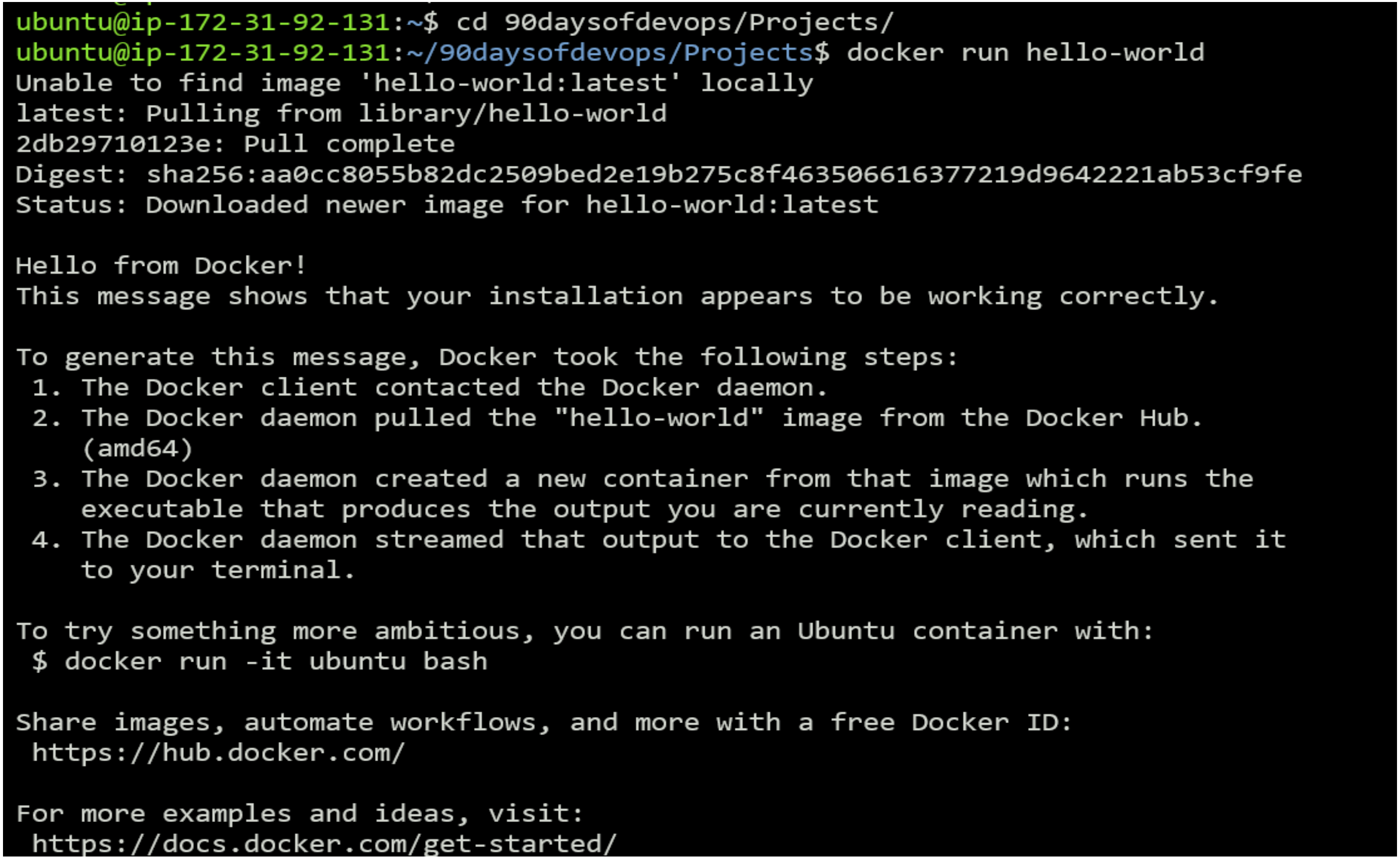
Day 16 Task:

Task: Docker for DevOps Engineers.

Tasks

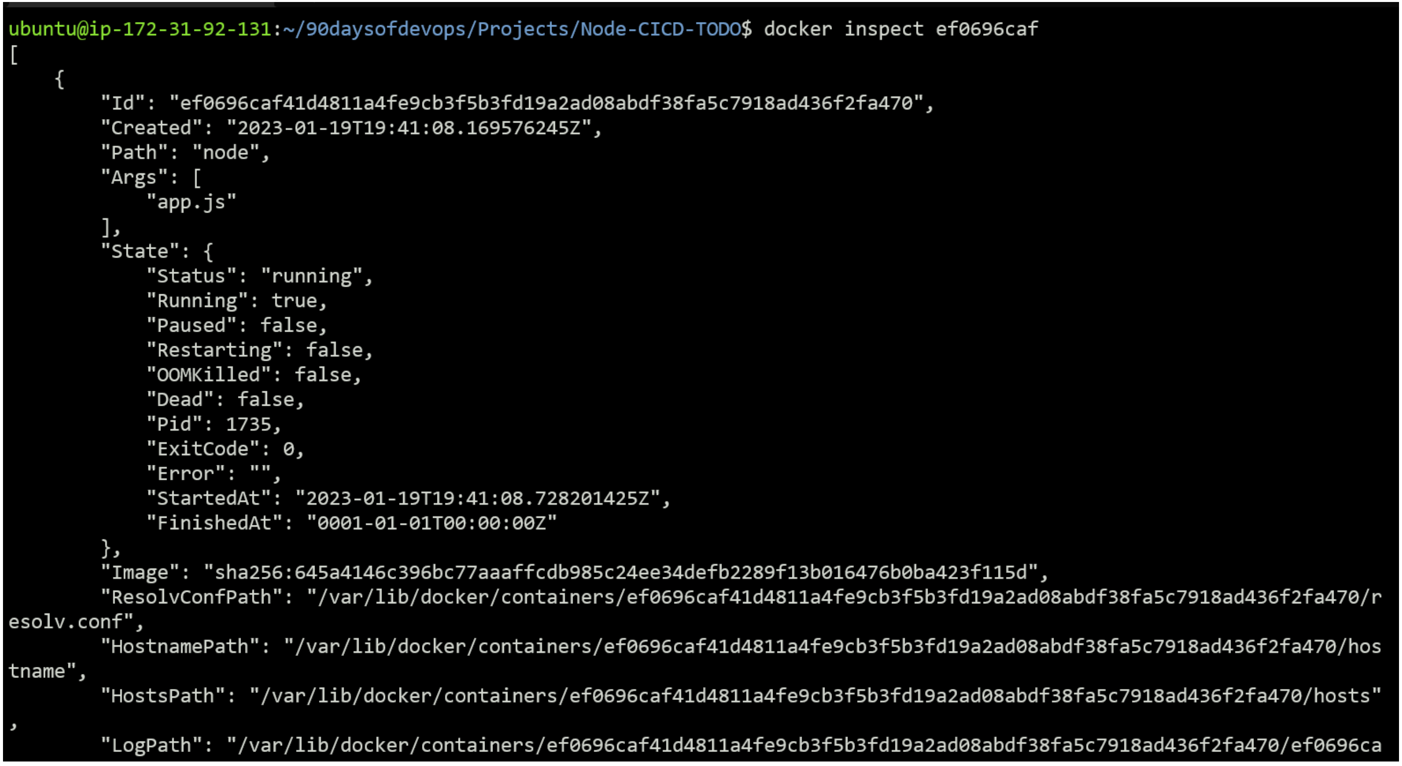
As you have already installed docker in previous days tasks, now is the time to run Docker commands.

- Use the `docker run` command to start a new container and interact with it through the command line. [Hint: docker run hello-world]



```
ubuntu@ip-172-31-92-131:~$ cd 90daysofdevops/Projects/
ubuntu@ip-172-31-92-131:~/90daysofdevops/Projects$ docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:aa0cc8055b82dc2509bed2e19b275c8f463506616377219d9642221ab53cf9fe
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/

For more examples and ideas, visit:
 https://docs.docker.com/get-started/
```

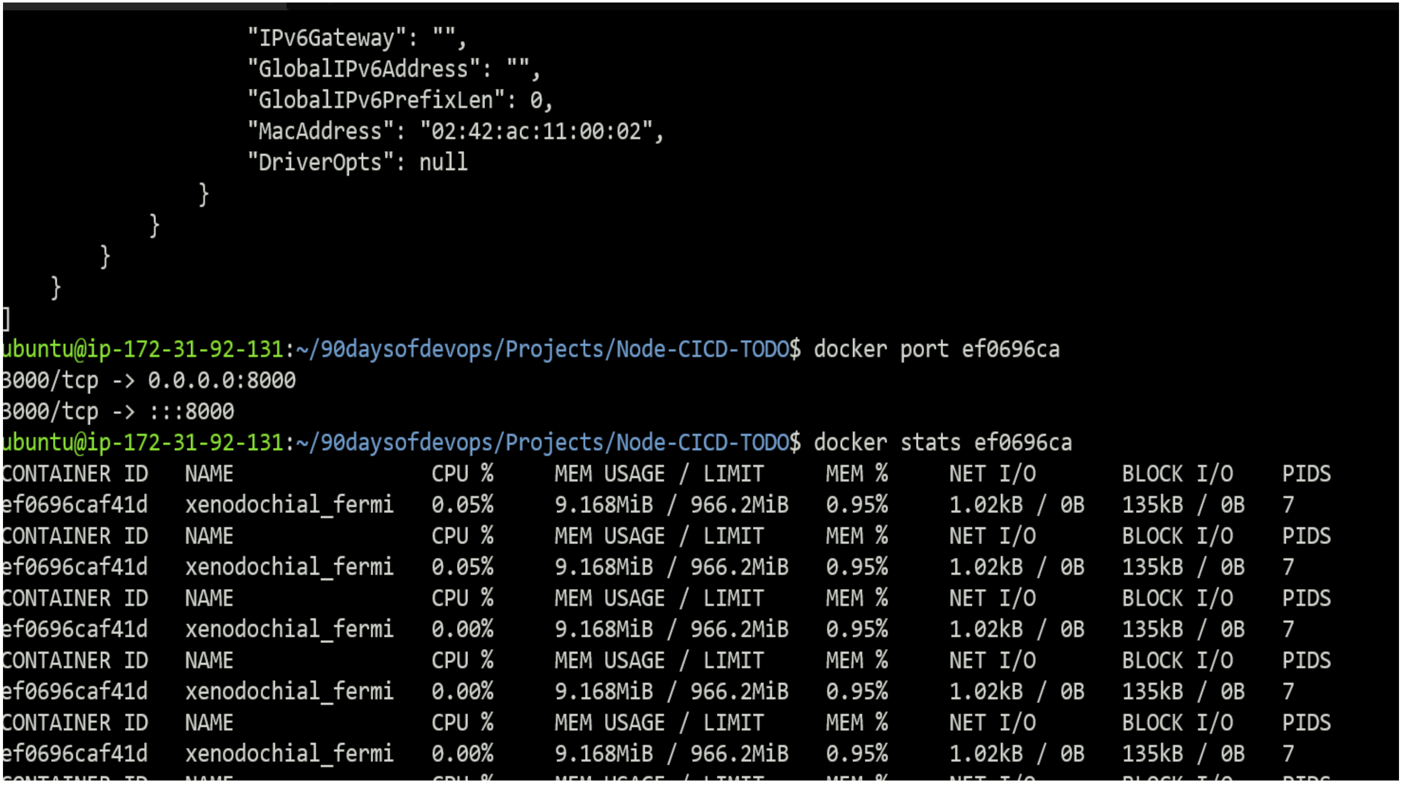
- Use the `docker inspect` command to view detailed information about a container or image.



```
ubuntu@ip-172-31-92-131:~/90daysofdevops/Projects/Node-CICD-TODO$ docker inspect ef0696caf
[
    {
        "Id": "ef0696caf41d4811a4fe9cb3f5b3fd19a2ad08abdf38fa5c7918ad436f2fa470",
        "Created": "2023-01-19T19:41:08.169576245Z",
        "Path": "node",
        "Args": [
            "app.js"
        ],
        "State": {
            "Status": "running",
            "Running": true,
            "Paused": false,
            "Restarting": false,
            "OOMKilled": false,
            "Dead": false,
            "Pid": 1735,
            "ExitCode": 0,
            "Error": "",
            "StartedAt": "2023-01-19T19:41:08.728201425Z",
            "FinishedAt": "0001-01-01T00:00:00Z"
        },
        "Image": "sha256:645a4146c396bc77aaaffcdb985c24ee34defb2289f13b016476b0ba423f115d",
        "ResolvConfPath": "/var/lib/docker/containers/ef0696caf41d4811a4fe9cb3f5b3fd19a2ad08abdf38fa5c7918ad436f2fa470/r
esolv.conf",
        "HostnamePath": "/var/lib/docker/containers/ef0696caf41d4811a4fe9cb3f5b3fd19a2ad08abdf38fa5c7918ad436f2fa470/hos
tname",
        "HostsPath": "/var/lib/docker/containers/ef0696caf41d4811a4fe9cb3f5b3fd19a2ad08abdf38fa5c7918ad436f2fa470/hosts"
,
        "LogPath": "/var/lib/docker/containers/ef0696caf41d4811a4fe9cb3f5b3fd19a2ad08abdf38fa5c7918ad436f2fa470/ef0696ca
```

- Use the `docker port` command to list the port mappings for a container.

- Use the `docker stats` command to view resource usage statistics for one or more containers.

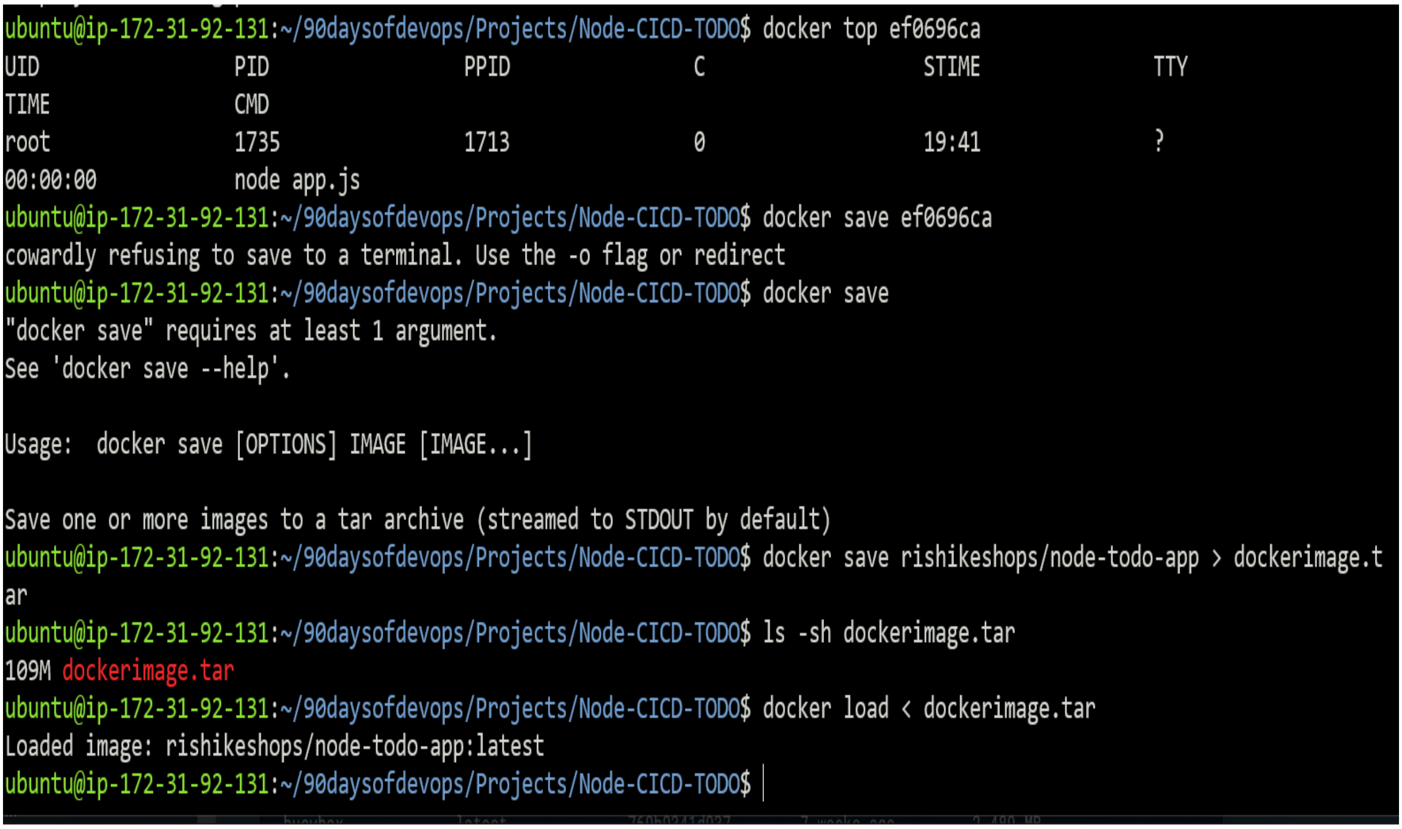


```
                    "IPv6Gateway": "",
                    "GlobalIPv6Address": "",
                    "GlobalIPv6PrefixLen": 0,
                    "MacAddress": "02:42:ac:11:00:02",
                    "DriverOpts": null
                }
            }
        }
    }
]
ubuntu@ip-172-31-92-131:~/90daysofdevops/Projects/Node-CICD-TODO$ docker port ef0696ca
3000/tcp -> 0.0.0.0:8000
3000/tcp -> :::8000
ubuntu@ip-172-31-92-131:~/90daysofdevops/Projects/Node-CICD-TODO$ docker stats ef0696ca
CONTAINER ID   NAME               CPU %     MEM USAGE / LIMIT     MEM %     NET I/O       BLOCK I/O    PIDS
ef0696caf41d   xenodochial_fermi  0.05%     9.168MiB / 966.2MiB   0.95%     1.02kB / 0B   135kB / 0B   7
CONTAINER ID   NAME               CPU %     MEM USAGE / LIMIT     MEM %     NET I/O       BLOCK I/O    PIDS
ef0696caf41d   xenodochial_fermi  0.05%     9.168MiB / 966.2MiB   0.95%     1.02kB / 0B   135kB / 0B   7
CONTAINER ID   NAME               CPU %     MEM USAGE / LIMIT     MEM %     NET I/O       BLOCK I/O    PIDS
ef0696caf41d   xenodochial_fermi  0.00%     9.168MiB / 966.2MiB   0.95%     1.02kB / 0B   135kB / 0B   7
CONTAINER ID   NAME               CPU %     MEM USAGE / LIMIT     MEM %     NET I/O       BLOCK I/O    PIDS
ef0696caf41d   xenodochial_fermi  0.00%     9.168MiB / 966.2MiB   0.95%     1.02kB / 0B   135kB / 0B   7
CONTAINER ID   NAME               CPU %     MEM USAGE / LIMIT     MEM %     NET I/O       BLOCK I/O    PIDS
ef0696caf41d   xenodochial_fermi  0.00%     9.168MiB / 966.2MiB   0.95%     1.02kB / 0B   135kB / 0B   7
CONTAINER ID   NAME               CPU %     MEM USAGE / LIMIT     MEM %     NET I/O       BLOCK I/O    PIDS
```

- Use the `docker top` command to view the processes running inside a container.

- Use the `docker save` command to save an image to a tar archive.

- Use the `docker load` command to load an image from a tar archive.



```
ubuntu@ip-172-31-92-131:~/90daysofdevops/Projects/Node-CICD-TODO$ docker top ef0696ca
UID                 PID                 PPID                C                   STIME               TTY
TIME                CMD
root                1735                1713                0                   19:41               ?
00:00:00            node app.js
ubuntu@ip-172-31-92-131:~/90daysofdevops/Projects/Node-CICD-TODO$ docker save ef0696ca
cowardly refusing to save to a terminal. Use the -o flag or redirect
ubuntu@ip-172-31-92-131:~/90daysofdevops/Projects/Node-CICD-TODO$ docker save
"docker save" requires at least 1 argument.
See 'docker save --help'.

Usage:  docker save [OPTIONS] IMAGE [IMAGE...]

Save one or more images to a tar archive (streamed to STDOUT by default)
ubuntu@ip-172-31-92-131:~/90daysofdevops/Projects/Node-CICD-TODO$ docker save rishikeshops/node-todo-app > dockerimage.t
ar
ubuntu@ip-172-31-92-131:~/90daysofdevops/Projects/Node-CICD-TODO$ ls -sh dockerimage.tar
109M dockerimage.tar
ubuntu@ip-172-31-92-131:~/90daysofdevops/Projects/Node-CICD-TODO$ docker load < dockerimage.tar
Loaded image: rishikeshops/node-todo-app:latest
ubuntu@ip-172-31-92-131:~/90daysofdevops/Projects/Node-CICD-TODO$
```