



Summary

Session No - 8

- Installing docker in a virtual machine
 - Step 1:- Installing yum-utils
 - **Command:-** yum install -y yum-utils

```
[root@localhost ~]# yum install -y yum-utils
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use subscription-manager to register.

Repository 'dvd1' is missing name in configuration, using id.
Repository 'dvd2' is missing name in configuration, using id.
dvd1      2.7 MB/s | 2.7 kB  00:00
dvd2      2.7 MB/s | 2.8 kB  00:00
```

- Step 2:- Configuring Yum
 - **Command :-** yum-config-manager \
--add-repo \
<https://download.docker.com/linux/centos/docker-ce.repo>

```
[root@localhost ~]# yum-config-manager --add-repo https://download.docker.com/linux/centos/docker-ce.repo
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use subscription-manager to register.

Repository 'dvd1' is missing name in configuration, using id.
Repository 'dvd2' is missing name in configuration, using id.
Adding repo from: https://download.docker.com/linux/rhel/docker-ce.repo
```

- Step 3:- Checking the repository

```
[root@localhost ~]# yum repolist
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use subscription-manager to register.

Repository 'dvd1' is missing name in configuration, using id.
Repository 'dvd2' is missing name in configuration, using id.
repo id      repo name
docker-ce-stable Docker CE Stable - x86_64
dvd1         dvd1
dvd2         dvd2
[root@localhost ~]#
```

- Step 4:- Installing Docker
 - **Command:-** Yum install docker-ce

- Creating a network in the docker

```
[root@ip-172-31-3-96 ~]# docker network create lwnet
cc2dd7ded56e9c578cedb37b1f53d7e26b82503fd8a112c2dff3db6df8961e46
[root@ip-172-31-3-96 ~]# docker network ls
NETWORK ID          NAME                DRIVER              SCOPE
b1e1bc24578b        bridge             bridge             local
7ad773827e76        host               host               local
cc2dd7ded56e        lwnet              bridge             local
141758ddf6bb        none              null               local
```

- If we don't give a network name docker gives the default range

```
{
  "Name": "lwnet",
  "Id": "cc2dd7ded56e9c578cedb37b1f53d7e26b82503fd8a112c2dff3db6df8961e46",
  "Created": "2022-10-20T15:42:13.920186377Z",
  "Scope": "local",
  "Driver": "bridge",
  "EnableIPv6": false,
  "IPAM": {
    "Driver": "default",
    "Options": {},
    "Config": [
      {
        "Subnet": "172.18.0.0/16",
        "Gateway": "172.18.0.1"
      }
    ]
  }
}
```

- **Volume** is a keyword in the docker-compose file for getting storage
- **Networks** is a keyword in the docker-compose file for creating a network
- Creating a network in the docker-compose file
 - Manifest /code file

```
[root@ip-172-31-3-96 mycode]# cat docker-compose.yml
version: "3.8"

networks:
  lwnet:
    driver: bridge
```

- Launching the Word press & MySQL application with the docker-compose file
 - Manifest/code file for MY-SQL database & word press application

```
version: "3.8"

services:
  db:
    image: mysql:latest
    container_name: mydb1
    networks:
      - lwnet
    volumes:
      - /data:/var/lib/mysql
    environment:
      - MYSQL_ROOT_PASSWORD=redhat
      - MYSQL_DATABASE=blogdb
      - MYSQL_USER=vimal
      - MYSQL_PASSWORD=redhat
```

```
wp:
  image: wordpress:latest
  container_name: mywp1
  networks:
    - lwnet
  ports:
    - 8080:80
```

- Launching MY-SQL database & word press container from the docker-compose file

```
mydb1 docker-entrypoint.s... db
[root@ip-172-31-3-96 mycode]# docker-compose up -d
[+] Running 0/0
[+] Running 0/1
[+] Running 0/1
[+] Running 0/1
[+] Running 0/1
[+] Running 0/1
[+] Running 0/1
.: wp Pulling
0.6s
```

- Checking the containers

```
[root@ip-172-31-3-96 mycode]# docker-compose ps
NAME                COMMAND                                SERVICE    STATUS    PORTS
mydb1               "docker-entrypoint.s..."          db         running   3306/tcp, 33060/tcp
mywp1               "docker-entrypoint.s..."          wp         running   0.0.0.0:8080->80/tcp, :::8080->80/tcp
```

- Allowing in firewall


Edit inbound rules [Info](#)

Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
-	All traffic	All	All	Anywh...	

[Add rule](#)

- Connecting database to word press application



Below you should enter your database connection details. If you are not sure about these, contact your host.

Database Name	<input type="text" value="blogdb"/>	The name of the database you want to use with WordPress.
Username	<input type="text" value="vimal"/>	Your database username.
Password	<input type="text" value="redhat"/>	Your database password.
Database Host	<input type="text" value="mydb1"/>	You should be able to get this info from your web host, if localhost does not work.
Table Prefix	<input type="text" value="wp_"/>	If you want to run multiple WordPress installations in a single database, change this.

- Docker-compose logs (service name) is used to see the logs of containers

```
[root@ip-172-31-3-96 mycode]# docker-compose logs db
mydb1 | 2022-10-20 16:15:54+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 8.0.31-1.el8 started.
mydb1 | 2022-10-20 16:15:54+00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'
mydb1 | 2022-10-20 16:15:54+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 8.0.31-1.el8 started.
mydb1 | '/var/lib/mysql/mysql.sock' -> '/var/run/mysqld/mysqld.sock'
mydb1 | 2022-10-20T16:15:54.705502Z 0 [Warning] [MY-011068] [Server] The syntax '--skip-host-cache' is deprecated and
will be removed in a future release. Please use SET GLOBAL host_cache_size=0 instead.
mydb1 | 2022-10-20T16:15:54.707460Z 0 [System] [MY-010116] [Server] /usr/sbin/mysqld (mysqld 8.0.31) starting as process
ess 1
mydb1 | 2022-10-20T16:15:54.714507Z 1 [System] [MY-013576] [InnoDB] InnoDB initialization has started.
mydb1 | 2022-10-20T16:15:54.973829Z 1 [System] [MY-013577] [InnoDB] InnoDB initialization has ended.
mydb1 | 2022-10-20T16:15:55.191317Z 0 [Warning] [MY-010068] [Server] CA certificate ca.pem is self signed.
mydb1 | 2022-10-20T16:15:55.191508Z 0 [System] [MY-013602] [Server] Channel mysql_main configured to support TLS. E
```

- Now with one click, we can stop the entire three-tier application

```
[root@ip-172-31-3-96 mycode]# docker-compose stop
[+] Running 0/0
 * Container mywp1 Stopping
[+] Running 0/2s
 * Container mywp1 Stopping
[+] Running 0/2s
 * Container mywp1 Stopping
[+] Running 0/2s
 * Container mywp1 Stopping
0.4s
 * Container mydb1 Stopping
0.4s
```

- **Docker-compose ls** command will tell us which file we used to launch the container

```
[root@ip-172-31-3-96 mycode]# docker-compose ls
NAME                STATUS             CONFIG FILES
mycode              running(2)         /mycode/docker-compose.yml
[root@ip-172-31-3-96 mycode]# docker-compose ps
NAME                COMMAND             SERVICE             STATUS             PORTS
mydb1               "docker-entrypoint.s..." db                  running            3306/tcp, 33060/tcp
mywp1               "docker-entrypoint.s..." wp                  running            0.0.0.0:8080->80/tcp, :::8080->80/tcp
```

- Word press application is dependent on MY-SQL database for storing data
- Word press has given some environmental variables to automate the login process

```
wp:
  image: wordpress:latest
  container_name: mywp1
  networks:
    - lwnet
  ports:
    - 8080:80
  environment:
    - WORDPRESS_DB_HOST=mydb1
    - WORDPRESS_DB_USER=vimal
    - WORDPRESS_DB_PASSWORD=redhat
    - WORDPRESS_DB_NAME=b1logdb1
```

- **Depends_on** is a keyword in docker-compose which is used as a control keyword to launch word press container after the database container

```
wp:  
depends_on:  
- db  
image: wordpress:latest
```

- **docker-compose down** command is used to stop & remove the container

```
[root@ip-172-31-3-96 mycode]# docker-compose down
[+] Running 0/0
  ⋮ Container mywp1 Stopping
[+] Running 0/2s
  ⋮ Container mywp1 Stopping
[+] Running 0/2s
  ⋮ Container mywp1 Stopping
[+] Running 0/2s
  ⋮ Container mywp1 Stopping
[+] Running 0/2s
  ⋮ Container mywp1 Stopping
[+] Running 0/2s
  ⋮ Container mywp1 Stopping
  ⋮ Container mydb1 Stopping
  ⋮ Container mywp1 Stopping
    0.6s
  ⋮ Container mydb1 Stopping
    0.6s
```

- Now the word press application will not ask to connect the database because of the environmental keywords we write in a manifest file

Information needed

Please provide the following information. Do not worry, you can always change these settings later.

Site Title

Username

Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the @ symbol.

Password

Strong

Hide

Important: You will need this password to log in. Please store it in a secure location.

Your Email

Double-check your email address before continuing.

Important Link

- Docker installation on Centos
<https://docs.docker.com/engine/install/centos/>