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*****How to setup LAMP stack on Docker with Redhat Linux 9.4****

To Setup LAMP Stack On Docker Using Redhat Linux 9.4

Introduction:-

A Docker LAMP stack is a software bundle that includes Linux as the operating system, Apache as the web server, MySQL as the database management system, and PHP as the server-side scripting language. It is containerized using Docker which makes it easy to deploy and manage.

Procedure:-

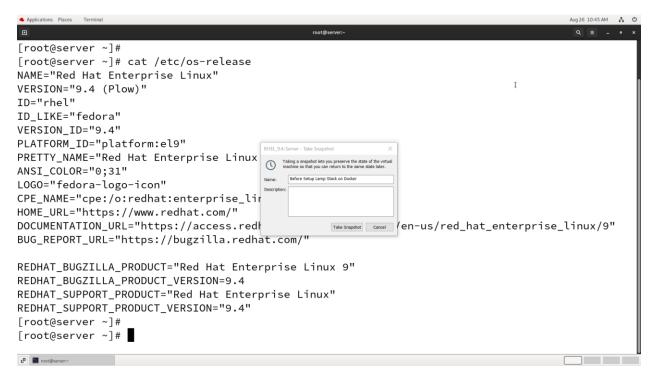
Step 1: Check the OS version by using the below command

#cat /etc/os-release

```
[root@server ~]#
[root@server ~]# cat /etc/os-release
NAME="Red Hat Enterprise Linux"
VERSION="9.4 (Plow)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="9.4"
PLATFORM_ID="platform:el9"
PRETTY_NAME="Red Hat Enterprise Linux 9.4 (Plow)"
ANSI_COLOR="0;31"
LOGO="fedora-logo-icon"
CPE_NAME="cpe:/o:redhat:enterprise_linux:9::baseos"
HOME_URL="https://www.redhat.com/"
DOCUMENTATION_URL="https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/9"
BUG_REPORT_URL="https://bugzilla.redhat.com/"
REDHAT_BUGZILLA_PRODUCT="Red Hat Enterprise Linux 9"
REDHAT_BUGZILLA_PRODUCT_VERSION=9.4
REDHAT_SUPPORT_PRODUCT="Red Hat Enterprise Linux"
REDHAT_SUPPORT_PRODUCT_VERSION="9.4"
[root@server ~]#
[root@server ~]#
```

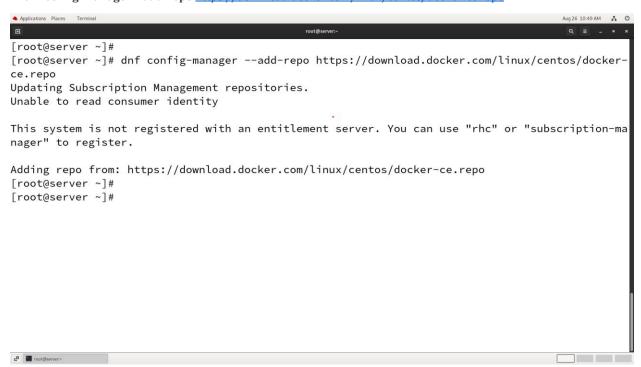
Step 2: Take a Snapshot:-

Snapshot Name:-Before Setup Lamp Stack on Docker



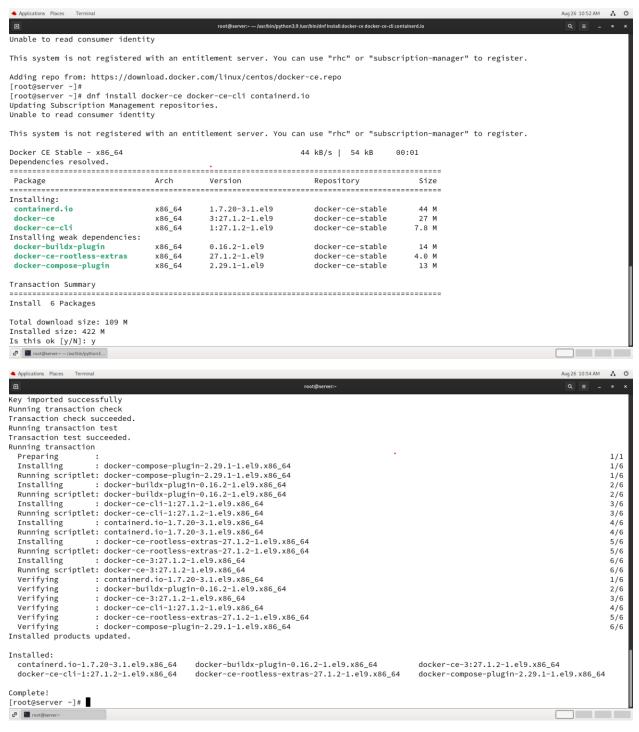
Step 3: Add the official Docker repository by using the below command

dnf config-manager --add-repo https://download.docker.com/linux/centos/docker-ce.repo



Step 4: After the repository added, install Docker, which is composed of three packages using the below command

dnf install docker-ce docker-ce-cli containerd.io



Step 5: After installation has completed, start and enable the Docker daemon by using the below command

systemctl start docker

systemctl enable -now docker

```
Applications Places Terminal
                                                                                                        Aug 26 10:56 AM 🔥 💍
                                                                                                         Q ≣ - •
Installed products updated.
Installed:
 containerd.io-1.7.20-3.1.el9.x86_64
                                          docker-buildx-plugin-0.16.2-1.el9.x86_64
                                                                                              docker-ce-3:27.1.2-1.e
19.x86 64
  docker-ce-cli-1:27.1.2-1.el9.x86_64
                                          docker-ce-rootless-extras-27.1.2-1.el9.x86_64
                                                                                              docker-compose-plugin-
2.29.1-1.el9.x86_64
Complete!
[root@server ~]#
[root@server ~]#
[root@server ~]#
[root@server ~]# systemctl start docker
[root@server ~]#
[root@server ~]# systemctl enable --now docker
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /usr/lib/systemd/system/docker.serv
ice.
[root@server ~]#
[root@server ~]#
```

Step 6: Now check the status of docker by using the below command

systemctl status docker

```
Aug 26 10:58 AM 🙏 💍
[root@server ~]#
[root@server ~]#
[root@server ~]# systemctl status docker
• docker.service - Docker Application Container Engine
     Loaded: loaded (/usr/lib/systemd/system/docker.service; enabled; preset: disabled)
     Active: active (running) since Mon 2024-08-26 10:56:18 IST; 1min 54s ago
TriggeredBy: • docker.socket
      Docs: https://docs.docker.com
   Main PID: 4320 (dockerd)
     Tasks: 9
     Memory: 94.5M
        CPU: 595ms
     CGroup: /system.slice/docker.service __4320 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock
Aug 26 10:56:14 server.example.com systemd[1]: Starting Docker Application Container Engine..
Aug 26 10:56:15 server.example.com dockerd[4320]: time="2024-08-26T10:56:15.248860753+05:30" level=info msg="st
Aug 26 10:56:15 server.example.com dockerd[4320]: time="2024-08-26T10:56:15.397741920+05:30" level=info msg="Lo
Aug 26 10:56:15 server.example.com dockerd[4320]: time="2024-08-26T10:56:15.570032708+05:30" level=info msg="Fi
Aug 26 10:56:17 server.example.com dockerd[4320]: time="2024-08-26T10:56:17.945981899+05:30" level=info msg="Fi
Aug 26 10:56:18 server.example.com dockerd[4320]: time="2024-08-26T10:56:18.563598359+05:30" level=info msg="Lo
Aug 26 10:56:18 server.example.com dockerd[4320]: time="2024-08-26T10:56:18.601533146+05:30" level=info msg="Do
Aug 26 10:56:18 server.example.com dockerd[4320]: time="2024-08-26T10:56:18.601975733+05:30" level=info msg="Da
Aug 26 10:56:18 server.example.com dockerd[4320]: time="2024-08-26T10:56:18.685757946+05:30" level=info msg="AP
Aug 26 10:56:18 server.example.com systemd[1]: Started Docker Application Container Engine.
[root@server ~]#
```

Step 7: Install Git and download for LAMP stack by using the below command

dnf install git



Step 8: Clone the LAMP from github by using "git clone" command.

cd /

Complete! [root@server ~]# ■

git clone https://github.com/jcavat/docker-lamp.git

Step 9: Long list the file and verify the downloaded LAMP directory by using the below command.

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Step 10: Now go to the LAMP directory and long list the LAMP files by using the below command

cd docker-lamp/

ll

Step 11: Open "docker-compose.yml" file and verify the version and port number for LAMP then save and quit from the file by using the below command

vim docker-compose.yml

cat docker-compose.yml

```
Aug 26 11:08 AM 🔥 💍
                                                                                         Q = - * ×
[root@server docker-lamp]# vim docker-compose.yml
[root@server docker-lamp]# cat docker-compose.yml
version: "3.1"
services:
   www:
        build: .
        ports:
            - "8001:80"
        volumes:
           - ./www:/var/www/html/
        links:
            - db
        networks:
            - default
        image: mysql:8.0
        ports:
            - "3306:3306"
        command: --default-authentication-plugin=mysql_native_password
        environment:
            MYSQL_DATABASE: myDb
            MYSQL_USER: user
            MYSQL_PASSWORD: test
```

Step 12: Next open "Dockerfile" and verify the installation command for LAMP then save and quit from the file by using the below command

vim Dockerfile

cat Dockerfile

Step 13: Now go the document root location inside the LAMP directory by using the below command

```
#cd www/

#ll

[root@server docker-lamp]#
[root@server docker-lamp]# cd www/
[root@server www]# ll

total 4
-rw-r--r-. 1 root root 1194 Aug 26 11:02 index.php
[root@server www]# |
```

Step 14: We can keep our web files in www directory by using the below command

#vim index.php

#cat index.php

```
[root@server www]#
[root@server www]# vim index.php
[root@server www]# cat index.php
<html>
 <head>
 <title>Hello...</title>
  <meta charset="utf-8">
  <link rel="stylesheet" href="http://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/css/bootstrap.min</pre>
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.0/jquery.min.js"></script>
  <script src="http://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/js/bootstrap.min.js"></script>
</head>
<body>
    <div class="container">
    <?php echo "<h1>Hi! I'm happy</h1>"; ?>
    <?php
    // Connexion et sélection de la base
```

Step 15: Now use the docker compose command to pull images and create containers and required networks for that go to LAMP directory by using the below command

cd ..

docker compose up -d

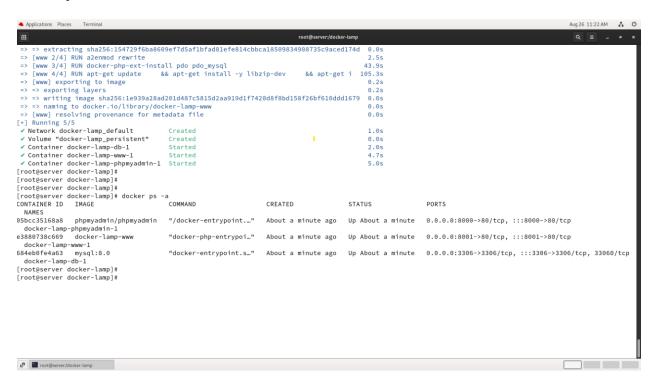
```
Applications Places Terminal
                                                                                                Aug 26 11:15 AM 🙏 💍
                                                                                                Q = - • ×
[root@server www]#
[root@server www]#
[root@server www]# cd ..
[root@server docker-lamp]# docker compose up -d
WARN[0000] /docker-lamp/docker-compose.yml: the attribute `version` is obsolete, it will be ign
ored, please remove it to avoid potential confusion
[+] Running 3/20
                    ] Pulling
                                                                                                    22.7s
.: db [
.: phpmyadmin [
                                     ] Pulling
                                                                                                    22.7s
root@server:/docker-lamp — dock...
```

```
Aug 26 11:18 AM 🙏 💍
                                                                                      Q = -
[+] Building 71.5s (5/7)
                                                                                docker:default
=> => extracting sha256:afb30f0cd8e0ff78b5eecdc2d9365a50441ad83c5db5f1e87942d6426237fa 12.2s
=> => extracting sha256:3bb2e805159413e5278b859f7fbb86ddfc99e667cb705d5d5aec0a7c8ffcf1b 0.0s
=> => extracting sha256:4c761b44e2ccbff3f10b254b21bb00a52dfd26919ad9e3f7efcd569196e6c26 3.0s
=> => extracting sha256:c2199db96575122fd559c29b619a2773fe9069e0266312a6369ac95f4464b1d 0.0s
=> => extracting sha256:1b9a9381eea8f93068e8043f18ea59b709c07256e2f90962931a1433fbdf5e7 0.0s
=> => extracting sha256:fd07bbc59d347c16686f107676436a2281e4128033f105ca7a602aa195bcbe0 0.6s
=> => extracting sha256:72b73ab27698b55aa309173abd0cdd758291b9feaac31342c48ff12f3be1487 0.0s
=> => extracting sha256:983308f4f0d6304dc6cecde8fd66ba5a94a08873a3b8205eb5fflea98b419db 3.1s
=> => extracting sha256:6c13f026e6da09e10ca2edb704b335a62bac29e549a2d0b35e535c9aa8dbeeb 0.0s
=> => extracting sha256:e5e6cd16368920e691da5b8791184d7a8d579dd5cd5e8c533ad2bf0b82c2d0f 0.0s
=> extracting sha256:5c5516e56582a30bd2e69c32d17a169ed7227900318e9d7b5949c8fb447308f
=> extracting sha256:154729f6ba8609ef7d5af1bfad81efe814cbbca18509834908735c9aced174d 0.0s
=> [www 2/4] RUN a2enmod rewrite
                                                                                          2.5s
=> [www 3/4] RUN docker-php-ext-install pdo pdo_mysql
                                                                                         20.6s
=> => # rc/php/ext/pdo/main -I/usr/src/php/ext/pdo -I/usr/local/include/php -I/usr/local/incl
=> => # ude/php/main -I/usr/local/include/php/TSRM -I/usr/local/include/php/Zend -I/usr/local
=> => # /include/php/ext -I/usr/local/include/php/ext/date/lib -fstack-protector-strong -fpic
=> => # -fpie -02 -D_LARGEFILE_SOURCE -D_FILE_OFFSET_BITS=64 -DHAVE_CONFIG_H -fstack-protect
=> => # or-strong -fpic -fpie -02 -D_LARGEFILE_SOURCE -D_FILE_OFFSET_BITS=64 -c /usr/src/php/
=> => # ext/pdo/pdo_dbh.c -fPIC -DPIC -o .libs/pdo_dbh.o
root@server:/docker-lamp — dock...
```

```
Aug 26 11:21 AM 🔥 💍
=> extracting sha256:fd07bbc59d347c16686f107676436a2281e4128033f105ca7a602aa195bcbe0
=> => extracting sha256:72b73ab27698b55aa309173abd0cdd758291b9feaac31342c48ff12f3be1487
=> => extracting sha256:983308f4f0d6304dc6cecde8fd66ba5a94a08873a3b8205eb5fflea98b419db 3.1s
=> extracting sha256:6c13f026e6da09e10ca2edb704b335a62bac29e549a2d0b35e535c9aa8dbeeb
=> extracting sha256:e5e6cd16368920e691da5b8791184d7a8d579dd5cd5e8c533ad2bf0b82c2d0f
=> extracting sha256:5c5516e56582a30bd2e69c32d17a169ed7227900318e9d7b5949c8fb447308f
=> => extracting sha256:154729f6ba8609ef7d5af1bfad81efe814cbbca18509834908735c9aced174d
                                                                                         0.05
=> [www 2/4] RUN a2enmod rewrite
                                                                                         2.5s
=> [www 3/4] RUN docker-php-ext-install pdo pdo_mysql
                                                                                        43.9s
=> [www 4/4] RUN apt-get update
                                 && apt-get install -y libzip-dev
                                                                         && apt-get i 105.3s
=> [www] exporting to image
                                                                                         0.2s
                                                                                         0.2s
=> => exporting layers
=> => writing image sha256:1e939a28ad201d487c5815d2aa919d1f7420d8f8bd158f26bf610ddd1679
                                                                                         0.0s
=> => naming to docker.io/library/docker-lamp-www
                                                                                         0.0s
=> [www] resolving provenance for metadata file
                                                                                         0.0s
[+] Running 5/5
 ✓ Network docker-lamp_default
                                      Created
                                                                                         1.0s
✓ Volume "docker-lamp_persistent"
                                      Created
                                                                                         0.0s
✓ Container docker-lamp-db-1
                                      Started
                                                                                         2.0s
✓ Container docker-lamp-www-1
                                                                                         4.7s
                                      Started
✓ Container docker-lamp-phpmyadmin-1 Started
                                                                                         5.05
[root@server docker-lamp]#
```

Step 16: Check the Container status by using the below command

#docker ps -a



Step 17: Now go the web browser and check the LAMP Service Status by using our server IP address with LAMP Service ports by using the below command

• phpmyadmin: 8000

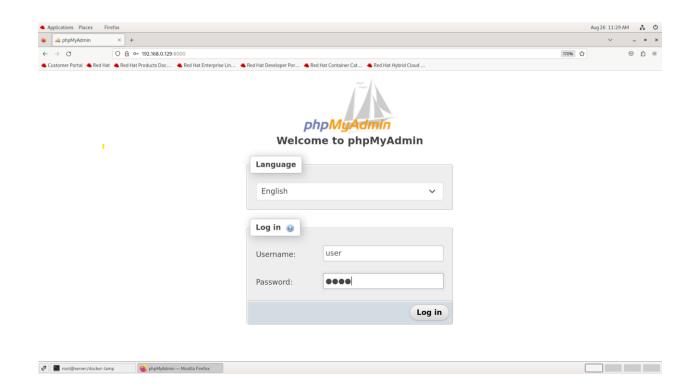
Apache: 8001mysql: 3306

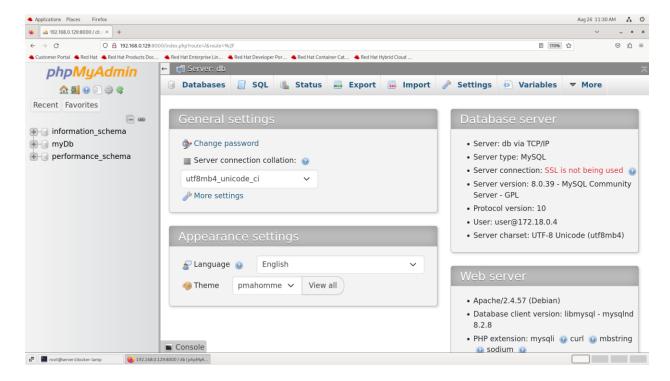
http://<IP Address>:8000

in phpmyAdmin

username:-user

password:-test



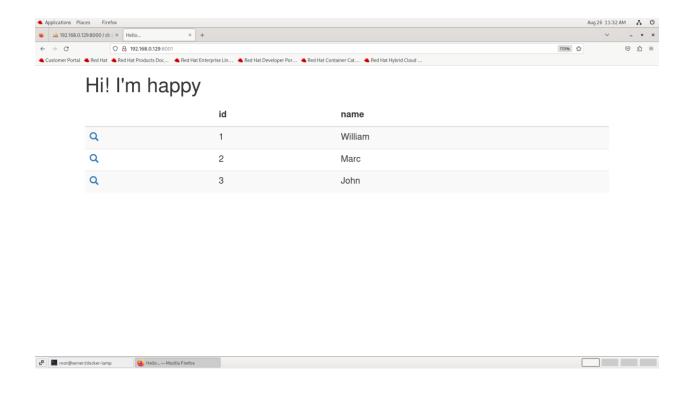


http://<IP Address>:3306



Now, To Show Apache Page

http://<IP Address>:8001



Note:-After Complete a Setup kindly Roll Back a Pratical

*****Thank You!****