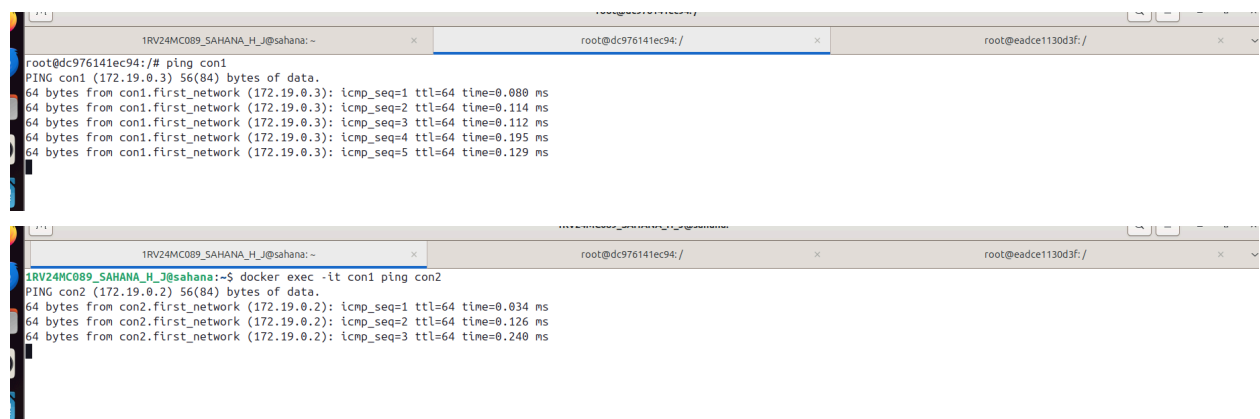
docker network inspect my_network

```
1RV24MC089_SAHANA_H_J@sahana:~$ docker network inspect first_network
[
    {
        "Name": "first_network",
        "Id": "1f37b043301f5d76dbb82f65fe29c015d9546587a6a7e602f55685d6ede2971b",
        "Created": "2025-10-31T20:34:46.134380813+05:30",
        "Scope": "local",
        "Driver": "bridge",
        "EnableIPv4": true,
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": {},
            "Config": [
                {
                    "Subnet": "172.19.0.0/16",
                    "Gateway": "172.19.0.1"
                }
            ]
        },
        "Internal": false,
        "Attachable": false,
        "Ingress": false,
        "ConfigFrom": {
            "Network": ""
        },
        "ConfigOnly": false,
        "Containers": {
            "dc976141ec94be96d876f3d7c6cda787a13a9230f052478cadae172a0e56d05e": {
                "Name": "con2",
                "EndpointID": "4b712193601ced65aad4a586b02e313b1165ec85bed84d01b38d4b63e6e82092",
                "MacAddress": "32:c2:74:3e:53:a9",
                "IPv4Address": "172.19.0.2/16",
                "IPv6Address": ""
            },
            "eadce1130d3f4f329069269405d32ff2f19a1d09bd954127cf81059f3efcb871": {
                "Name": "con1",
                "EndpointID": "47336bec247a0515e1b7d9a0aee314ecfa7c2b549193a128dfc432d3c0baf0d3",
                "MacAddress": "2e:62:91:12:2d:de",
                "IPv4Address": "172.19.0.3/16",
                "IPv6Address": ""
            }
        },
```
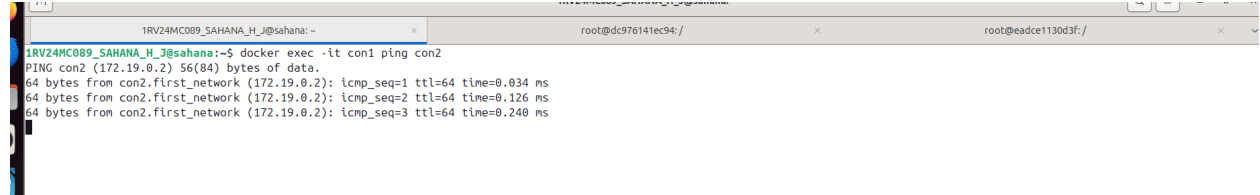
## Step 5: install ping

```
root@dc976141ec94:/# apt 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 2 not upgraded.
Need to get 91.2 kB of archives.
After this operation, 322 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libcap2-bin amd64 1:2.66-5ubuntu2.2 [34.2 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 iputils-ping amd64 3:20240117-1ubuntu0.1 [44.6 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libpam-cap amd64 1:2.66-5ubuntu2.2 [12.5 kB]
Fetched 91.2 kB in 2s (39.9 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package libcap2-bin.
(Reading database ... 4381 files and directories currently installed.)
Preparing to unpack .../libcap2-bin_1%3a2.66-5ubuntu2.2_amd64.deb ...
Unpacking libcap2-bin (1:2.66-5ubuntu2.2) ...
Selecting previously unselected package iputils-ping.
Preparing to unpack .../iputils-ping_3%3a20240117-1ubuntu0.1_amd64.deb ...
Unpacking iputils-ping (3:20240117-1ubuntu0.1) ...
Selecting previously unselected package libpam-cap:amd64.
Preparing to unpack .../libpam-cap_1%3a2.66-5ubuntu2.2_amd64.deb ...
Unpacking libpam-cap:amd64 (1:2.66-5ubuntu2.2) ...
Setting up libcap2-bin (1:2.66-5ubuntu2.2) ...
Setting up libpam-cap:amd64 (1:2.66-5ubuntu2.2) ...
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 79.)
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 entries checked: /etc/perl /usr/local/lib/x86_64-linux-gnu/perl/5.38.2 /usr/l
ocal/share/perl/5.38.2 /usr/lib/x86_64-linux-gnu/perl5/5.38 /usr/share/perl5 /usr/lib/x86_64-linux-gnu/perl-base /usr/lib/x86_64-linux-gnu/perl/5.38 /usr/share/perl/5.38 /usr/local/li
b/site_perl) at /usr/share/perl5/Debconf/FrontEnd/Readline.pm line 8.)
debconf: falling back to frontend: Teletype
Setting up iputils-ping (3:20240117-1ubuntu0.1) ...
root@dc976141ec94:/#
```

## Step 6: Ping the containers using

## docker exec -it container1 ping container2