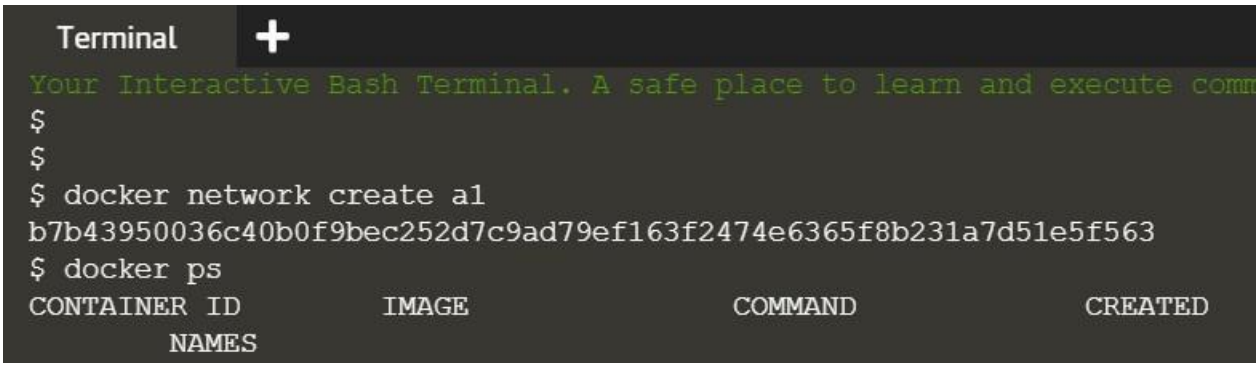
EXPERIMENT - 3

Check if any container is running

Run command – $ docker ps



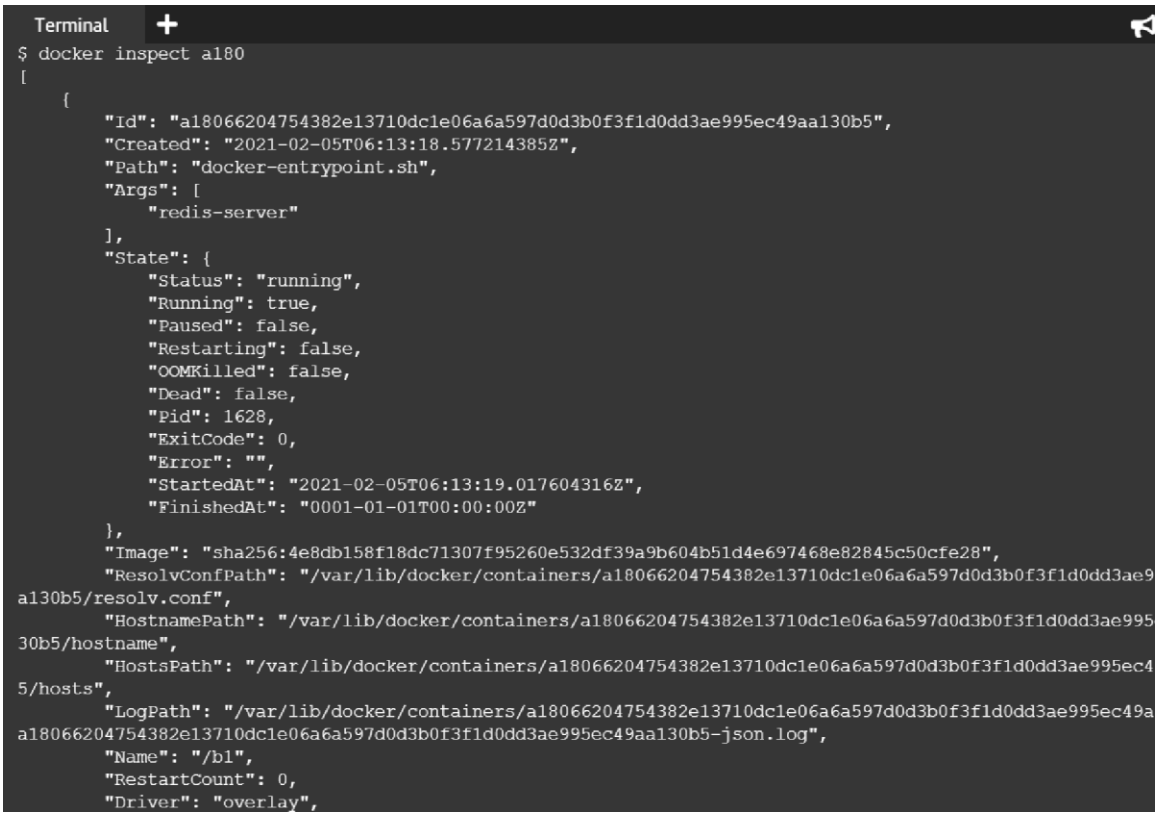
Creating a container

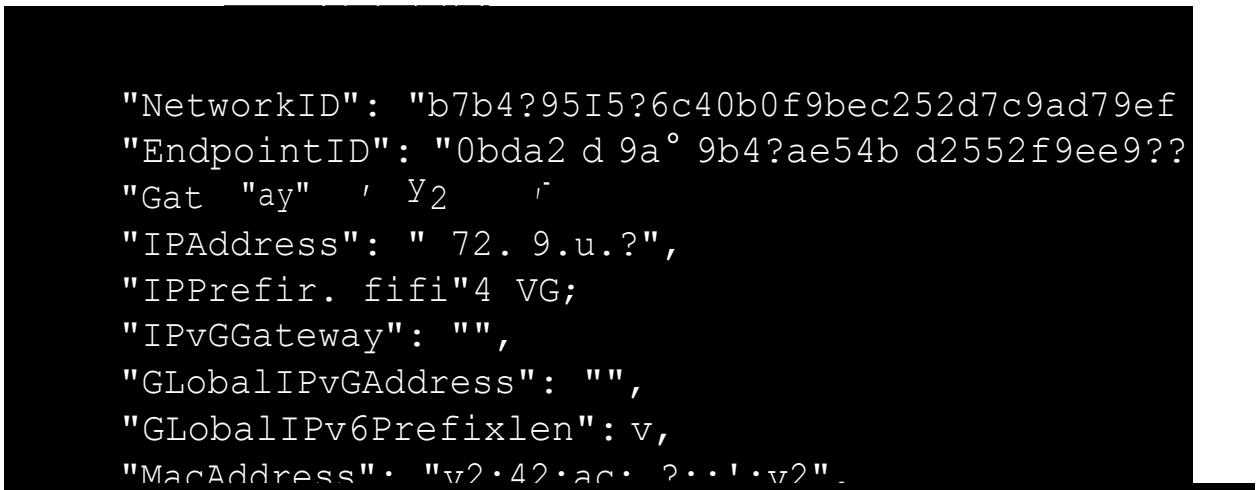
Run command – $ docker run –d –name=b1 –net=a1 redis

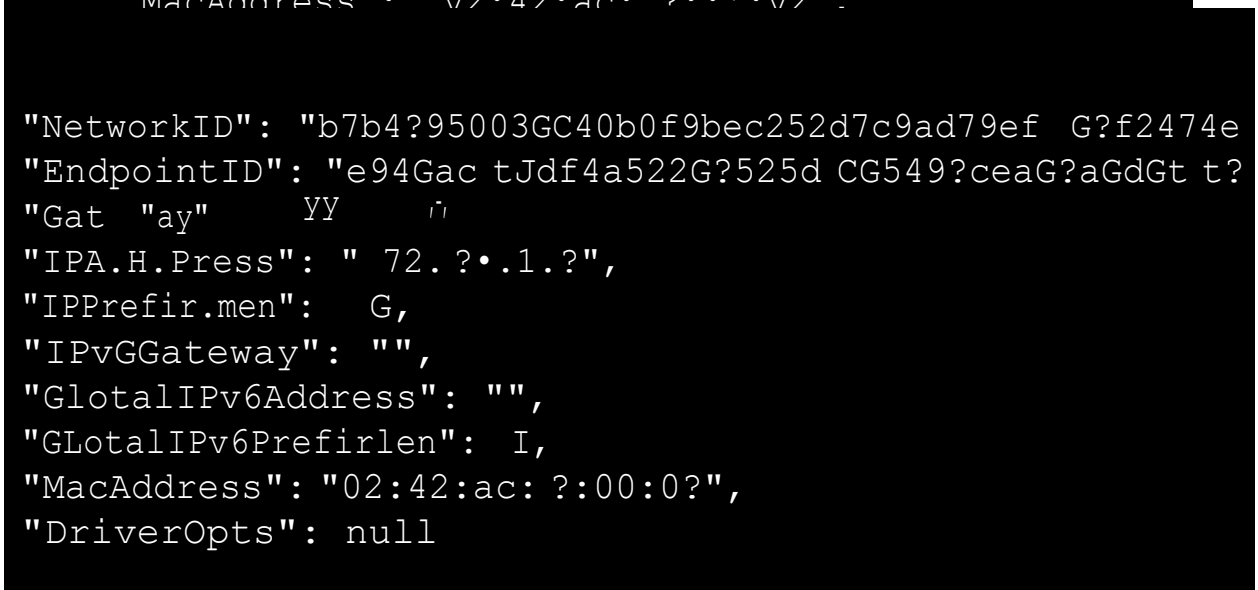
To check IP address

Run command - $ docker inspect a180

(Note : a180 is unique initials of container ID you want ip)


Terminal
$ docker inspect a180
[
{
"Id": "a18066204754382e13710dc1e06a6a597d0d3b0f3f1d0dd3ae995ec49aa130b5",
"Created": "2021-02-05T06:13:18.5772143852",
"Path": "docker-entrypoint.sh",
"Args": [
"redis-server"
],
"State": {
"Status": "running",
"Running": true,
"Paused": false,
"Restarting": false,
"OOMKilled": false,
"Dead": false,
"Pid": 1628,
"ExitCode": 0,
"Error": "",
"StartedAt": "2021-02-05T06:13:19.017604316Z",
"FinishedAt": "0001-01-01T00:00:00Z"
},
"Image": "sha256:4e8db158f18dc71307f95260e532df39a9b604b51d4e697468e82845c50cfe28",
"ResolvConfPath": "/var/lib/docker/containers/a18066204754382e13710dc1e06a6a597d0d3b0f3f1d0dd3ae9
a130b5/resolv.conf",
"HostnamePath": "/var/lib/docker/containers/a18066204754382e13710dc1e06a6a597d0d3b0f3f1d0dd3ae995
30b5/hostname",
"HostsPath": "/var/lib/docker/containers/a18066204754382e13710dc1e06a6a597d0d3b0f3f1d0dd3ae995ec4
5/hosts",
"LogPath": "/var/lib/docker/containers/a18066204754382e13710dc1e06a6a597d0d3b0f3f1d0dd3ae995ec49a
a18066204754382e13710dc1e06a6a597d0d3b0f3f1d0dd3ae995ec49aa130b5-json.log",
"Name": "/b1",
"RestartCount": 0,
"Driver": "overlay",


"NetworkID": "b7b4?95I5?6c40b0f9bec252d7c9ad79ef
"EndpointID": "0bda2 d 9a° 9b4?ae54b d2552f9ee9??
"Gat "ay" ' y2
"IPAddress": " 72. 9.u.?",
"IPPrefir. fifi"4 VG;
"IPvGGateway": "",
"GLobalIPvGAddress": "",
"GLobalIPv6Prefixlen": v,
"MacAddress": "v2·42·ac· ?··'·v2",


"NetworkID": "b7b4?95003GC40b0f9bec252d7c9ad79ef G?f2474e
"EndpointID": "e94Gac tJdf4a522G?525d CG549?ceaG?aGdGt t?
"Gat "ay" yy
"IPA.H.Press": " 72.?•.1.?",
"IPPrefir.men": G,
"IPvGGateway": "",
"GlotalIPv6Address": "",
"GLotalIPv6Prefirlen": I,
"MacAddress": "02:42:ac: ?:00:0?",
"DriverOpts": null

```
$ docker network create nw1
70e131726e7c2c29a86439b51a9a3dedbba56116b9411e7e8b0ae8701068cf4d
$ docker network ls
NETWORK ID          NAME                DRIVER              SCOPE
b7b43950036c        a1                  bridge              local
cccd0d1b9c8e        backend-network     bridge              local
f35aae151499        bridge              bridge              local
0c288d2ed25a        host                host                local
4d3221fe852b        none                null                local
70e131726e7c        nw1                 bridge              local
$ docker run -d --name=c1 --net==nw1 alpine
623eb7f294e06a1f1a49f0e1c10b60e1b02ac17f00d82d42e1050c722bebee80
docker: Error response from daemon: network =nw1 not found.
$ docker run -d --name=c1 --net=nw1 alpine
docker: Error response from daemon: Conflict. The container name "/c1" is already in use by container
4e06a1f1a49f0e1c10b60e1b02ac17f00d82d42e1050c722bebee80". You have to remove (or rename) that contai
le to reuse that name.
See 'docker run --help'.
$ docker run -d --name=c2 --net=nw1 alpine
3fd9374cbcd6f32ee5169c0bbc74492593234b5431e6525eb32939248fdcc19c
$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS
            NAMES
b65148c352c1        redis               "docker-entrypoint.s…"   6 minutes ago       Up 6 minutes
p           redis
09a58dd178a1        redis               "docker-entrypoint.s…"   10 minutes ago      Up 10 minutes
p           b3
f51909d84c7d        redis               "docker-entrypoint.s…"   13 minutes ago      Up 12 minutes
p           b2
a18066204754        redis               "docker-entrypoint.s…"   18 minutes ago      Up 18 minutes
p           b1
$ docker ps -a
```

Ping network

```
$ docker run --name=c3 --net=backend-network alpine ping redis
```

```
$ docker run --name=c3 --net=backend-network alpine ping redis
PING redis (172.20.0.2): 56 data bytes
64 bytes from 172.20.0.2: seq=0 ttl=64 time=0.152 ms
64 bytes from 172.20.0.2: seq=1 ttl=64 time=0.097 ms
64 bytes from 172.20.0.2: seq=2 ttl=64 time=0.086 ms
64 bytes from 172.20.0.2: seq=3 ttl=64 time=0.139 ms
64 bytes from 172.20.0.2: seq=4 ttl=64 time=0.090 ms
64 bytes from 172.20.0.2: seq=5 ttl=64 time=0.120 ms
64 bytes from 172.20.0.2: seq=6 ttl=64 time=0.097 ms
64 bytes from 172.20.0.2: seq=7 ttl=64 time=0.109 ms
64 bytes from 172.20.0.2: seq=8 ttl=64 time=0.128 ms
64 bytes from 172.20.0.2: seq=9 ttl=64 time=0.135 ms
64 bytes from 172.20.0.2: seq=10 ttl=64 time=0.153 ms
64 bytes from 172.20.0.2: seq=11 ttl=64 time=0.121 ms
64 bytes from 172.20.0.2: seq=12 ttl=64 time=0.102 ms
64 bytes from 172.20.0.2: seq=13 ttl=64 time=0.092 ms
```

```
$ docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS
            NAMES
860f5e151296        alpine              "ping redis"        About a minute ago  Up About a minute
```

Create a network

$ docker network create backend-network

```
$ docker network create backend-network
1dbc0e12f98214e52a76ae34082cd6cfec750186935dc2ee7bc29e0896c9b788
$ docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS
        NAMES
$ docker run -d --name=redis --net=backend-network redis
a695e68f0304cc2a09206eacd5b860def7f1fbc481f0fd7d11a5bf7867f1a151
$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS              PORT
            NAMES
a695e68f0304        redis               "docker-entrypoint.s…"   9 seconds ago       Up 7 seconds        6379
p           redis
```

```
$ docker run --net=backend-network alpine cat /etc/resolv.conf
nameserver 127.0.0.11
options ndots:0
$ docker run --net=backend-network alpine ping -c1 redis
PING redis (172.19.0.2): 56 data bytes
64 bytes from 172.19.0.2: seq=0 ttl=64 time=0.144 ms

--- redis ping statistics ---
1 packets transmitted, 1 packets received, 0% packet loss
round-trip min/avg/max = 0.144/0.144/0.144 ms
$
```

Create a network

$ docker network create frontend-network

```
$ docker network create frontend-network
9a5cb2c53263ea87ad3a48a7e11110e3fb7fbf203e98b294aea987400add6d19
$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATU
            NAMES
a695e68f0304        redis               "docker-entrypoint.s…"   6 minutes ago       Up 6
p           redis
$ docker inspect redis
[
    {
        "Id": "a695e68f0304cc2a09206eacd5b860def7f1fbc481f0fd7d11a5bf7867f1a151",
        "Created": "2021-02-05T06:41:08.934384463Z",
```

```
},
"NetworkMode": "backend-network",
"PortBindings": {},
"RestartPolicy": {
    "Name": "no",
    "MaximumRetryCount": 0
```

```
"Networks": {
    "backend-network": {
        "IPAMConfig": null,
        "Links": null,
        "Aliases": [
            "a695e68f0304"
        ],
        "NetworkID": "1dbc0e12f98214e52a76ae34082cd6cfec7501
        "EndpointID": "3c5c86fbc51672fb30ad80134edb0411650e6
        "Gateway": "172.19.0.1",
        "IPAddress": "172.19.0.2",
        "IPPrefixLen": 16,
        "IPv6Gateway": "",
        "GlobalIPv6Address": "",
        "GlobalIPv6PrefixLen": 0,
        "MacAddress": "02:42:ac:13:00:02",
        "DriverOpts": null
    },
    "frontend-network": {
        "IPAMConfig": {},
        "Links": null,
        "Aliases": [
            "a695e68f0304"
        ],
        "NetworkID": "9a5cb2c53263ea87ad3a48a7e11110e3fb7fbf
        "EndpointID": "4d37cb45fd39d23b7d24da3280962608f8316
        "Gateway": "172.20.0.1",
        "IPAddress": "172.20.0.2",
        "IPPrefixLen": 16,
        "IPv6Gateway": "",
        "GlobalIPv6Address": "",
        "GlobalIPv6PrefixLen": 0,
```


```
$ docker run -d -p 3000:3000 --net=frontend-network
katacoda/redis-node- docker-example
```

```
$ docker run -d -p 3000:3000 --net=frontend-network katacoda/redis-node-docker-example
Unable to find image 'katacoda/redis-node-docker-example:latest' locally
latest: Pulling from katacoda/redis-node-docker-example
12b41071e6ce: Pull complete
a3ed95caeb02: Pull complete
49a025abf7e3: Pull complete
1fb1c0be01ab: Pull complete
ae8c1f781cde: Pull complete
db73207ad2ae: Pull complete
446b13034c13: Pull complete
Digest: sha256:1aae9759464f00953c8e078a0e0d0649622fef9dd5655b1491f9ee589ae904b4
Status: Downloaded newer image for katacoda/redis-node-docker-example:latest
79eb06d49f6487b71ebbc1cdef8a4ef5cc71920685e7be30cd4b9824df8493e0
$ curl docker:3000
This page was generated after talking to redis.

Application Build: 1

Total requests: 1

IP count:
    ::ffff:172.17.0.58: 1
```

To create a network

$ docker network create frontend-network

```
$ docker network create frontend-network2
e58e9123a83f5f264e5c39bee58fd22a55c7c8366e76233254e8817695e77c35
$ docker network connect --alias db frontend-network2 redis
$ docker run --net=frontend-network2 alpine ping -c1 db
PING db (172.21.0.2): 56 data bytes
64 bytes from 172.21.0.2: seq=0 ttl=64 time=0.204 ms

--- db ping statistics ---
1 packets transmitted, 1 packets received, 0% packet loss
round-trip min/avg/max = 0.204/0.204/0.204 ms
$
```

```
$ docker network ls
NETWORK ID          NAME                DRIVER              SCOPE
1dbc0e12f982        backend-network     bridge              local
f70cdd723831        bridge              bridge              local
9a5cb2c53263        frontend-network    bridge              local
e58e9123a83f        frontend-network2   bridge              local
0c288d2ed25a        host                host                local
4d3221fe852b        none                null                local
```

```
$ docker network inspect frontend-network
[
    {
        "Name": "frontend-network",
        "Id": "9a5cb2c53263ea87ad3a48a7e11110e3fb7fbf203e98b294aea987400add6d19",
        "Created": "2021-02-05T06:47:23.64384896Z",
        "Scope": "local",
        "Driver": "bridge",
        "EnableIPv6": false,
```

To disconnect from server

$ docker network disconnect frontend-network redis (frontend-network is name of network)

```
$ docker network disconnect frontend-network redis
$
```