## CONTAINER ORCHESTRATION INFRASTRUCTURE AUTOMATION LAB

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BATCH-05

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## **Docker Networking**

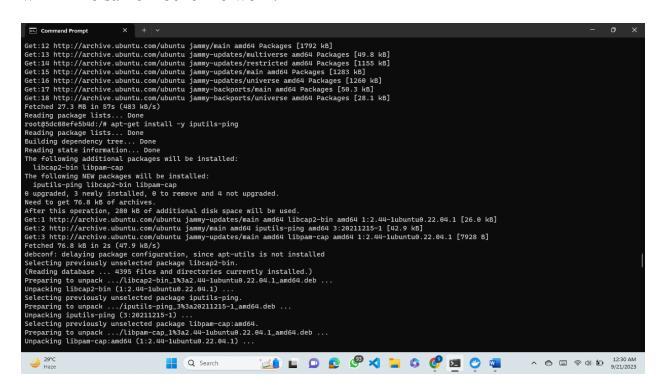
- Check the available Networks. Create a default bridge network, retrieve the information of this network created. Now create a container for Ubuntu, check the network for this container. It will be bridge, by default. Use ping command. Then disconnect and remove the container.
- Repeat the same steps for a user-defined network.

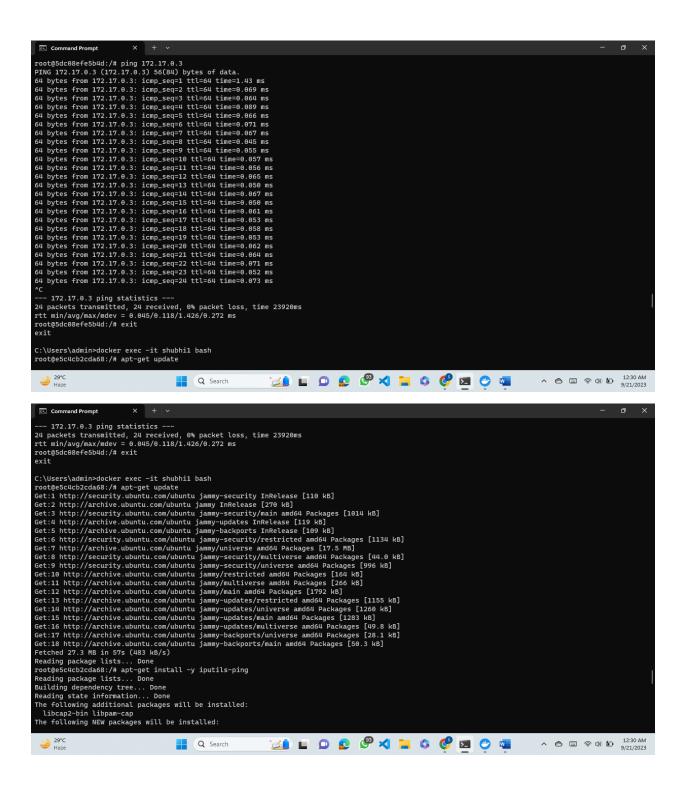
## Default Bridge

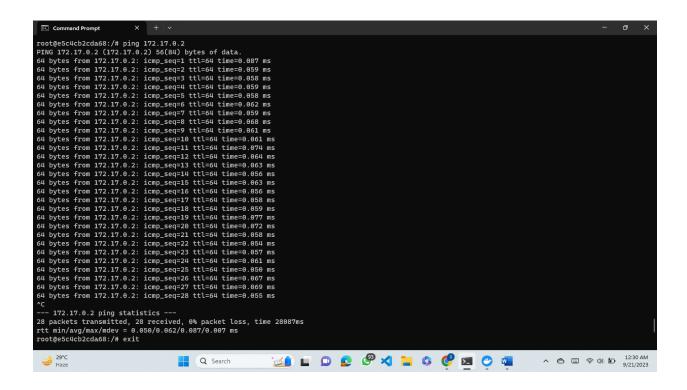
```
Microsoft Windows [Version 10.0.22621.2283]
(c) Microsoft Corporation. All rights reserved.
C:\Users\admin
NETWORK ID NAME
16ba00d796e2 bridge
16ba00dc82b host
 C:\Users\admin>docker network ls
                                                           bridge
                                                                                   local
                                                           host
null
                                                                                  local
C:\Users\admin>docker run -dt --name=shubhi ubuntu
5dc08efe5b4dd1dea8cce57fe6544899e7d786c20403213360b2bf2171e639f7
C:\Users\admin>docker run -dt --name=shubhi1 ubuntu
e5c4cb2cda68e852a4d92b7e8f5f69ad8c3457406f099abae2b960339ac5fe9a
 C:\Users\admin>docker inspect shubhi
                  "Id": "5dc08efe5b4dd1dea8cce57fe6544899e7d786c20403213360b2bf2171e639f7",
"Created": "2023-09-20T18:54:13.413390193Z",
"Path": "/bin/bash",
"Args": [],
"State": {
    "Status": "running",
    "Running": true,
    "Paused": false,
    "OoMkilled": false,
    "OoMkilled": false,
    "Dead": false,
    "Pid": 12364,
    "ExitCode": 0,
    "Error": "",
    "StattedAt": "2023-09-20T18:54:14.371365613Z",
    "FinishedAt": "0001-01-01T00:00:00Z"
},
                                                                                                                                      🚧 🖬 🖸 👂 🦃 刘 들 🐧 🥩 🗷 💍 👊
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                                                "Aliases": null,
                                               "Aliases": null,
"NetworkID": "16ba00d796e28a63b73d25dcbd0c6f7b13929a81ea1331984057fef011009568",
"EndpointID": "316b7ac3809043ea6d735e39a6a312449114d6fb2d420d3cf6ca5d6ea1c7543c",
"Gateway": "172.17.0.1",
"IPAddress": "172.17.0.2",
"IPPrefixLen": 16,
"IPV6Gateway": "",
"GlobalTPv6Address": "",
"GlobalTPv6PrefixLen": 0,
"MacAddress": "02:42:ac:11:00:02",
"DriverOpts": null
  C:\Users\admin>docker inspect shubhi1
                  "Id": "e5c4cb2cda68e852a4d92b7e8f5f69ad8c3457406f099abae2b960339ac5fe9a",
"Created": "2023-09-20T18:54:18.348179857Z",
"Path": "/bin/bash",
"Args": [],
"State": {
    "5tatus": "running",
    "Running": true,
    "Paused": false,
    "00Mxilled": false,
    "Dead": false,
    "Dead": 12429,
    "Extrode": 0,
    "Error": "",
    "StartedAt": "2023-09-20T18:54:18.775366751Z",
                                                                                                                                      🚧 🖬 🖸 👂 🗳 📜 🐧 🤡 🗷 💍 🐠
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Haze
                                                                                  Q Search
```

```
"Aliases": null,
"NetworkD1: "ishoa0d790e28a63b73d25dcbdoc6f7b13929a81ea1331984067fef811009568",
"EndpointID": "9d01c0dcr08d6bf7a7c0f7fec4leca9d015cdfa7fa6f951ca88581f97d5eeb5718",
"Salvesy": "172.17.0.3",
"IPPddiress": "172.17.0.3",
"IPPdGateway": "",
"GlobalIPv0Addfress": ",
"GlobalIPv0Addfress": ",
"GlobalIPv0Addfress": ",
"GlobalIPv0Addfress": null,
"Bacddfress": "0,"
"Bacddfress": "1,"
"Bacddfress*: "1,"
```

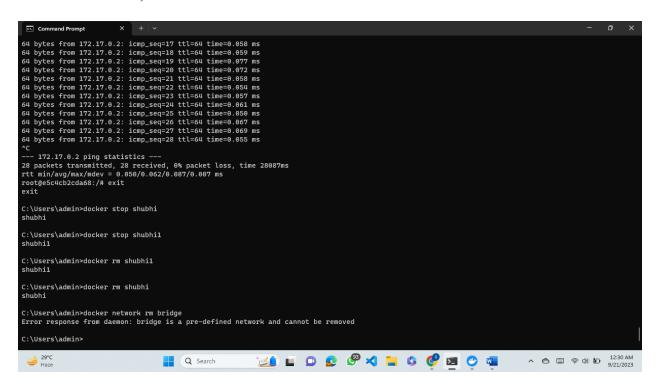
The ping command is used to test network connectivity between two containers within the same Docker network.





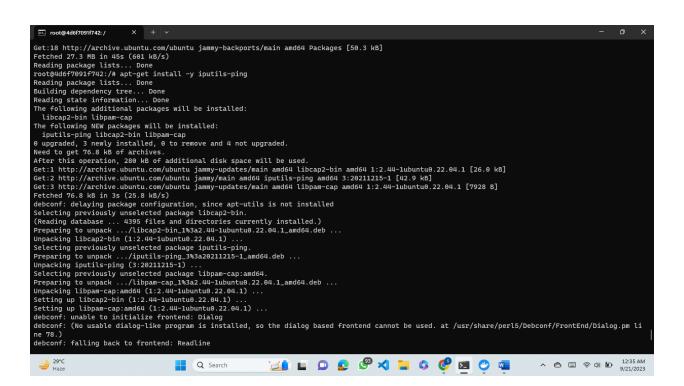


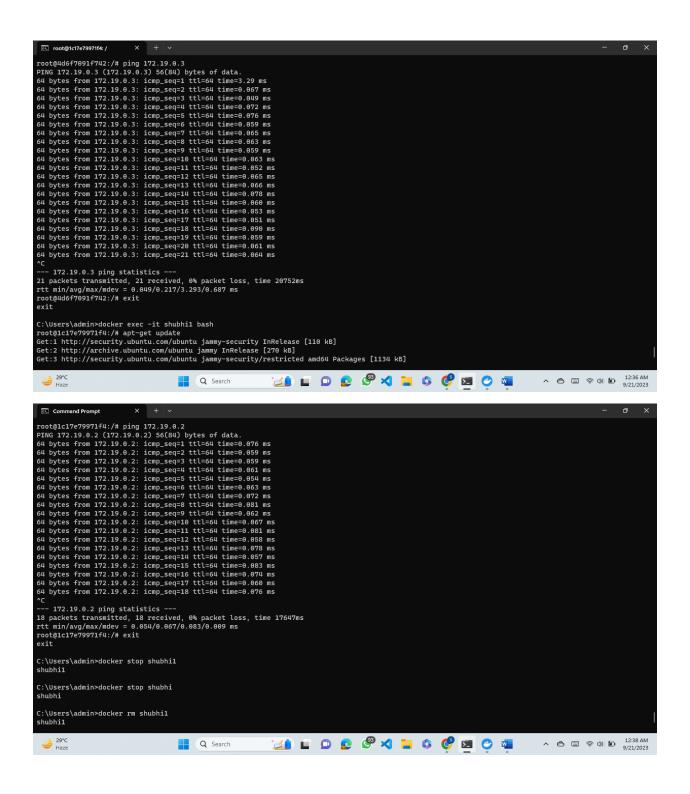
Initially, remove the container, and then, remove the network. Since it's the default network, it will not be removed.



## User-Defined Bridge

```
C:\Users\admin>docker network create --driver=bridge my-net
c12880c40083cb23deff6f833ba861c9d8b352a6c91ad2e2ef7c7774c802ac3f
C:\Users\admin>docker run -dt --name=shubhi ubuntu
4d6f7091f742d866c013fe62879d0b839c67ba5e9fc38a75b7f2951f0fbb6e01
C:\Users\admin>docker run -dt --name=shubhi1 ubuntu
lc17e79971f4e9c2eb0d48b67849e5c4ad64d2753b456e44ce2790e0423b7137
C:\Users\admin>docker network connect my-net shubhi
C:\Users\admin>docker network connect my-net shubhil
C:\Users\admin>docker inspect shubhi
           "Id": "446f7091f742d866c013fe62879d0b839c67ba5e9fc38a75b7f2951f0fbb6e01",
"Created": "2023-09-20T19:01:35.619046152Z",
"Path": "/bin/bash",
"Args": [],
"State": {
    "Status": "running",
    "Running": true,
    "Paused": false,
    "Partanting": false,
    "Partanting": false,
                  "Restarting": false,
"OOMKilled": false,
                  "Dead": false,
"Pid": 13910,
                  "PIG": 13910,
"ExitCode": 0,
"Error": "",
"StartedAt": "2023-09-20719:01:36.151920914Z",
"FinishedAt": "0001-01-01700:00:00Z"
           },
"Image": "sha256:c6b84b685f35f1a5d63661f5d4aa662ad9b7ee4f4b8c394c022f25023c907b65",
"ResolvConfPath": "/var/lib/docker/containers/4d6f7091f742d866c013fe62879d0b839c67ba5e9fc38a75b7f2951f0fbb6e01/resolv.conf",
                                                                                     🚧 🖬 🗅 👂 🥙 刘 들 🐧 🥩 🗷 💍 📲
                                                                                                                                                                                       ^ 	☐ ☐ ♠ Φ to 12:33 AM 9/21/2023
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                              "DriverOpts": null
                        },
"my-net": {
"TDAMCor
                             "IPAMConfig": {},
"Links": null,
"Aliases": [
"4d6f7091f742"
                             "GlobalIPv6PrefixLen": 0,
"MacAddress": "02:42:ac:13:00:02",
"DriverOpts": {}
C:\Users\admin>docker inspect shubhi1
            "Id": "1c17e79971f4e9c2eb0d48b67849e5c4ad64d2753b456e44ce2790e0423b7137",
           "Created": "2023-09-20T19:01:39.5682878612",
"Path": "/bin/bash",
"Args": [],
"State": {
                  "Status": "running",
                  "Running": true,
"Paused": false,
                                                                                     <u>☑</u> 🔲 🔘 🙋 🚱 刘 🤚 🐧 🍪 💇 🗷 💍 🚾 ^ ♠ 🖾 🕾 ♠ 0) ₺ 12:33 AM
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```





Since the bridge network is user-defined, we can remove it.

