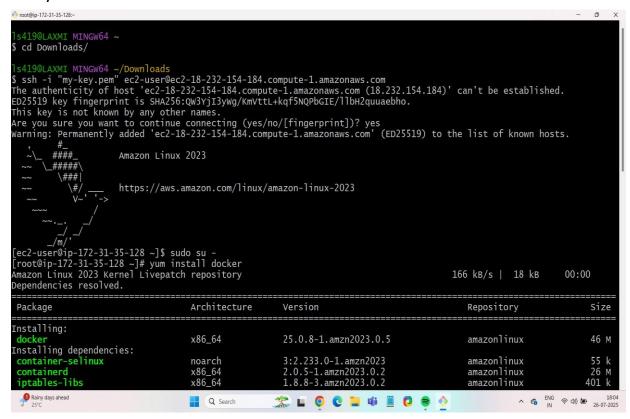
Name: Laxmi Swami

Topic: Docker installation and link multiple container

Create EC2 Instance and connect with gitbash Step-by Step:

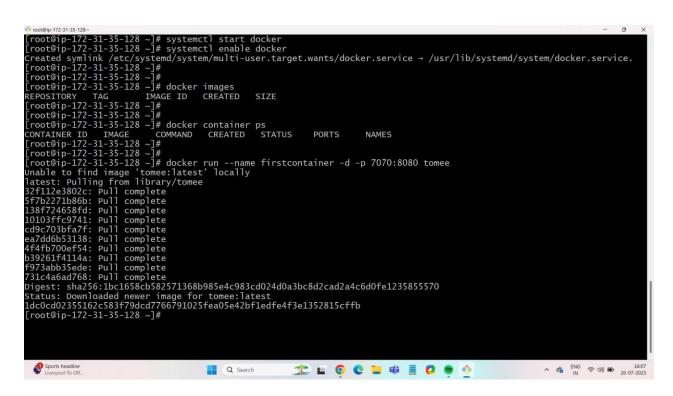
_

- Connect to your EC2 Instance via SSH and install docker using this command:
- Yum install docker
- Systemctl start docker
- Systemctl enable docker



- Docker images: it is used to show images
- Docker ps / docker container ps : it is used to show running container

- · Without installing image we can create container using this command
- Docker run –name firstcontainer -d -p 7070:8080 tomee.



```
♦ root@in-172-31-35-128:
 root@ip-172-
root@ip-172-
 root@ip-172-31-35-128 ~]# docker container ps
ONTAINER ID IMAGE COMMAND
                                                                                         CREATED
                                                                                                                              STATUS
                                                                                                                                                                  PORTS
                            NAMES
                                           "/docker-entrypoint..."
 d4027b03fac
                         nginx
                                                                                                                                                                  0.0.0.0:5050->80/tcp, :::50
3d4U27bU3fac nginx "/docker-entrypoint..." About
50->80/tcp firstcontainer1
1dc0cd023551 tomee "/_cacert_entrypoin..." 3 minu
7070->8080/tcp firstcontainer
[root@ip-172-31-35-128 ~]# docker rm -f firstcontainer1
[root@ip-172-31-35-128 ~]# container ps
-bash: container: command not found
[root@ip-172-31-35-128 ~]# docker container ps
CONTAINER ID IMAGE COMMAND CREATE
NAMES
                                                                                        About a minute ago
                                                                                                                              Up About a minute
                                                                                                                                                                  0.0.0.0:7070->8080/tcp, :::
                                                                                         3 minutes ago
                                                                                                                              Up 3 minutes
                                                                                         CREATED
                                                                                                                     STATUS
          NAMES
 Ldc0cd023551
                                            "/__cacert_entrypoin..."
                                                                                         4 minutes ago
                                                                                                                     Up 4 minutes
                                                                                                                                               0.0.0.0:7070->8080/tcp, :::7070->8080
/tcp firstcontainer
[root@ip-172-31-35-128
[root@ip-172-31-35-128
REPOSITORY TAG
                                       ~]#
~]# docker images
                                        IMAGE ID
2cd1d97f893f
                                                                   CREATED
11 days ago
4 weeks ago
                                                                                            192MB
368MB
                       latest
 omee latest eecd6969e40f 4 weeks
root@ip-172-31-35-128 ~]#
root@ip-172-31-35-128 ~]#
root@ip-172-31-35-128 ~]# docker container ps
 ONTAINER ID NAMES
                                                                                         CREATED
                         IMAGE
                                           COMMAND
                                                                                                                     STATUS
                                                                                                                                                PORTS
NAMES
1dcOcdO23551 tomee
/tcp firstcontainer
[root@ip-172-31-35-128
[root@ip-172-31-35-128
                                            "/__cacert_entrypoin..."
                                                                                                                                               0.0.0.0:7070->8080/tcp, :::7070->8080
                                                                                         5 minutes ago
                                                                                                                     Up 5 minutes
                                       ~]#
~]#
                                                                                           🗯 🗉 🧿 C 📜 💖 🗒 👩 🙈 🥎
                                                                                                                                                                                Q Search
```

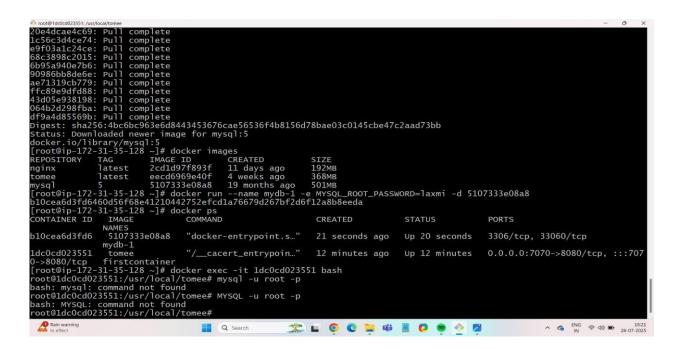
- run a command inside a running Docker container, interactively.
- Docker exec -it containerid
- Go to bin folder: cd bin
- Make executable for startup.sh folder: chmod 777

```
A root@in-172-31-35-128
                                 "/__cacert_entrypoin..." 5 minutes ago Up 5 minutes 0.0.0.0:7070->8080/tcp, :::7070->8080
1dc0cd023551
 tcp firstcontainer
 root@ip-172-31-35-128 ~]#
 [root@ip-1/2-31-35-126 ~]#
[root@ip-172-31-35-128 ~]#
[root@ip-172-31-35-128 ~]# ls
[root@ip-172-31-35-128 ~]#
[root@ip-172-31-35-128 ~]# docker exec -it 1dc0cd023551
"docker exec" requires at least 2 arguments.
 See 'docker exec --help'.
Usage: docker exec [OPTIONS] CONTAINER COMMAND [ARG...]
Execute a command in a running container
[root@ip-172-31-35-128 ~]# docker exec -it 1dc0cd023551 sh
                   conf
                                         lib
                                                     logs
                                                                README.md
                                                                                    RUNNING.txt webapps
BUILDING.txt CONTRIBUTING.md LICENSE NOTICE RELEASE-NOTES
# cd bin
                                                                           service.readme.txt tomcat-juli.jar
                              catalina-tasks.xml daemon.sh
bootstrap.jar
catalina.bat.original
                                                                           setclasspath.sh
                                                                                                      tomee.sh
                              ciphers.sh
                                                         digest.sh
                                                                                                      tool-wrapper.sh
                               commons-daemon.jar
catalina.sh
                                                         makebase.sh
                                                                          shutdown.sh
catalina.sh.original
# chmod 777 startup.sh
                              configtest.sh
                                                         migrate.sh
                                                                           startup.sh
                                                                                                      version.sh
  ./startup.sh
Using CATALINA_BASE:
Using CATALINA_HOME:
                               /usr/local/tomee
/usr/local/tomee
Using CATALINA_TMPDIR: /usr/local/tomee/temp
Using JRE_HOME: /opt/java/openjdk
Using CLASSPATH: /usr/local/tomee/bin/bootstrap.jar:/usr/local/tomee/bin/tomcat-juli.jar
Using CATALINA_OPTS:
 Tomcat started.
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```

Pull mysql version 5 using: docker pull mysql:5

```
# ./startup.sh

# ./startup.sh
```



- Runs a MySQL container in the background with root password set to root123 use this command:
- Docker run –name mysql-container -eMYSQL_ROOT_PASSWORD=root123 d imagename
- docker run -create and start a new container
- -e MYSQL_ROOT_PASSWORD=root123 Sets an environment variable (MYSQL_ROOT_PASSWORD) inside the container. This is required by MySQL to set the root password.
- -d Detached mode

```
Toot@id=0c0d023551:/usr/local/tomee# docker --v
bash: docker: command not found
root@id=0c0d023551:/usr/local/tomee# docker --version
bash: docker: command not found
root@id=0c0d023551:/usr/local/tomee# exit
exit
[root@ip=172-31-35-128 -]# docker -v
bocker version 25.0.8, build Obab007
[root@ip=172-31-35-128 -]# docker pull mysql:5
5; Pulling from library/mysql
Digest: sha256:4bc6bc903e648443453676cae56536f4b8156d78bae03c0145cbe47c2aad73bb
Status: Image is up to date for mysql:5
docker.io/library/mysql:5
[root@ip=172-31-35-128 -]# mysql -v
-bash: mysql: command not found
[root@ip=172-31-35-128 -]# docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
REPOSITORY TAG IMAGE
```

```
Processing 172-31-35-128 = ]# docker run --name mysql-container -e MYSQL_ROOT_PASSWORD=root123 -d mysql:5
15367dc42649548cfba6b4298111a63e229c0b6e2e8f73f585a6a97d0fa2ff5
[root@ip-172-31-35-128 =]# mysql -u root -p
-bash: mysql: command not found
[root@ip-172-31-35-128 =]# docker exec -it mysql-container mysql -u root -p
Enter password:
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)
[root@ip-172-31-35-128 -]# docker exec -it mysql-container mysql -u root -p
Enter password:
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)
[root@ip-172-31-35-128 -]# docker exec -it mysql-container mysql -u root -p
Enter password:
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)
[root@ip-172-31-35-128 -]# mysql -u root -p
Enter password:
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)
[root@ip-172-31-35-128 -]# mysql -u root -p
Enter password:
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)
[root@ip-172-31-35-128 -]# mysql -u root -p
-bash: mysql: command not found
[root@ip-172-31-35-128 -]# root123
-bash: root123: command not found
[root@ip-172-31-35-128 -]# docker exec -it mysql-container mysql -u root -p
Enter password:
welcome to the MysQL monitor. Commands end with ; or \g.
Your MysQL connection id is 5
Server version: 5.7.44 MysQL Community Server (GPL)

Copyright (c) 2000, 2023, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

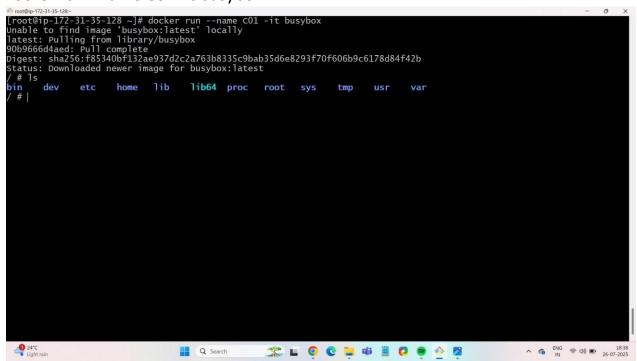
mysql>
```

In that mysql use some mysql command:

```
-bash: mysql: command not found
[root@ip-172-31-35-128 ~]# root123
-bash: root123: command not found
[root@ip-172-31-35-128 ~]# docker exec -it mysql-container mysql -u root -p
Enter password:
Welcome to the MySQL monitor. Commands end with;
Your MySQL connection id is 5
Server version: 5.7.44 MySQL Community Server (GPL)
                                           Commands end with ; or \g.
Copyright (c) 2000, 2023, Oracle and/or its affiliates.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> show databases
  Database
  information_schema
  performance_schema
  sys
  rows in set (0.02 sec)
mysql> create database mydb
Query OK, 1 row affected (0.00 sec)
mysql>
                                                                       🌊 🖿 🍳 G 🚊 🖷 📱 🖸 📦 🥎 💆
                                               Q Search
```

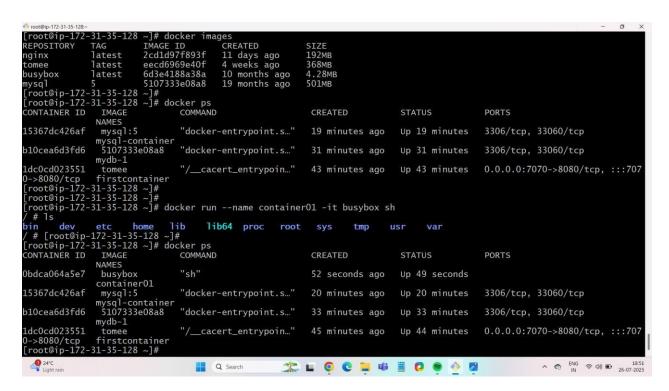
Runs a container named C01 using the busybox image in interactive terminal mode

Docker run –name CO1 -it busybox:



- Runs a container named container1 using the busybox image, and starts an interactive shell (sh) inside it.
- Docker run –name container1 -it busybox sh

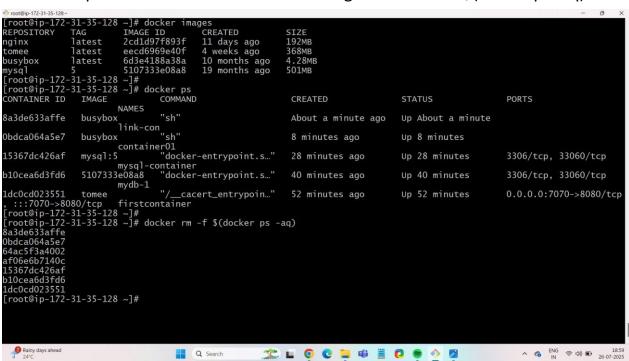
```
IMAGE ID
2cd1d97f893f
                                                                      192MB
368MB
                                                 11 days ago
4 weeks ago
nginx
                 latest
                             6d3e4188a38a
5107333e08a8
                                                 10 months ago
19 months ago
                                                                      4.28MB
                                  docker ps
COMMAND
                 IMAGE
NAMES
                                                                       CREATED
                                                                                             STATUS
                                                                                                                  PORTS
L5367dc426af
                                      "docker-entrypoint.s..."
                                                                       19 minutes ago
                                                                                             Up 19 minutes
                                                                                                                  3306/tcp, 33060/tcp
                 mysql-container
5107333e08a8
10cea6d3fd6
                                       "docker-entrypoint.s..."
                                                                       31 minutes ago
                                                                                             Up 31 minutes
                                                                                                                  3306/tcp, 33060/tcp
                 mydb-1
tomee
dc0cd023551
                                                                                             Up 43 minutes
                                                                                                                  0.0.0.0:7070->8080/tcp, :::707
                                          _cacert_entrypoin..."
                                                                       43 minutes ago
                   irstcontainer
-35-128 ~]#
-35-128 ~]#
 >8080/tcp
oot@ip-172
root@ip-172-31-35
root@ip-172-31-35
                                  docker run --name container01 -it busybox sh
        dev
                          home
                                    lib
                                                      proc
                                                                                           usr
                                                                                                    var
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```



- Runs a new container named link-con, links it to container01 as busyboxlink, and starts an interactive shell using the busybox image
- Docker run -name link-con –link container01:busyboxlink -it busybox sh:

```
ot@in-172-31-35-128
                    31-35-128
[root@ip-172
REPOSITORY
                                    IMAGE ID
2cd1d97f893f
                                                                                     SIZE
192MB
368MB
                                                           11 days ago
4 weeks ago
nginx
                     latest
                                    6d3e4188a38a
5107333e08a8
                                                           10 months ago
19 months ago
                                                                                     4.28MB
501MB
                   -31-35-128
-31-35-128
 root@ip-172
root@ip-172
                                         docker ps
COMMAND
                     IMAGE
NAMES
 ONTAINER ID
                                                                                       CREATED
                                                                                                                  STATUS
                                                                                                                                           PORTS
Obdca064a5e7
                       busybox
                                               "sh"
                                                                                       4 minutes ago
                                                                                                                  Up 3 minutes
                     container01
mysql:5
mysql-container
5107333e08a8
15367dc426af
                                               "docker-entrypoint.s.."
                                                                                       23 minutes ago
                                                                                                                 Up 23 minutes
                                                                                                                                           3306/tcp, 33060/tcp
10cea6d3fd6
                                               "docker-entrypoint.s.."
                                                                                                                                           3306/tcp, 33060/tcp
                                                                                       36 minutes ago
                                                                                                                 Up 36 minutes
                     mydb-1
tomee
                                                                                                                                           0.0.0.0:7070->8080/tcp, :::707
                                                "/__cacert_entrypoin..."
                                                                                      48 minutes ago
                                                                                                                 Up 48 minutes
 ->8080/tcp firstcontainer
root@ip-172-31-35-128 ~]#
root@ip-172-31-35-128 ~]# docker run --name link-con --link container01:busyboxlink -it busybox sh
  # ping container01
NG container01 (172.17.0.5): 56 data bytes
bytes from 172.17.0.5: seq=0 ttl=127 time=1.020 ms
bytes from 172.17.0.5: seq=1 ttl=127 time=0.081 ms
bytes from 172.17.0.5: seq=2 ttl=127 time=0.079 ms
bytes from 172.17.0.5: seq=3 ttl=127 time=0.089 ms
                                                                              🎎 🖿 🌀 G 🍃 🤫 📱 🖸 💩 💀
                                                                                                                                                            Q Search
```

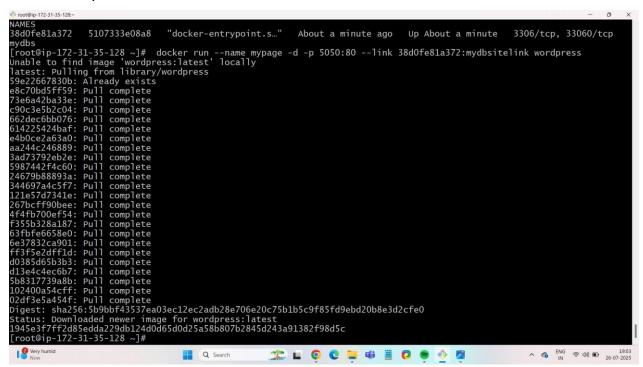
• Multiple container delete at a time using: docker rm -f \$(docker ps -aq)



Docker run –name mydbs -e MYSQL_ROOT-PASSWORD=laxi -d imageid

```
♦ root@in-172-31-35-128:-
Obdca064a5e7
                                                                                 Up 8 minutes
               busybox
                                                           8 minutes ago
                       container01
"docker-entrypoint.s.."
               mysq1:5
                                                                                                       3306/tcp, 33060/tcp
15367dc426af
                                                           28 minutes ago
                                                                                 Up 28 minutes
               mysql-container
5107333e08a8 "docker-entrypoint.s..."
10cea6d3fd6
                                                           40 minutes ago
                                                                                 Up 40 minutes
                                                                                                       3306/tcp, 33060/tcp
1dc0cd023551
                                                           52 minutes ago
                                                                                 Up 52 minutes
                                                                                                       0.0.0.0:7070->8080/tcp
 5367dc426af
10cea6d3fd6
root@ip-172-31-35-128 ~]#
root@ip-172-31-35-128 ~]#
root@ip-172-31-35-128 ~]#
root@ip-172-31-35-128 ~]# docker run --name mydbs -e MYSQL_ROOT,
8d0fe81a3723abfc891fd4a22f6a32b188191db7981c216be534b2fb8fe1b9f
root@ip-172-31-35-128 ~]# docker ps
                                                       -e MYSQL_ROOT_PASSWORD=laxi -d 5107333e08a8
                        ~]# docker ps
COMMAND
8d0fe81a372
               5107333e08a8
                               "docker-entrypoint.s..."
                                                                                                       3306/tcp, 33060/tcp
                                                          About a minute ago Up About a minute
🗯 🖿 🧿 🕲 📮 🖷 📱 🖸 📦 🚸 💆
                                   Q Search
```

- Run WordPress on http://localhost:5050 and connect it to a linked MySQL container.
- docker run --name mypage -d -p 5050:80 --link containerid:mydbslink wordpress



- Docker linked connection check using this command:
- Ping containerid
- Docker inspect

· Using web browser

