Assessment 1: devops

submitted by

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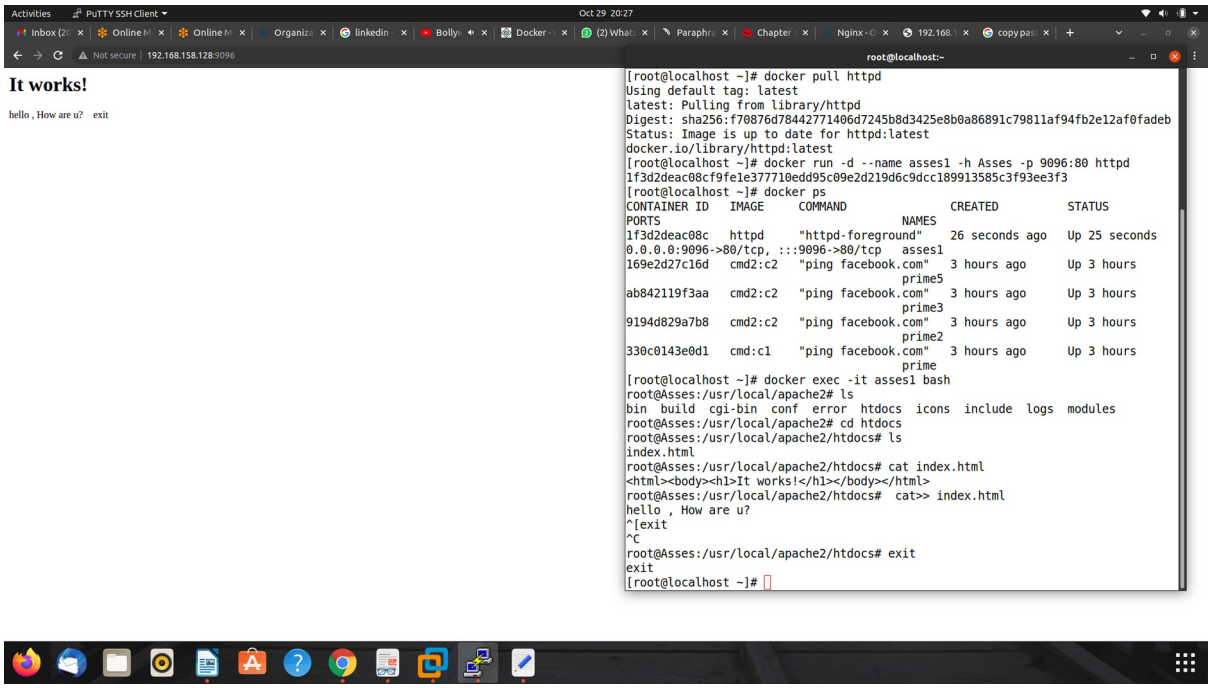
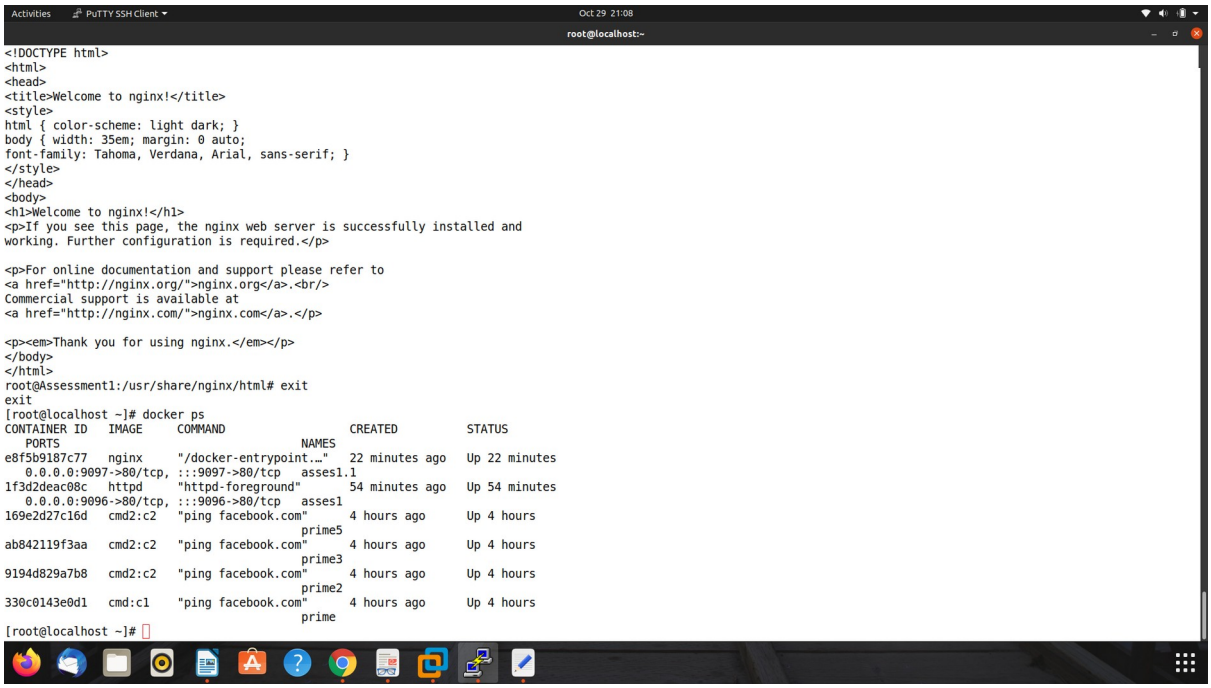
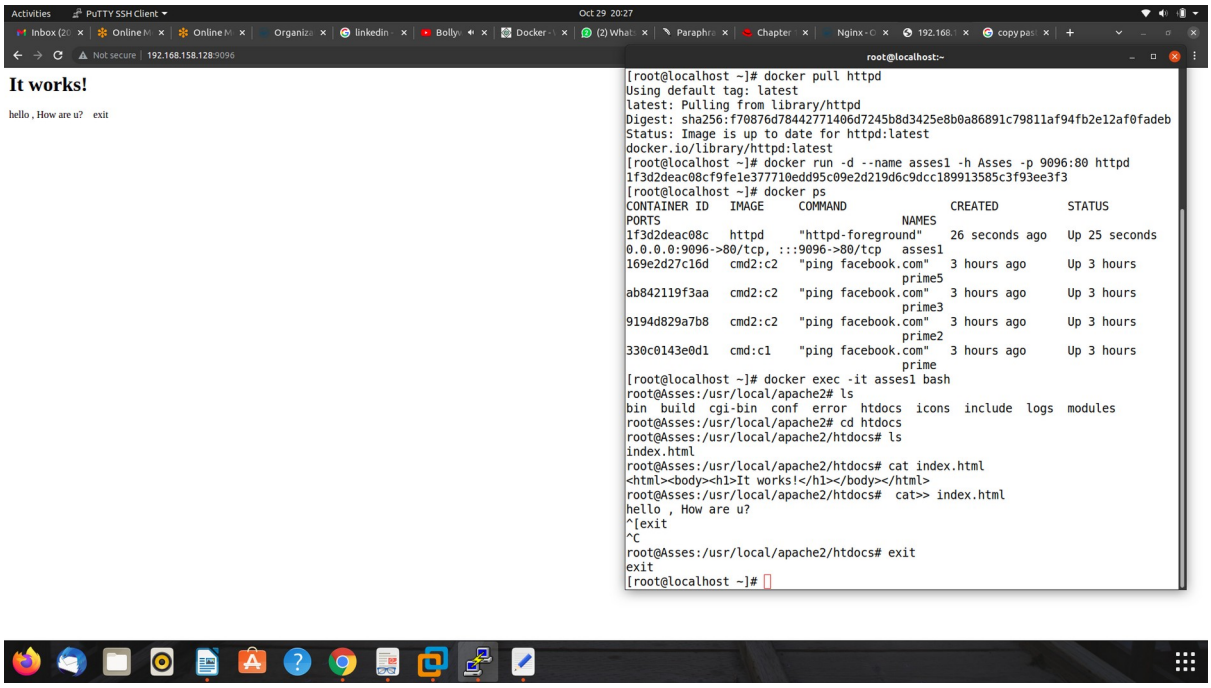
1]On VM install Docker Engg create web application containers provide port number 9095 of nginx and httpd on port number 9096

solution:







2]What are the features of underlying operating system , explain type of storage that docker can provide and create container provide storage =type =volume , name vol10

solution:-

Namespaces

The kernel provides process isolation by creating separate namespaces for containers. Namespaces enable creating an abstraction of a particular global system resource and make it appear as a separated instance to processes within a namespace.

Moutpoint

With mount namespaces, the mount() and umount() system calls cease to operate on a global set of mount points (visible to all processes)

Cgroups are used by the kernel to organise processes for system resource management. Cgroups distribute CPU time, system memory, network bandwidth, or a mix of these resources among user-defined task groups.

UTS namespaces:isolate two system identifiers – nodename and domainname, returned by the uname() system call.

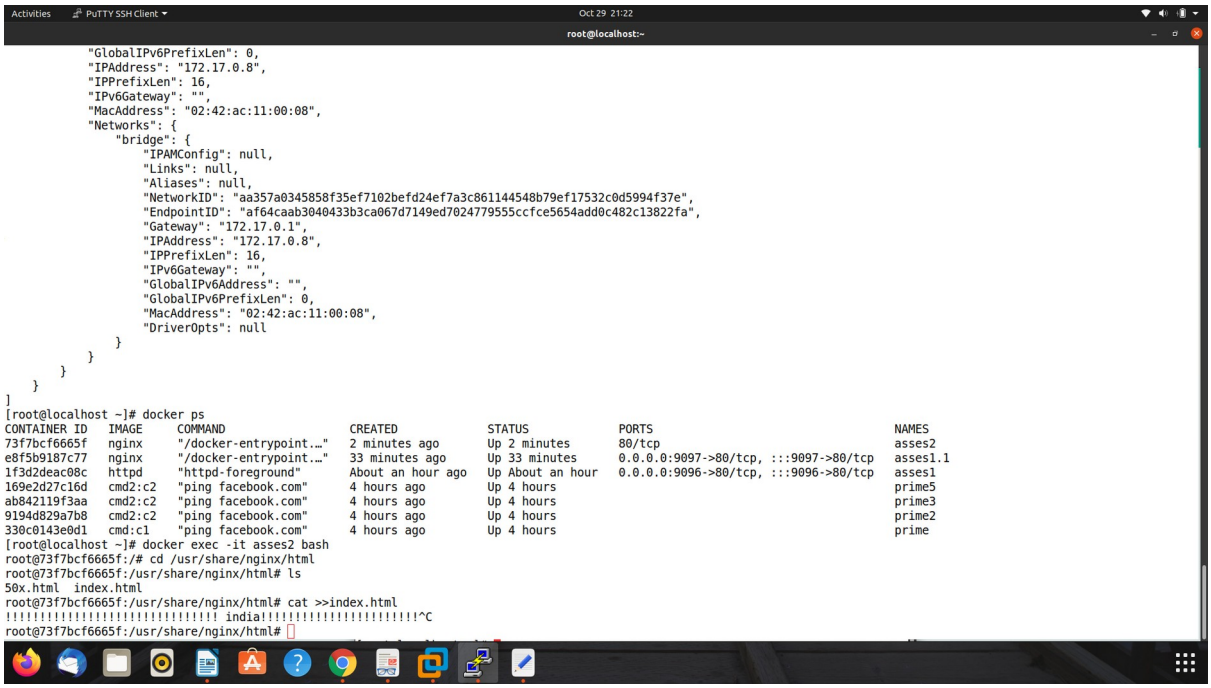
IPC namespaces isolate certain interprocess communication (IPC) resources, such as System V IPC objects and POSIX message queues

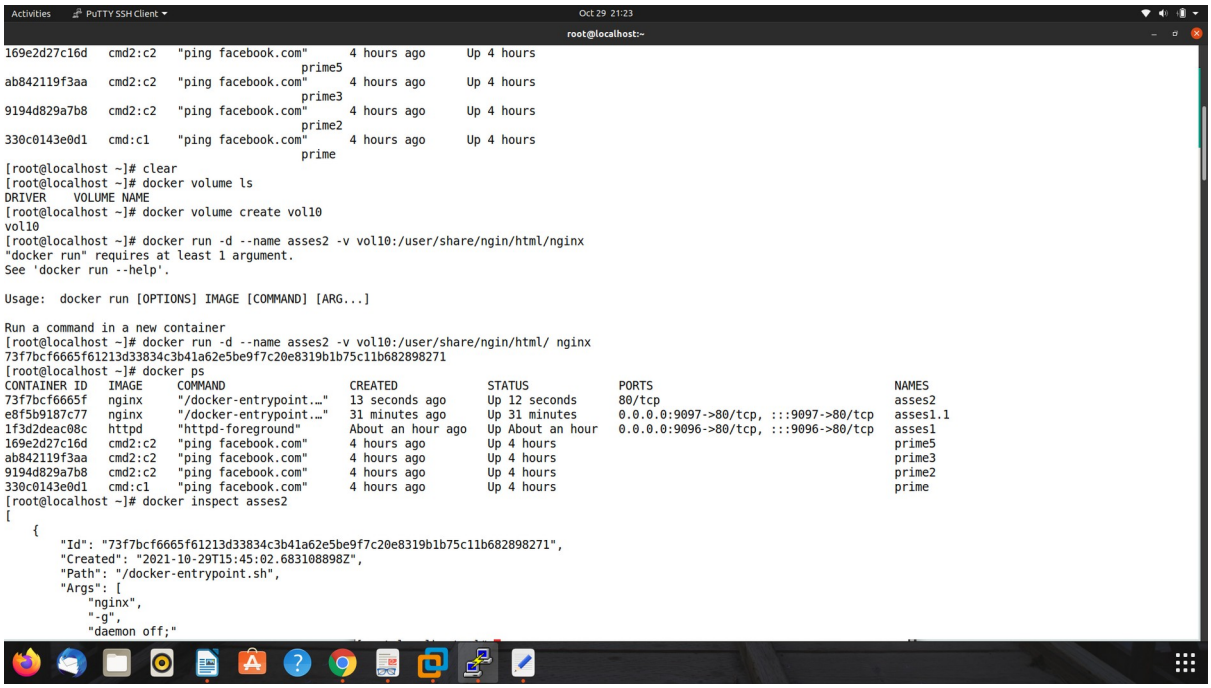
PID namespaces allow processes in different containers to have the same PID, so each container can have its own init (PID1) process that manages various system initialization tasks as well as containers life cycle.

Network namespaces provide isolation of network controllers, system resources associated with networking, firewall and routing tables.

Security-Enhanced Linux (SELinux) is an implementation of a mandatory access control (MAC) mechanism, multi-level security (MLS), and multi-category security (MCS) in the Linux kernel.

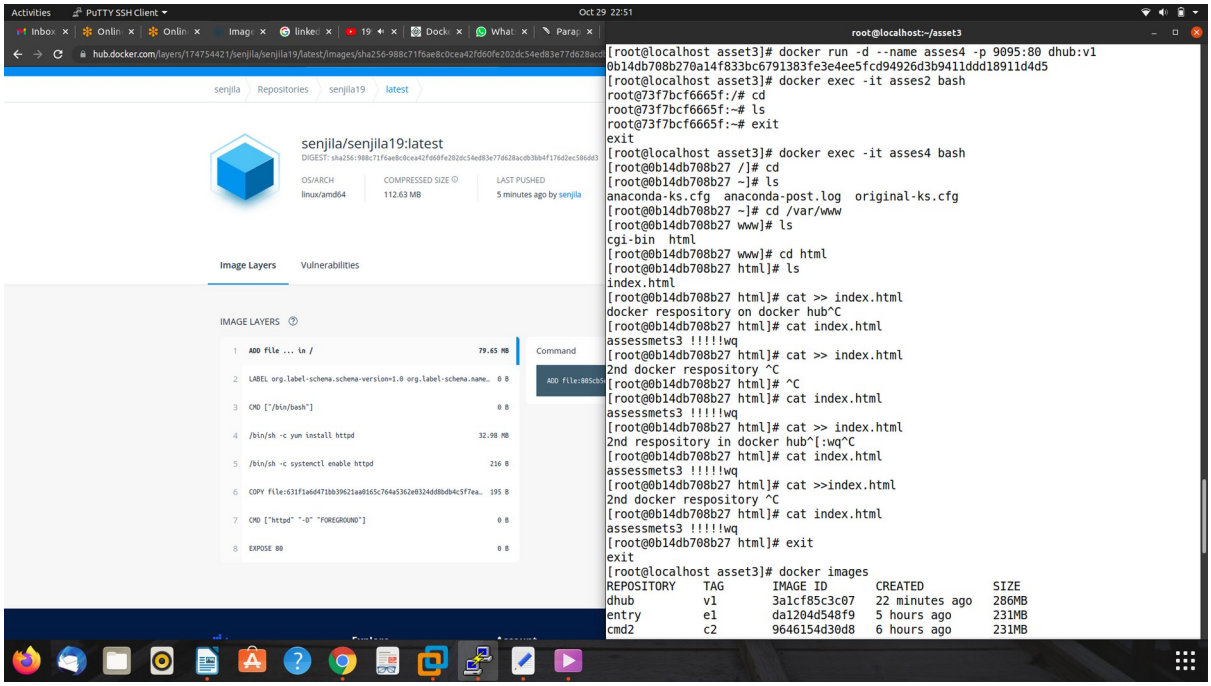
Secure computing mode(seccomp) is a Linux kernel feature. You can use it to restrict the actions available within the container. The seccomp() system call operates on the seccomp state of the calling process.

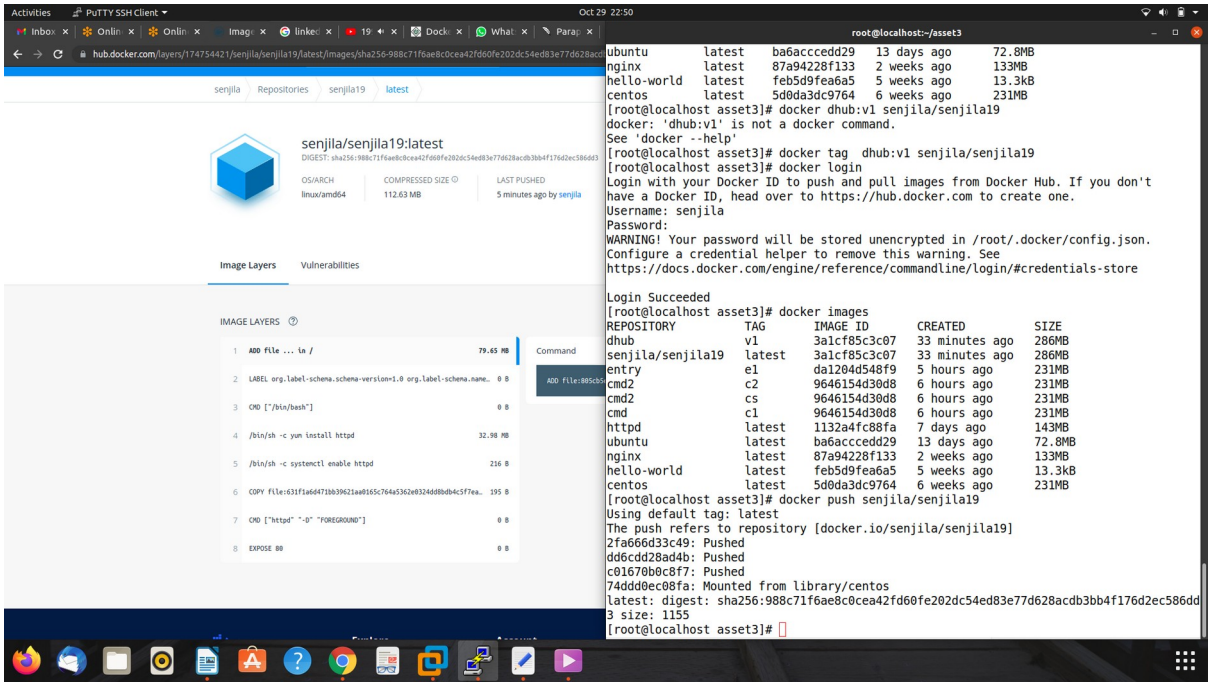

Activities
PuTTY SSH Client
Oct 29 21:22
root@localhost:~
"GlobalIPv6PrefixLen": 0,
"IPAddress": "172.17.0.8",
"IPPrefixLen": 16,
"IPv6Gateway": "",
"MacAddress": "02:42:ac:11:00:08",
"Networks": {
"bridge": {
"IPAMConfig": null,
"Links": null,
"Aliases": null,
"NetworkID": "aa357a0345858f35ef7102befd24ef7a3c861144548b79ef17532c0d5994f37e",
"EndpointID": "af64caab3040433b3ca067d7149ed7024779555ccfce5654add0c482c13822fa",
"Gateway": "172.17.0.1",
"IPAddress": "172.17.0.8",
"IPPrefixLen": 16,
"IPv6Gateway": "",
"GlobalIPv6Address": "",
"GlobalIPv6PrefixLen": 0,
"MacAddress": "02:42:ac:11:00:08",
"DriverOpts": null
}
}
}
}
]
[root@localhost ~]# docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
73f7bcf6665f nginx "/docker-entrypoint.…" 2 minutes ago Up 2 minutes 80/tcp asses2
e8f5b9187c77 nginx "/docker-entrypoint.…" 33 minutes ago Up 33 minutes 0.0.0.0:9097->80/tcp, :::9097->80/tcp asses1.1
1f3d2deac08c httpd "httpd-foreground" About an hour ago Up About an hour 0.0.0.0:9096->80/tcp, :::9096->80/tcp asses1
169e2d27c16d cmd2:c2 "ping facebook.com" 4 hours ago Up 4 hours prime5
ab842119f3aa cmd2:c2 "ping facebook.com" 4 hours ago Up 4 hours prime3
9194d829a7b8 cmd2:c2 "ping facebook.com" 4 hours ago Up 4 hours prime2
330c0143e0d1 cmd:c1 "ping facebook.com" 4 hours ago Up 4 hours prime
[root@localhost ~]# docker exec -it asses2 bash
root@73f7bcf6665f:/# cd /usr/share/nginx/html
root@73f7bcf6665f:/usr/share/nginx/html# ls
50x.html index.html
root@73f7bcf6665f:/usr/share/nginx/html# cat >>index.html
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! india!!!!!!!!!!!!!!!!!!!!!!!!^C
root@73f7bcf6665f:/usr/share/nginx/html#


Activities
PuTTY SSH Client
Oct 29 21:23
root@localhost:~
169e2d27c16d cmd2:c2 "ping facebook.com" 4 hours ago Up 4 hours
prime5
ab842119f3aa cmd2:c2 "ping facebook.com" 4 hours ago Up 4 hours
prime3
9194d829a7b8 cmd2:c2 "ping facebook.com" 4 hours ago Up 4 hours
prime2
330c0143e0d1 cmd:c1 "ping facebook.com" 4 hours ago Up 4 hours
prime
[root@localhost ~]# clear
[root@localhost ~]# docker volume ls
DRIVER VOLUME NAME
[root@localhost ~]# docker volume create vol10
vol10
[root@localhost ~]# docker run -d --name asses2 -v vol10:/user/share/ngin/html/nginx
"docker run" requires at least 1 argument.
See 'docker run --help'.
Usage: docker run [OPTIONS] IMAGE [COMMAND] [ARG...]
Run a command in a new container
[root@localhost ~]# docker run -d --name asses2 -v vol10:/user/share/ngin/html/ nginx
73f7bcf6665f61213d33834c3b41a62e5be9f7c20e8319b1b75c11b682898271
[root@localhost ~]# docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
73f7bcf6665f nginx "/docker-entrypoint.…" 13 seconds ago Up 12 seconds 80/tcp asses2
e8f5b9187c77 nginx "/docker-entrypoint.…" 31 minutes ago Up 31 minutes 0.0.0.0:9097->80/tcp, :::9097->80/tcp asses1.1
1f3d2deac08c httpd "httpd-foreground" About an hour ago Up About an hour 0.0.0.0:9096->80/tcp, :::9096->80/tcp asses1
169e2d27c16d cmd2:c2 "ping facebook.com" 4 hours ago Up 4 hours prime5
ab842119f3aa cmd2:c2 "ping facebook.com" 4 hours ago Up 4 hours prime3
9194d829a7b8 cmd2:c2 "ping facebook.com" 4 hours ago Up 4 hours prime2
330c0143e0d1 cmd:c1 "ping facebook.com" 4 hours ago Up 4 hours prime
[root@localhost ~]# docker inspect asses2
[
{
"Id": "73f7bcf6665f61213d33834c3b41a62e5be9f7c20e8319b1b75c11b682898271",
"Created": "2021-10-29T15:45:02.683108898Z",
"Path": "/docker-entrypoint.sh",
"Args": [
"nginx",
"-g",
"daemon off;"

3Create docker file for httpd , build image out of that , create container , make that image publically available [upload on docker hub]

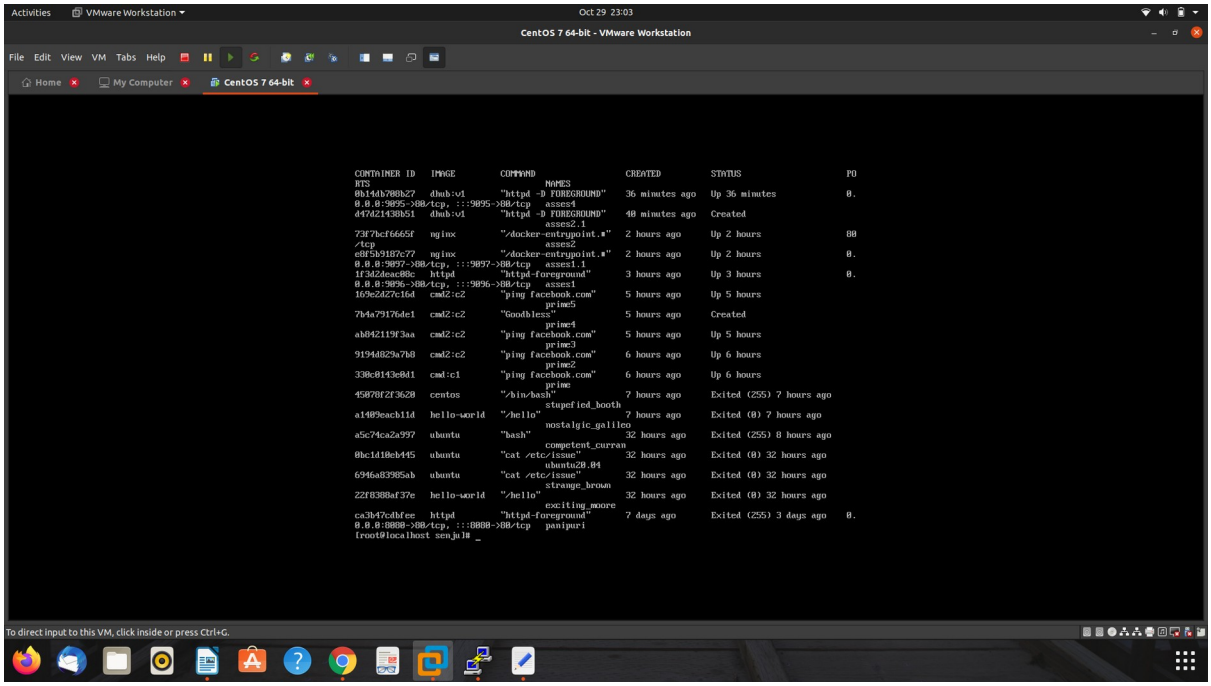
solution:

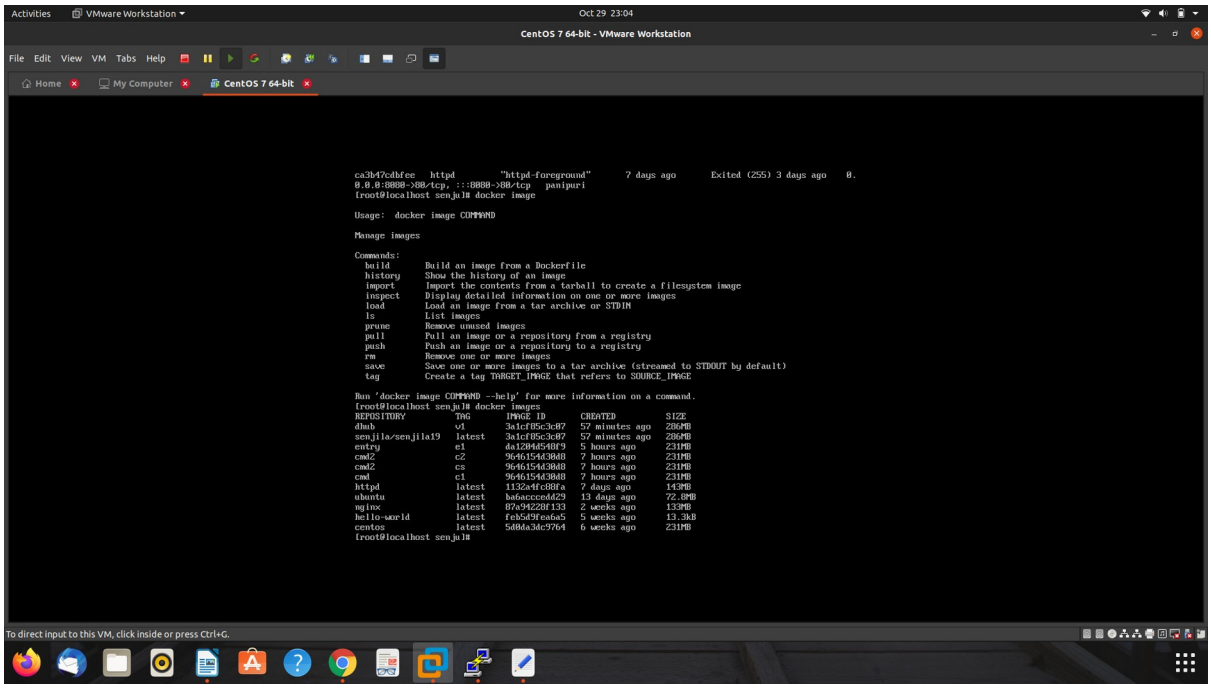


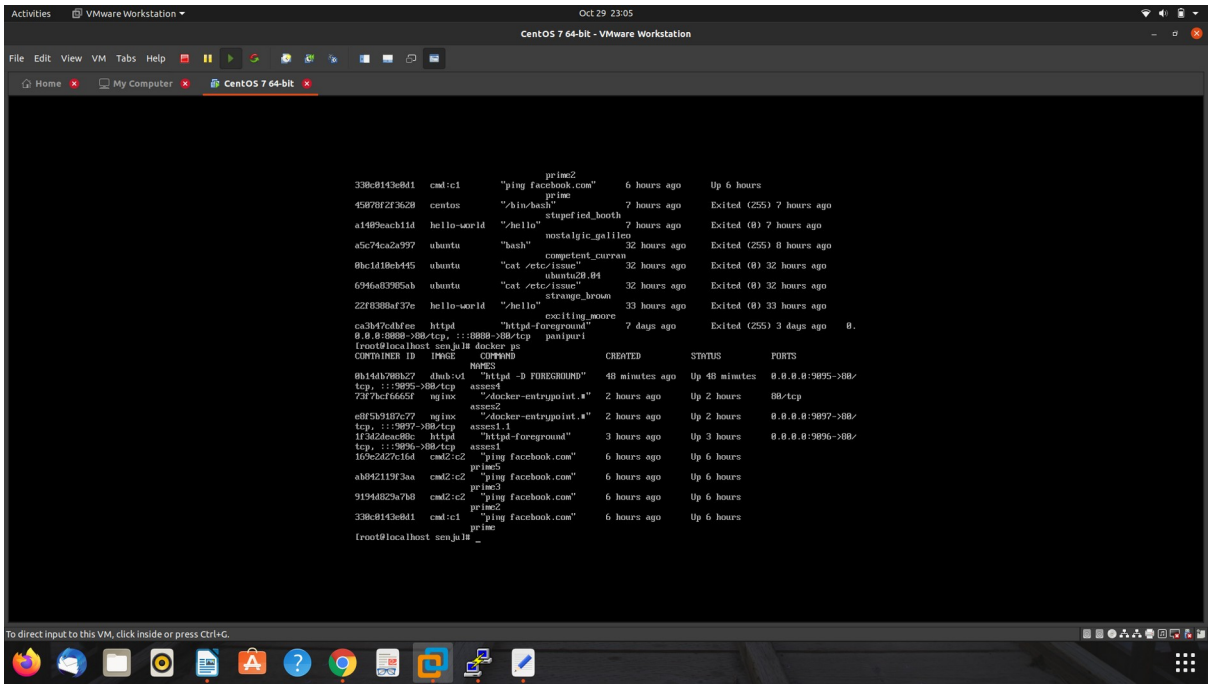


4What is difference between Entrypoint and CMD

answer:


Activities
VMware Workstation
Oct 29 23:03
CentOS 7 64-bit - VMware Workstation
File Edit View VM Tabs Help
Home
My Computer
CentOS 7 64-bit
CONTAINER ID IMAGE COMMAND NAMES CREATED STATUS PO
RTS
0b14db708b27 dhub:v1 "httpd -D FOREGROUND" 36 minutes ago Up 36 minutes 0.
0.0.0:9095->80/tcp, :::9095->80/tcp asses4
d47d21438b51 dhub:v1 "httpd -D FOREGROUND" 40 minutes ago Created
asses2.1
73f7bcf6665f nginx "/docker-entrypoint.*" 2 hours ago Up 2 hours 80
/tcp asses2
e8f5b59187c77 nginx "/docker-entrypoint.*" 2 hours ago Up 2 hours 0.
0.0.0:9097->80/tcp, :::9097->80/tcp asses1.1
1f3d2deac08c httpd "httpd-foreground" 3 hours ago Up 3 hours 0.
0.0.0:9096->80/tcp, :::9096->80/tcp asses1
169c2d27c16d cmd2:c2 "ping facebook.com" 5 hours ago Up 5 hours
prime5
7b4a79176de1 cmd2:c2 "Goodbless" 5 hours ago Created
prime4
ab842119f3aa cmd2:c2 "ping facebook.com" 5 hours ago Up 5 hours
prime3
9194d829a7b8 cmd2:c2 "ping facebook.com" 6 hours ago Up 6 hours
prime2
330c8143c8d1 cmd:c1 "ping facebook.com" 6 hours ago Up 6 hours
prime
45078f2f3628 centos "/bin/bash" 7 hours ago Exited (255) 7 hours ago
stupefied_booth
a14f9eacb11d hello-world "/hello" 7 hours ago Exited (0) 7 hours ago
nostalgic_galileo
a5c74ca2a997 ubuntu "bash" 32 hours ago Exited (255) 8 hours ago
competent_curran
0bc1d10eb445 ubuntu "cat /etc/issue" 32 hours ago Exited (0) 32 hours ago
ubuntu20.04
6946a83985ab ubuntu "cat /etc/issue" 32 hours ago Exited (0) 32 hours ago
strange_brown
22f8388af37e hello-world "/hello" 32 hours ago Exited (0) 32 hours ago
exciting_moore
ca3b47cdbfee httpd "httpd-foreground" 7 days ago Exited (255) 3 days ago 0.
0.0.0:8888->80/tcp, :::8888->80/tcp panipuri
[root@localhost senju]#
To direct input to this VM, click inside or press Ctrl+G.


Activities
VMware Workstation
Oct 29 23:04
CentOS 7 64-bit - VMware Workstation
File Edit View VM Tabs Help
Home
My Computer
CentOS 7 64-bit
ca3b47cdbfee httpd "httpd-foreground" 7 days ago Exited (255) 3 days ago 0.
0.0.0:8888->80/tcp, :::8888->80/tcp panipuri
[root@localhost senju]# docker image
Usage: docker image COMMAND
Manage images
Commands:
build Build an image from a Dockerfile
history Show the history of an image
import Import the contents from a tarball to create a filesystem image
inspect Display detailed information on one or more images
load Load an image from a tar archive or STDIN
ls List images
prune Remove unused images
pull Pull an image or a repository from a registry
push Push an image or a repository to a registry
rm Remove one or more images
save Save one or more images to a tar archive (streamed to STDOUT by default)
tag Create a tag TARGET_IMAGE that refers to SOURCE_IMAGE
Run 'docker image COMMAND --help' for more information on a command.
[root@localhost senju]# docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
dhub v1 3a1cf05c3c07 57 minutes ago 286MB
senjila/senjila19 latest 3a1cf05c3c07 57 minutes ago 286MB
entry e1 da12044540f9 5 hours ago 231MB
cmd2 c2 9646154d30d0 7 hours ago 231MB
cmd2 cs 9646154d30d0 7 hours ago 231MB
cmd c1 9646154d30d0 7 hours ago 231MB
httpd latest 1132a4fc88fa 7 days ago 143MB
ubuntu latest ba6acccedd29 13 days ago 72.8MB
nginx latest 87a94228f133 2 weeks ago 133MB
hello-world latest feb5d9fea6a5 5 weeks ago 13.3kB
centos latest 5d0da3dc9764 6 weeks ago 231MB
[root@localhost senju]#
To direct input to this VM, click inside or press Ctrl+G.


Activities
VMware Workstation
Oct 29 23:05
CentOS 7 64-bit - VMware Workstation
File Edit View VM Tabs Help
Home
My Computer
CentOS 7 64-bit
prime2
330c0143e8d1 cmd:c1 "ping facebook.com" 6 hours ago Up 6 hours
prime
45078f2f3628 centos "/bin/bash" 7 hours ago Exited (255) 7 hours ago
stupefied_booth
a14d9eacb11d hello-world "/hello" 7 hours ago Exited (0) 7 hours ago
nostalgic_galileo
a5c74ca2a997 ubuntu "bash" 32 hours ago Exited (255) 8 hours ago
competent_curran
0bc1d18eb445 ubuntu "cat /etc/issue" 32 hours ago Exited (0) 32 hours ago
ubuntu20.04
6946a83985ab ubuntu "cat /etc/issue" 32 hours ago Exited (0) 32 hours ago
strange_brown
22f8388af37e hello-world "/hello" 33 hours ago Exited (0) 33 hours ago
exciting_moore
ca3b47cdbfec httpd "httpd-foreground" 7 days ago Exited (255) 3 days ago 0.
0.0.0:8888->80/tcp, :::8888->80/tcp panipuri
[root@localhost senju1]# docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS
NAMES
0b14b7880b27 dhub:v1 "httpd -D FOREGROUND" 48 minutes ago Up 48 minutes 0.0.0.0:9895->80/
tcp, :::9895->80/tcp asses4
73f7bcf6665f nginx "/docker-entrypoint.#" 2 hours ago Up 2 hours 80/tcp
asses2
e8f5b9107c77 nginx "/docker-entrypoint.#" 2 hours ago Up 2 hours 0.0.0.0:9897->80/
tcp, :::9897->80/tcp asses1.1
1f3d2deac80c httpd "httpd-foreground" 3 hours ago Up 3 hours 0.0.0.0:9896->80/
tcp, :::9896->80/tcp asses1
169e2d27c16d cmd2:c2 "ping facebook.com" 6 hours ago Up 6 hours
prime5
ab042119f3aa cmd2:c2 "ping facebook.com" 6 hours ago Up 6 hours
prime3
9194d829a7b8 cmd2:c2 "ping facebook.com" 6 hours ago Up 6 hours
prime2
330c0143e8d1 cmd:c1 "ping facebook.com" 6 hours ago Up 6 hours
prime
[root@localhost senju1]#
To direct input to this VM, click inside or press Ctrl+G.