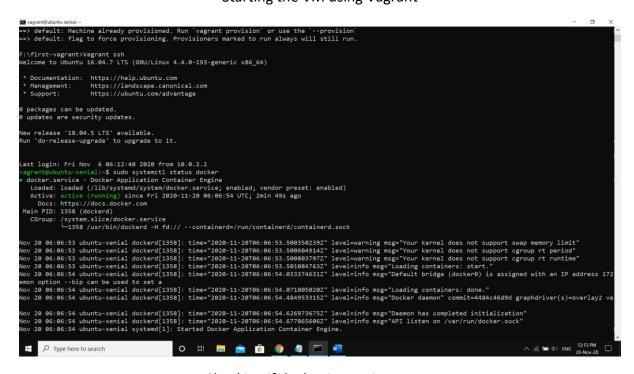# Continuous Integration and Continuous Deployment Lab

EXPERIMENT – 13 (Docker Commands)

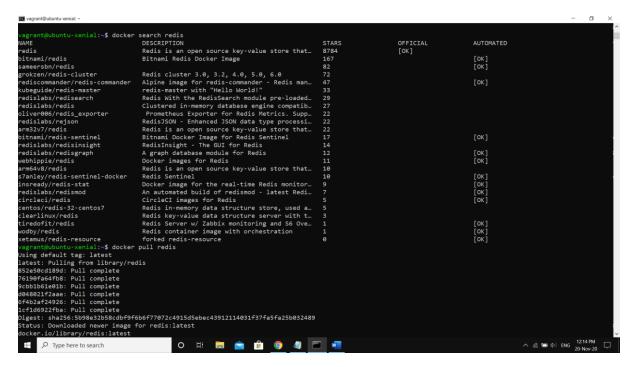## Name : Harivansh Mathur

Roll No : R171218043
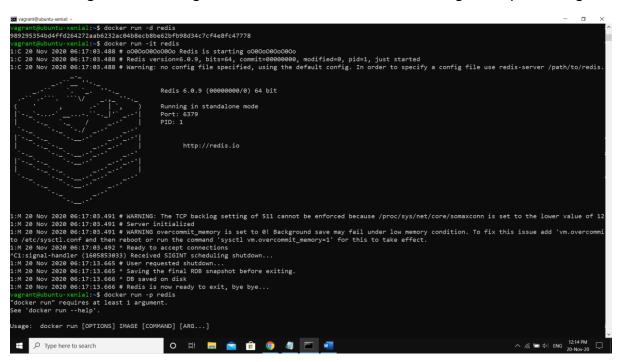

Starting the VM using Vagrant

Checking if docker is running or not

```
vagrant@ubuntu-xenial:~$ docker search redis
NAME                             DESCRIPTION                                    STARS    OFFICIAL    AUTOMATED
redis                            Redis is an open source key-value store that…  8784     [OK]
bitnami/redis                    Bitnami Redis Docker Image                     167                  [OK]
sameersbn/redis                                                                 82                   [OK]
grokzen/redis-cluster            Redis cluster 3.0, 3.2, 4.0, 5.0, 6.0          72
rediscommander/redis-commander   Alpine image for redis-commander - Redis man…  47                   [OK]
kubeguide/redis-master           redis-master with "Hello World!"               33
redislabs/redisearch             Redis With the RedisSearch module pre-loaded…  29
redislabs/redis                  Clustered in-memory database engine compatib…  27
oliver006/redis_exporter          Prometheus Exporter for Redis Metrics. Supp…  22
redislabs/rejson                 RedisJSON - Enhanced JSON data type processi…  22
arm32v7/redis                    Redis is an open source key-value store that…  22
bitnami/redis-sentinel           Bitnami Docker Image for Redis Sentinel        17                   [OK]
redislabs/redisinsight           RedisInsight - The GUI for Redis               14
redislabs/redisgraph             A graph database module for Redis              12                   [OK]
webhippie/redis                  Docker images for Redis                        11                   [OK]
arm64v8/redis                    Redis is an open source key-value store that…  10
s7anley/redis-sentinel-docker    Redis Sentinel                                 10                   [OK]
insready/redis-stat              Docker image for the real-time Redis monitor…  9                    [OK]
redislabs/redismod               An automated build of redismod - latest Redi…  7                    [OK]
circleci/redis                   CircleCI images for Redis                      5                    [OK]
centos/redis-32-centos7          Redis in-memory data structure store, used a…  5
clearlinux/redis                 Redis key-value data structure server with t…  3
tiredofit/redis                  Redis Server w/ Zabbix monitoring and S6 Ove…  1                    [OK]
wodby/redis                      Redis container image with orchestration       1                    [OK]
xetamus/redis-resource           forked redis-resource                          0                    [OK]
vagrant@ubuntu-xenial:~$ docker pull redis
Using default tag: latest
latest: Pulling from library/redis
852e50cd189d: Pull complete
76190fa64fb8: Pull complete
9cbb1b61e01b: Pull complete
d048021f2aae: Pull complete
6f4b2af24926: Pull complete
1cf1d6922fba: Pull complete
Digest: sha256:5b98e32b58cdbf9f6b6f77072c4915d5ebec43912114031f37fa5fa25b032489
Status: Downloaded newer image for redis:latest
docker.io/library/redis:latest
```

Searching for docker images named "**redis**" and then downloading the required image


```
vagrant@ubuntu-xenial:~$ docker run -d redis
989295354bd4ffd264272aab6232ac04b8ecb8be62bfb98d34c7cf4e8fc47778
vagrant@ubuntu-xenial:~$ docker run -it redis
1:C 20 Nov 2020 06:17:03.488 # oO0OoO0OoO0Oo Redis is starting oO0OoO0OoO0Oo
1:C 20 Nov 2020 06:17:03.488 # Redis version=6.0.9, bits=64, commit=00000000, modified=0, pid=1, just started
1:C 20 Nov 2020 06:17:03.488 # Warning: no config file specified, using the default config. In order to specify a config file use redis-server /path/to/redis.

                 _._
            _.-``__ ''-._
       _.-``    `.  `_.  ''-._           Redis 6.0.9 (00000000/0) 64 bit
   .-`` .-```.  ```\/    _.,_ ''-._
  (    '      ,       .-`  | `,    )     Running in standalone mode
  |`-._`-...-` __...-.``-._|'` _.-'|     Port: 6379
  |    `-._   `._    /     _.-'    |     PID: 1
   `-._    `-._  `-./  _.-'    _.-'
  |`-._`-._    `-.__.-'    _.-'_.-'|
  |    `-._`-._        _.-'_.-'    |           http://redis.io
   `-._    `-._`-.__.-'_.-'    _.-'
  |`-._`-._    `-.__.-'    _.-'_.-'|
  |    `-._`-._        _.-'_.-'    |
   `-._    `-._`-.__.-'_.-'    _.-'
       `-._    `-.__.-'    _.-'
           `-._        _.-'
               `-.__.-'

1:M 20 Nov 2020 06:17:03.491 # WARNING: The TCP backlog setting of 511 cannot be enforced because /proc/sys/net/core/somaxconn is set to the lower value of 12
1:M 20 Nov 2020 06:17:03.491 # Server initialized
1:M 20 Nov 2020 06:17:03.491 # WARNING overcommit_memory is set to 0! Background save may fail under low memory condition. To fix this issue add 'vm.overcommi
to /etc/sysctl.conf and then reboot or run the command 'sysctl vm.overcommit_memory=1' for this to take effect.
1:M 20 Nov 2020 06:17:03.492 * Ready to accept connections
^C1:signal-handler (1605853033) Received SIGINT scheduling shutdown...
1:M 20 Nov 2020 06:17:13.665 # User requested shutdown...
1:M 20 Nov 2020 06:17:13.665 * Saving the final RDB snapshot before exiting.
1:M 20 Nov 2020 06:17:13.666 * DB saved on disk
1:M 20 Nov 2020 06:17:13.666 # Redis is now ready to exit, bye bye...
vagrant@ubuntu-xenial:~$ docker run -p redis
"docker run" requires at least 1 argument.
See 'docker run --help'.

Usage:  docker run [OPTIONS] IMAGE [COMMAND] [ARG...]
```

-d for running in background and **-it** for interactive terminal

```
vagrant@ubuntu-xenial:~$ docker run -p 8080:80 redis
1:C 20 Nov 2020 06:29:45.507 # oO0oO0O0Oo Redis is starting oO0oO0O0Oo
1:C 20 Nov 2020 06:29:45.507 # Redis version=6.0.9, bits=64, commit=00000000, modified=0, pid=1, just started
1:C 20 Nov 2020 06:29:45.507 # Warning: no config file specified, using the default config. In order to specify a config file use redis-server /path/to/redis.
1:M 20 Nov 2020 06:29:45.509 * Running mode=standalone, port=6379.
1:M 20 Nov 2020 06:29:45.509 # WARNING: The TCP backlog setting of 511 cannot be enforced because /proc/sys/net/core/somaxconn is set to the lower value of 12
1:M 20 Nov 2020 06:29:45.509 # Server initialized
1:M 20 Nov 2020 06:29:45.509 # WARNING overcommit_memory is set to 0! Background save may fail under low memory condition. To fix this issue add 'vm.overcommi
to /etc/sysctl.conf and then reboot or run the command 'sysctl vm.overcommit_memory=1' for this to take effect.
1:M 20 Nov 2020 06:29:45.509 * Ready to accept connections
^C1:signal-handler (1605853799) Received SIGINT scheduling shutdown...
1:M 20 Nov 2020 06:29:59.842 # User requested shutdown...
1:M 20 Nov 2020 06:29:59.842 * Saving the final RDB snapshot before exiting.
1:M 20 Nov 2020 06:29:59.843 * DB saved on disk
1:M 20 Nov 2020 06:29:59.843 # Redis is now ready to exit, bye bye...
vagrant@ubuntu-xenial:~$ ^C
vagrant@ubuntu-xenial:~$ docker run --name test redis
1:C 20 Nov 2020 06:30:44.453 # oO0oO0O0Oo Redis is starting oO0oO0O0Oo
1:C 20 Nov 2020 06:30:44.453 # Redis version=6.0.9, bits=64, commit=00000000, modified=0, pid=1, just started
1:C 20 Nov 2020 06:30:44.453 # Warning: no config file specified, using the default config. In order to specify a config file use redis-server /path/to/redis.
1:M 20 Nov 2020 06:30:44.455 * Running mode=standalone, port=6379.
1:M 20 Nov 2020 06:30:44.455 # WARNING: The TCP backlog setting of 511 cannot be enforced because /proc/sys/net/core/somaxconn is set to the lower value of 12
1:M 20 Nov 2020 06:30:44.455 # Server initialized
1:M 20 Nov 2020 06:30:44.455 # WARNING overcommit_memory is set to 0! Background save may fail under low memory condition. To fix this issue add 'vm.overcommi
to /etc/sysctl.conf and then reboot or run the command 'sysctl vm.overcommit_memory=1' for this to take effect.
1:M 20 Nov 2020 06:30:44.456 * Ready to accept connections
^C1:signal-handler (1605853851) Received SIGINT scheduling shutdown...
1:M 20 Nov 2020 06:30:51.545 # User requested shutdown...
1:M 20 Nov 2020 06:30:51.545 * Saving the final RDB snapshot before exiting.
1:M 20 Nov 2020 06:30:51.546 * DB saved on disk
1:M 20 Nov 2020 06:30:51.546 # Redis is now ready to exit, bye bye...
vagrant@ubuntu-xenial:~$ docker run --name test it  ^Cdis
vagrant@ubuntu-xenial:~$ docker ps
CONTAINER ID    IMAGE     COMMAND              CREATED          STATUS           PORTS        NAMES
989295354bd4    redis     "docker-entrypoint.s…"   14 minutes ago   Up 14 minutes    6379/tcp     infallible_swartz
vagrant@ubuntu-xenial:~$ docker ps -a
CONTAINER ID    IMAGE     COMMAND              CREATED          STATUS               PORTS        NAMES
fc5214159b1b    redis     "docker-entrypoint.s…"   44 seconds ago   Exited (0) 36 seconds ago        test
dd09f62b7568    redis     "docker-entrypoint.s…"   About a minute ago   Exited (0) About a minute ago    sharp_keller
ace4825d6132    redis     "docker-entrypoint.s…"   14 minutes ago   Exited (0) 14 minutes ago        gifted_murdock
```

-p for publishing ports and **--name** for naming the container


```
vagrant@ubuntu-xenial:~$ docker ps
CONTAINER ID    IMAGE     COMMAND              CREATED          STATUS           PORTS        NAMES
989295354bd4    redis     "docker-entrypoint.s…"   14 minutes ago   Up 14 minutes    6379/tcp     infallible_swartz
vagrant@ubuntu-xenial:~$ docker ps -a
CONTAINER ID    IMAGE     COMMAND              CREATED          STATUS               PORTS        NAMES
fc5214159b1b    redis     "docker-entrypoint.s…"   44 seconds ago   Exited (0) 36 seconds ago        test
dd09f62b7568    redis     "docker-entrypoint.s…"   About a minute ago   Exited (0) About a minute ago    sharp_keller
ace4825d6132    redis     "docker-entrypoint.s…"   14 minutes ago   Exited (0) 14 minutes ago        gifted_murdock
989295354bd4    redis     "docker-entrypoint.s…"   14 minutes ago   Up 14 minutes        6379/tcp     infallible_swartz
2e6d810bd42a    ubuntu    "/bin/bash"          2 weeks ago      Exited (0) 2 weeks ago           trusting_blackwell
6fd9d26742ee    ubuntu    "/bin/bash"          2 weeks ago      Exited (0) 2 weeks ago           trusting_chandrasekh
vagrant@ubuntu-xenial:~$ docker inspect --format='{{.Config.Image}}' fc521
redis
vagrant@ubuntu-xenial:~$ docker stop test
test
vagrant@ubuntu-xenial:~$ docker ps -a
CONTAINER ID    IMAGE     COMMAND              CREATED          STATUS               PORTS        NAMES
fc5214159b1b    redis     "docker-entrypoint.s…"   3 minutes ago    Exited (0) 3 minutes ago         test
dd09f62b7568    redis     "docker-entrypoint.s…"   4 minutes ago    Exited (0) 4 minutes ago         sharp_keller
ace4825d6132    redis     "docker-entrypoint.s…"   17 minutes ago   Exited (0) 16 minutes ago        gifted_murdock
989295354bd4    redis     "docker-entrypoint.s…"   17 minutes ago   Up 17 minutes        6379/tcp     infallible_swartz
2e6d810bd42a    ubuntu    "/bin/bash"          2 weeks ago      Exited (0) 2 weeks ago           trusting_blackwell
6fd9d26742ee    ubuntu    "/bin/bash"          2 weeks ago      Exited (0) 2 weeks ago           trusting_chandrasekhar
vagrant@ubuntu-xenial:~$ docker stop infallible_swartz
infallible_swartz
vagrant@ubuntu-xenial:~$ docker ps
CONTAINER ID    IMAGE     COMMAND              CREATED          STATUS           PORTS        NAMES
vagrant@ubuntu-xenial:~$ docker start 98929
98929
vagrant@ubuntu-xenial:~$ docker ps
CONTAINER ID    IMAGE     COMMAND              CREATED          STATUS           PORTS        NAMES
989295354bd4    redis     "docker-entrypoint.s…"   18 minutes ago   Up 4 seconds     6379/tcp     infallible_swartz
vagrant@ubuntu-xenial:~$ docker attach
"docker attach" requires exactly 1 argument.
See 'docker attach --help'.

Usage:  docker attach [OPTIONS] CONTAINER

Attach local standard input, output, and error streams to a running container
vagrant@ubuntu-xenial:~$ docker attach --help
```

ps (process status) which show only running containers while **ps -a** shows all containers

inspect for fetching particular information about a container while **stop** and **start** for stopping and starting a container respectively

```
vagrant@ubuntu-xenial: ~
vagrant@ubuntu-xenial:~$ docker start --attach test
^C1:signal-handler (1605854580) Received SIGINT scheduling shutdown...
1:M 20 Nov 2020 06:43:00.424 # User requested shutdown...
1:M 20 Nov 2020 06:43:00.424 * Saving the final RDB snapshot before exiting.
1:M 20 Nov 2020 06:43:00.425 * DB saved on disk
1:M 20 Nov 2020 06:43:00.425 # Redis is now ready to exit, bye bye...
vagrant@ubuntu-xenial:~$ docker start --attach gifted_murdock
1:C 20 Nov 2020 06:43:16.133 # oO0Oo0OoO0Oo Redis is starting oO0Oo0OoO0Oo
1:C 20 Nov 2020 06:43:16.133 # Redis version=6.0.9, bits=64, commit=00000000, modified=0, pid=1, just started
1:C 20 Nov 2020 06:43:16.133 # Warning: no config file specified, using the default config. In order to specify a config file use redis-server /path/to/redis.

                 _._
            _.-``__ ''-._
       _.-``    `.  `_.  ''-._           Redis 6.0.9 (00000000/0) 64 bit
   .-`` .-```.  ```\/    _.,_ ''-._
  (    '      ,       .-`  | `,    )      Running in standalone mode
  |`-._`-...-` __...-.``-._|'` _.-'|      Port: 6379
  |    `-._   `._    /     _.-'    |      PID: 1
   `-._    `-._  `-./  _.-'    _.-'
  |`-._`-._    `-.__.-'    _.-'_.-'|
  |    `-._`-._        _.-'_.-'    |           http://redis.io
   `-._    `-._`-.__.-'_.-'    _.-'
  |`-._`-._    `-.__.-'    _.-'_.-'|
  |    `-._`-._        _.-'_.-'    |
   `-._    `-._`-.__.-'_.-'    _.-'
       `-._    `-.__.-'    _.-'
           `-._        _.-'
               `-.__.-'

1:M 20 Nov 2020 06:43:16.135 # WARNING: The TCP backlog setting of 511 cannot be enforced because /proc/sys/net/core/somaxconn is set to the lower value of 12
1:M 20 Nov 2020 06:43:16.135 # Server initialized
1:M 20 Nov 2020 06:43:16.136 # WARNING overcommit_memory is set to 0! Background save may fail under low memory condition. To fix this issue add 'vm.overcommi
to /etc/sysctl.conf and then reboot or run the command 'sysctl vm.overcommit_memory=1' for this to take effect.
1:M 20 Nov 2020 06:43:16.157 * Loading RDB produced by version 6.0.9
1:M 20 Nov 2020 06:43:16.157 * RDB age 1563 seconds
1:M 20 Nov 2020 06:43:16.157 * RDB memory usage when created 0.76 Mb
1:M 20 Nov 2020 06:43:16.157 * DB loaded from disk: 0.021 seconds
1:M 20 Nov 2020 06:43:16.157 * Ready to accept connections
^C
vagrant@ubuntu-xenial:~$
```

--attach to attach local STDIN and STDOUT streams to a running container