

S_Docker_02 Lab 2

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DOCKER – DEVOPS



S_Docker_02 Lab 2

- 1- Run an instance of nginx:alpine with a name nginx and map port 8080 on the container to 38282 on the host.
- 2- create ubuntu image and check the size of it
- 3- Run a container named blue-app using image kodekloud/simplewebapp and set the environment variable APP_COLOR to blue. Make the application available on port 38282 on the host. The application listens on port 8080.
- 4- Deploy a mysql database using the mysql image and name it mysqldb Set the database password to use db_pass123 then inspect it to check the value
- 5- pull the code from <https://github.com/sabreensalama/dockerizenode-app-task> and create a docker file for this flask app
- 6- Create a volume called mysql_data, Run a mysql container again, but this time map a volume to the container so that the data stored by the container is stored at /opt/data on the host. Use the same name : mysql-db and same password: db_pass123 as before. Mysql stores data at /var/lib/mysql inside the container.

```
Activities Terminal May 27 8:25 PM
kdawoud@k: ~

139 docker images
140 docker ps -a
141 history
kdawoud@k:~$ docker run -d --name=nginx -p 38282:8080 nginx:alpine
Unable to find image 'nginx:alpine' locally
alpine: Pulling from library/nginx
f56be85fc22e: Pull complete
97c80f11709c: Pull complete
afb503c1f124: Pull complete
f8c948b732dd: Pull complete
d021bba29710: Pull complete
cadcca1af197: Pull complete
4aacde79cec4: Pull complete
Digest: sha256:2e776a66a3556f001aba13431b26e448fe8acba277bf93d2ab1a785571a46d90
Status: Downloaded newer image for nginx:alpine
a6796e70fb7065afb17dfb9834e49ecdac236ab5b02a0a599d3069559086d9
kdawoud@k:~$ docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS
NAMES
a6796e70fb70   nginx:alpine  "/docker-entrypoint..." About a minute ago Up About a minute 80/tcp, 0.0.0.0:38282->8080/tcp, :::38282->8080/tcp
nginx
kdawoud@k:~$ sudo systemctl status firewallld
[sudo] password for kdawoud:
Unit firewallld.service could not be found.
kdawoud@k:~$ sudo systemctl status ufw
● ufw.service - Uncomplicated firewall
   Loaded: loaded (/lib/systemd/system/ufw.service; enabled; vendor preset: enabled)
   Active: active (exited) since Sat 2023-05-27 15:49:06 +03; 3h 59min ago
     Docs: man:ufw(8)
   Process: 602 ExecStart=/lib/ufw/ufw-init start quiet (code=exited, status=0/SUCCESS)
   Main PID: 602 (code=exited, status=0/SUCCESS)
      CPU: 3ms

May 27 15:49:06 k systemd[1]: Starting Uncomplicated firewall...
May 27 15:49:06 k systemd[1]: Finished Uncomplicated firewall.
kdawoud@k:~$ sudo systemctl stop ufw
kdawoud@k:~$ sudo systemctl status ufw
● ufw.service - Uncomplicated firewall
   Loaded: loaded (/lib/systemd/system/ufw.service; enabled; vendor preset: enabled)
```

```
May 27 15:49:06 k systemd[1]: Starting Uncomplicated firewall...
May 27 15:49:06 k systemd[1]: Finished Uncomplicated firewall.
kdawoud@k:~$ sudo systemctl stop ufw
kdawoud@k:~$ sudo systemctl status ufw
● ufw.service - Uncomplicated firewall
   Loaded: loaded (/lib/systemd/system/ufw.service; enabled; vendor preset: enabled)
   Active: inactive (dead) since Sat 2023-05-27 19:49:06 +03; 1s ago
     Docs: man:ufw(8)
   Process: 602 ExecStart=/lib/ufw/ufw-init start quiet (code=exited, status=0/SUCCESS)
   Process: 10414 ExecStop=/lib/ufw/ufw-init stop (code=exited, status=0/SUCCESS)
   Main PID: 602 (code=exited, status=0/SUCCESS)
      CPU: 7ms

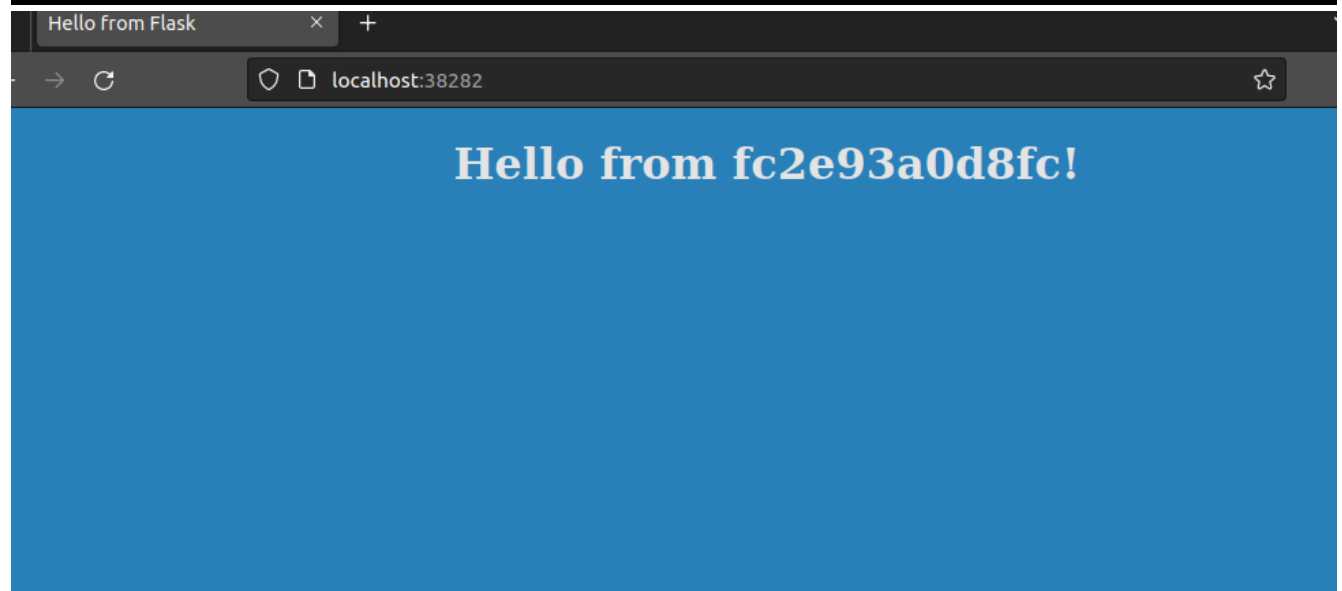
May 27 15:49:06 k systemd[1]: Starting Uncomplicated firewall...
May 27 15:49:06 k systemd[1]: Finished Uncomplicated firewall.
May 27 19:49:06 k systemd[1]: Stopping Uncomplicated firewall...
May 27 19:49:06 k ufw-init[10414]: Skip stopping firewall: ufw (not enabled)
May 27 19:49:06 k systemd[1]: ufw.service: Deactivated successfully.
May 27 19:49:06 k systemd[1]: Stopped Uncomplicated firewall.
kdawoud@k:~$ sudo systemctl start ufw
kdawoud@k:~$ sudo systemctl status ufw
● ufw.service - Uncomplicated firewall
   Loaded: loaded (/lib/systemd/system/ufw.service; enabled; vendor preset: enabled)
   Active: active (exited) since Sat 2023-05-27 19:49:35 +03; 2s ago
     Docs: man:ufw(8)
   Process: 10432 ExecStart=/lib/ufw/ufw-init start quiet (code=exited, status=0/SUCCESS)
   Main PID: 10432 (code=exited, status=0/SUCCESS)
      CPU: 2ms

May 27 19:49:35 k systemd[1]: Starting Uncomplicated firewall...
May 27 19:49:35 k systemd[1]: Finished Uncomplicated firewall.
kdawoud@k:~$ docker run -d ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
dbf6a9befcde: Pull complete
Digest: sha256:dfd64a3b4296d8c9b62aa3309984f8620b98d87e47492599ee20739e8eb54fbf
Status: Downloaded newer image for ubuntu:latest
f19ab32fd543879528b5491ceb2117c89c88cfbebdef6fe42bcdadd9448bb726
kdawoud@k:~$ docker images
REPOSITORY   TAG       IMAGE ID       CREATED        SIZE
nginx        alpine    fe7edaf8a8dc   2 days ago    41.4MB
ubuntu       latest    3b418d7b466a   4 weeks ago   77.8MB
kdawoud@k:~$
```

```

178 reboot
179 docker ps
180 docker ps -a
181 docker run -d --name blue-app -e APP_COLOR=blue -p 38282:8080 kodekloud/simple-webapp
182 docker ps -a
183 docker ps
184 docker run -d --name blue-ap1p -e APP_COLOR=blue -p 38282:8080 kodekloud/simple-webapp
185 docker ps
186 docker container inspect fc2e93a0d8fc
187 ping 172.17.0.2
188 history
kdawoud@k:~$

```



Activities Terminal May 29 8:10 PM kdawoud@k: ~

```

188 history
kdawoud@k:~$ docker run -d --name mysql-db -e MYSQL_ROOT_PASSWORD=db_pass123 mysql:latest
Unable to find image 'mysql:latest' locally
latest: Pulling from library/mysql
90e2fb2facff: Pull complete
ba60eb20fd5f: Pull complete
4f509402d469: Pull complete
496c2cfa0815: Pull complete
8ec1dfa9522c: Pull complete
6dec7ba896f8: Pull complete
dc9ff75362b0: Pull complete
73e4682f9014: Pull complete
9ffdeecd0fb6: Pull complete
a4346ccfb53f: Pull complete
434c13bc32de: Pull complete
Digest: sha256:d6164ff4855b9b3f2c7748c6ec564ccff841f79a7023db0f9293143481a44b6e
Status: Downloaded newer image for mysql:latest
9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11
kdawoud@k:~$ docker images
REPOSITORY          TAG         IMAGE ID      CREATED       SIZE
nginx                alpine     fe7edaf8a8dc  4 days ago   41.4MB
mysql                latest     05db07cd74c0  4 days ago   565MB
ubuntu              latest     3b418d7b466a  4 weeks ago   77.8MB
kodekloud/simple-webapp latest     c6e3cd9aae36  4 years ago   84.8MB
kdawoud@k:~$ docker image inspect 05db07cd74c0
[
  {
    "Id": "sha256:05db07cd74c0520c8ffe5f7638063719a886f9115cecacc0654d981caf5d27f7",
    "RepoTags": [
      "mysql:latest"
    ],
    "RepoDigests": [
      "mysql@sha256:d6164ff4855b9b3f2c7748c6ec564ccff841f79a7023db0f9293143481a44b6e"
    ],
    "Parent": "",
    "Comment": "",
    "Created": "2023-05-24T21:43:13.237785913Z",
    "Container": "f38d8f23cf17014cd5f9a6025dd60d0aac71eb192926e2021c03d06c5d5f5dd3",
    "ContainerConfig": {
      "Hostname": "f38d8f23cf17",
      "Domainname": "",
      "User": "",
      "AttachStdin": false,
      "AttachStdout": false,
      "AttachStderr": false,
      "ExposedPorts": {}
    }
  }
]

```

```
Activities Terminal May 29 8:11 PM kdawoud@k: ~  
kdawoud@k:~$ docker ps -a  
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES  
9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11  mysql:latest       "docker-entrypoint.s..." 3 minutes ago       Exited (1) 2 minutes ago 0.0.0.0:38282->8080/tcp, :::38282->8080/tcp  mysql-db  
fc2e93a8d8fc       kodekloud/simple-webapp "python app.py"       25 hours ago       Up 25 hours                   blue-apip  
009b4b554df66     kodekloud/simple-webapp "python app.py"       2 days ago         Created                                blue-app  
f19ab32fd543      ubuntu              "/bin/bash"          2 days ago         Exited (0) 2 days ago                busy_lalande  
a6796e78fb70     nginx:alpine        "/docker-entrypoint..." 2 days ago         Exited (0) 26 hours ago                nginx  
kdawoud@k:~$ docker container inspect 9631408929f7  
{  
  "Id": "9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11",  
  "Created": "2023-05-29T17:06:00.815639031Z",  
  "Path": "docker-entrypoint.sh",  
  "Args": [  
    "mysqld"  
  ],  
  "State": {  
    "Status": "exited",  
    "Running": false,  
    "Paused": false,  
    "Restarting": false,  
    "OOMKilled": false,  
    "Dead": false,  
    "Pid": 0,  
    "ExitCode": 1,  
    "Error": "",  
    "StartedAt": "2023-05-29T17:06:02.93277833Z",  
    "FinishedAt": "2023-05-29T17:06:03.694589705Z"  
  },  
  "Image": "sha256:85db7cd74c0520c8ffe5f7638063719a886f9115ccacc0654d981caf5d27f7",  
  "ResolvConfPath": "/var/lib/docker/containers/9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11/resolv.conf",  
  "HostnamePath": "/var/lib/docker/containers/9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11/hostname",  
  "HostsPath": "/var/lib/docker/containers/9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11/hosts",  
  "LogPath": "/var/lib/docker/containers/9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11/9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11-json.log",  
  "Name": "/mysql-db",  
  "RestartCount": 0,  
  "Driver": "overlay2",  
  "Platform": "linux",  
  "MountLabel": "",  
  "ProcessLabel": "",  
  "AppArmorProfile": "docker-default",  
  "ExecIDs": null,  
  "HostConfig": {  
    "Binds": null,  
    "ContainerIDFile": "",  
    "LogConfig": {  
      "Type": "json-file",  
      "Config": {}  
    },  
    "NetworkMode": "default",  
    "PortBindings": {},  
    "RestartPolicy": {  
      "Name": "no",  
      "MaximumRetryCount": 0  
    },  
    "WorkingDir": "",  
    "Entrypoint": [ "docker-entrypoint.sh" ],  
    "OnBuild": null,  
    "Labels": {}  
  },  
  "NetworkSettings": {  
    "Bridge": "",  
    "SandBox": "private",  
    "Gateway": "172.17.0.1",  
    "IPV6Address": "",  
    "IPV6Gateway": "",  
    "IPAddress": "172.17.0.2",  
    "IPPrefixLen": 16,  
    "IPv4Subnet": "172.17.0.0/16",  
    "LinkLocalIPv6Address": "",  
    "LinkLocalIPv6Subnet": "fe80::::/64",  
    "MacAddress": "02:42:9c:4d:7b:38",  
    "NetworkInterface": "eth0",  
    "Port": 38282,  
    "PrivateIP": "172.17.0.2",  
    "PublicIP": "172.17.0.2",  
    "Ports": {  
      "38282/tcp": [ { "HostIP": "0.0.0.0", "HostPort": "38282" } ],  
      "8080/tcp": [ { "HostIP": "0.0.0.0", "HostPort": "8080" } ]  
    },  
    "Subnet": "172.17.0.0/16",  
    "SubnetPrefixLen": 16,  
    "ThrottleIO": false,  
    "UseProxy": true,  
    "VolumeDriver": "overlay2"  
  },  
  "SystemID": "f663111f-df3b-f6c4-18c-5087ca3b827867b09c80a1e5d427757d48"  
}
```

```
Activities Terminal May 29 8:11 PM kdawoud@k: ~  
kdawoud@k:~$ docker container inspect 9631408929f7  
{  
  "Id": "9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11",  
  "Created": "2023-05-29T17:06:00.815639031Z",  
  "Path": "docker-entrypoint.sh",  
  "Args": [  
    "mysqld"  
  ],  
  "State": {  
    "Status": "exited",  
    "Running": false,  
    "Paused": false,  
    "Restarting": false,  
    "OOMKilled": false,  
    "Dead": false,  
    "Pid": 0,  
    "ExitCode": 1,  
    "Error": "",  
    "StartedAt": "2023-05-29T17:06:02.93277833Z",  
    "FinishedAt": "2023-05-29T17:06:03.694589705Z"  
  },  
  "Image": "sha256:85db7cd74c0520c8ffe5f7638063719a886f9115ccacc0654d981caf5d27f7",  
  "ResolvConfPath": "/var/lib/docker/containers/9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11/resolv.conf",  
  "HostnamePath": "/var/lib/docker/containers/9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11/hostname",  
  "HostsPath": "/var/lib/docker/containers/9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11/hosts",  
  "LogPath": "/var/lib/docker/containers/9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11/9631408929f7c3ef391931455a150f502ecd0c5b714030733d4d00825297cf11-json.log",  
  "Name": "/mysql-db",  
  "RestartCount": 0,  
  "Driver": "overlay2",  
  "Platform": "linux",  
  "MountLabel": "",  
  "ProcessLabel": "",  
  "AppArmorProfile": "docker-default",  
  "ExecIDs": null,  
  "HostConfig": {  
    "Binds": null,  
    "ContainerIDFile": "",  
    "LogConfig": {  
      "Type": "json-file",  
      "Config": {}  
    },  
    "NetworkMode": "default",  
    "PortBindings": {},  
    "RestartPolicy": {  
      "Name": "no",  
      "MaximumRetryCount": 0  
    },  
    "WorkingDir": "",  
    "Entrypoint": [ "docker-entrypoint.sh" ],  
    "OnBuild": null,  
    "Labels": {}  
  },  
  "NetworkSettings": {  
    "Bridge": "",  
    "SandBox": "private",  
    "Gateway": "172.17.0.1",  
    "IPV6Address": "",  
    "IPV6Gateway": "",  
    "IPAddress": "172.17.0.2",  
    "IPPrefixLen": 16,  
    "IPv4Subnet": "172.17.0.0/16",  
    "LinkLocalIPv6Address": "",  
    "LinkLocalIPv6Subnet": "fe80::::/64",  
    "MacAddress": "02:42:9c:4d:7b:38",  
    "NetworkInterface": "eth0",  
    "Port": 38282,  
    "PrivateIP": "172.17.0.2",  
    "PublicIP": "172.17.0.2",  
    "Ports": {  
      "38282/tcp": [ { "HostIP": "0.0.0.0", "HostPort": "38282" } ],  
      "8080/tcp": [ { "HostIP": "0.0.0.0", "HostPort": "8080" } ]  
    },  
    "Subnet": "172.17.0.0/16",  
    "SubnetPrefixLen": 16,  
    "ThrottleIO": false,  
    "UseProxy": true,  
    "VolumeDriver": "overlay2"  
  },  
  "SystemID": "f663111f-df3b-f6c4-18c-5087ca3b827867b09c80a1e5d427757d48"  
}
```

```
Activities Terminal May 29 8:59 PM kdawoud@k: ~/node-app

kdawoud@k:~/node-app$ git clone https://github.com/sabreensalana/dockerize-node-app-task ./node-app
Cloning into './node-app':
remote: Enumerating objects: 12, done.
remote: Counting objects: 100% (12/12), done.
remote: Compressing objects: 100% (10/10), done.
remote: Total 12 (delta 1), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (12/12), done.
Resolving deltas: 100% (1/1), done.
kdawoud@k:~/node-app$ npm install
Command 'npm' not found, but can be installed with:
sudo apt install npm
kdawoud@k:~/node-app$ ls
Desktop Documents Downloads Music node-app Pictures Public snap Templates Videos
kdawoud@k:~/node-app$ cd node-app/
kdawoud@k:~/node-app$ vim Dockerfile
Command 'vim' not found, but can be installed with:
sudo apt install vim # version 2:8.2.3995-1ubuntu2.7, or
sudo apt install vim-tiny # version 2:8.2.3995-1ubuntu2.7
sudo apt install vim-athena # version 2:8.2.3995-1ubuntu2.7
sudo apt install vim-gtk3 # version 2:8.2.3995-1ubuntu2.7
sudo apt install vim-nox # version 2:8.2.3995-1ubuntu2.7
sudo apt install neovim # version 0.6.1-3
kdawoud@k:~/node-app$ sudo apt install vim
[sudo] password for kdawoud:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  vin-runtime
Suggested packages:
  ctags vin-doc vim-scripts
The following NEW packages will be installed:
  vin vin-runtime
0 upgraded, 2 newly installed, 0 to remove and 111 not upgraded.
Need to get 8,553 kB of archives.
After this operation, 37.6 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://sa.archive.ubuntu.com/ubuntu jammy-updates/main amd64 vin-runtime all 2:8.2.3995-1ubuntu2.7 [6,825 kB]
Get:2 http://sa.archive.ubuntu.com/ubuntu jammy-updates/main amd64 vin amd64 2:8.2.3995-1ubuntu2.7 [1,728 kB]
Fetched 8,553 kB in 2s (5,279 kB/s)
Selecting previously unselected package vin-runtime.
(Reading database ... 203597 files and directories currently installed.)
Preparing to unpack .../vin-runtime_2k3a8.2.3995-1ubuntu2.7_all.deb ...
Adding 'diversion of /usr/share/vim/vim82/doc/help.txt to /usr/share/vim/vim82/doc/help.txt.vim-tiny by vin-runtime'
Adding 'diversion of /usr/share/vim/vim82/doc/tags to /usr/share/vim/vim82/doc/tags.vim-tiny by vin-runtime'
Unpacking vin-runtime (2:8.2.3995-1ubuntu2.7) ...
Selecting previously unselected package vin.
Preparing to unpack .../vin_2k3a8.2.3995-1ubuntu2.7_amd64.deb ...
Unpacking vin (2:8.2.3995-1ubuntu2.7) ...
Setting up vin-runtime (2:8.2.3995-1ubuntu2.7) ...
Setting up vin (2:8.2.3995-1ubuntu2.7) ...
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vim (vim) in auto mode
update-alternatives: using /usr/bin/vimdiff to provide /usr/bin/vimdiff (vimdiff) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vim (vim) in auto mode
kdawoud@k:~/node-app$ vim Dockerfile
#here we will use the recent nodejs image version 16
FROM node:16

#here is the working directory
WORKDIR ./node-app

#here we want to install app dependencies as per the instructions in the README file
COPY package*.json ./
RUN npm install
#RUN node server.js

#bundle app source
COPY . .

#here we will binds to port 8080
EXPOSE 8080

#here is to run the following during execution time
CMD [ "package.json", "server.js" ]

kdawoud@k:~/node-app$
```

[illegible]