

Install docker on EC2 and explore the docker commands (docker images, containers)

Install docker on EC2

```
Get:36 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [520 B]
Get:37 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [799 kB]
Get:38 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [148 kB]
Get:39 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [16.8 kB]
Get:40 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [36.5 kB]
Get:41 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [7060 B]
Get:42 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [260 B]
Fetched 28.5 MB in 5s (5430 kB/s)
Reading package lists... Done
root@ip-172-31-5-6:/home/ubuntu# apt-get install docker.io
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools cgroupfs-mount | cgroup-lite debootstrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io pigz runc ubuntu-fan
0 upgraded, 8 newly installed, 0 to remove and 62 not upgraded.
Need to get 69.7 MB of archives.
After this operation, 267 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bridge-utils amd64 1.7-1ubuntu3 [34.4 kB]
```

i-0299b703de765e6bd (docker)

PublicIPs: 43.204.233.13 PrivateIPs: 172.31.5.6

docker images

```
Status: Downloaded newer image for python:latest
docker.io/library/python:latest
root@ip-172-31-5-6:/home/ubuntu# docker pull mongo
Using default tag: latest
latest: Pulling from library/mongo
43f89b94cd7d: Pull complete
54a7480baa9d: Pull complete
7f9301fbd7df: Pull complete
5e4470f2e90f: Pull complete
40d046ff8fd3: Pull complete
a062d62b8f1e: Pull complete
72919e34fde8: Pull complete
74c3fb6d33e0: Pull complete
adfd395e3ac5: Pull complete
Digest: sha256:e86b32dc3df2a30610dd3eeab15132b7d3ae00f3435a3c72ada21b12df6c5e
Status: Downloaded newer image for mongo:latest
docker.io/library/mongo:latest
root@ip-172-31-5-6:/home/ubuntu# docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
httpd                latest          a6ca7b52a415   5 days ago     168MB
nginx                latest          a6bd71f48f68   6 days ago     187MB
mongo                latest          021b676f1558   12 days ago    757MB
python               latest          caacd5b6b541   6 weeks ago    1.02GB
ubuntu               latest          e4c58958181a   7 weeks ago    77.8MB
root@ip-172-31-5-6:/home/ubuntu#
```

i-0299b703de765e6bd (docker)

PublicIPs: 43.204.233.13 PrivateIPs: 172.31.5.6

Containers

```
root@ip-172-31-5-6:/home/ubuntu# docker run --help'.
root@ip-172-31-5-6:/home/ubuntu# docker run -itd --name container1 nginx
docker: Error response from daemon: Conflict. The container name "/container1" is already in use by container "d215440045796alcaa9699bd9a497ea495dc376fc3d30229ffcd8c6aefb
f61bc". You have to remove (or rename) that container to be able to reuse that name.
See 'docker run --help'.
root@ip-172-31-5-6:/home/ubuntu# docker run -itd --name container3 nginx
8f217be30efc818e88d635f2bcbdc20ecec040e73db37bf77dd53879ea0b0b87
root@ip-172-31-5-6:/home/ubuntu# docker run -itd --name container4 nginx
76d7ca85f65b32ebe175bdfce51d05d4425a3f64726a0e407d960e95b7d28e5
root@ip-172-31-5-6:/home/ubuntu# docker run -itd --name container5 mongo
1cdd6c3df3770d3f414d66b4296232ec8c285c9facb1b231400af458d7b94336
root@ip-172-31-5-6:/home/ubuntu# docker run -itd --name container6 python
9431cb6154d571a326abbb2251d765593289010754e8d0db3d36f46623811386
root@ip-172-31-5-6:/home/ubuntu# docker run -itd --name container7 ubuntu
16143cb228ecf874498f13f1e939ed58b99e658cb61842b6a9d9fba53ee47c0
root@ip-172-31-5-6:/home/ubuntu# docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
16143cb228ec       ubuntu             "/bin/bash"        5 seconds ago      Up 4 seconds              container7
9431cb6154d5       python            "python3"          43 seconds ago     Up 42 seconds              container6
1cdd6c3df377       mongo             "docker-entrypoint.s..." About a minute ago  Up About a minute      27017/tcp           container5
76d7ca85f65b       nginx             "/docker-entrypoint..." 2 minutes ago      Up 2 minutes          80/tcp              container4
8f217be30efc       nginx             "/docker-entrypoint..." 2 minutes ago      Up 2 minutes          80/tcp              container3
cb0d337c7622       httpd             "httpd-foreground"  5 minutes ago      Up 5 minutes          80/tcp              container2
d21544004579       httpd             "httpd-foreground"  18 minutes ago     Up 18 minutes          80/tcp              container1
```

i-0299b703de765e6bd (docker)
PublicIPs: 43.204.233.13 PrivateIPs: 172.31.5.6

Docker commands

Creating images: docker pull image name

```
root@ip-172-31-5-6:/home/ubuntu# docker pull httpd
Using default tag: latest
latest: Pulling from library/httpd
1f7ce2fa46ab: Pull complete
424de2a10000: Pull complete
6d9a0131505f: Pull complete
5728ea91734b: Pull complete
20d3235e84ad: Pull complete
Digest: sha256:04551bc9cc03314aaab20d23609939aeb2ae694fc2e337d0afad429ec22c5a
Status: Downloaded newer image for httpd:latest
docker.io/library/httpd:latest
root@ip-172-31-5-6:/home/ubuntu# docker pull nginx
Using default tag: latest
latest: Pulling from library/nginx
1f7ce2fa46ab: Already exists
9b16c94bb686: Pull complete
9a59d19f9c5b: Pull complete
9ea27b074f71: Pull complete
c6edf33e2524: Pull complete
84b1ff10387b: Pull complete
517357831967: Pull complete
Digest: sha256:10d11b58e74683ad34eb29287e07dab1e90f10af243f151bb50aa5dabb4d62ee
Status: Downloaded newer image for nginx:latest
docker.io/library/nginx:latest
root@ip-172-31-5-6:/home/ubuntu#
```

i-0299b703de765e6bd (docker)
PublicIPs: 43.204.233.13 PrivateIPs: 172.31.5.6

Creating containers: docker run -itd --name containername image name

```
root@ip-172-31-5-6:/home/ubuntu# docker run -itd --name container3 nginx
8f217be30efc818e88d635f2bcbdc20ecec040e73db37bf77dd53879ea0b0b87
root@ip-172-31-5-6:/home/ubuntu# docker run -itd --name container4 nginx
76d7ca85f65b32ebe175bdfce51d05d4425a3f64726a0e407d960e95b7d28e5
root@ip-172-31-5-6:/home/ubuntu# docker run -itd --name container5 mongo
1cdd6c3df3770d3f414d66b4296232ec8c285c9facb1b231400af458d7b94336
root@ip-172-31-5-6:/home/ubuntu# docker run -itd --name container6 python
9431cb6154d571a326abbb2251d765593289010754e8d0db3d36f46623811386
root@ip-172-31-5-6:/home/ubuntu# docker run -itd --name container7 ubuntu
16143cb228ecf874498f13f1e939edb58b99e658cb61842b6a9d9fba53ee47c0
```

Changing the port: docker run -itd - -name portchange -p"1999:80" imagename (any name) (any number:)

The screenshot shows a terminal window within the AWS Management Console. The terminal is connected to an EC2 instance named 'i-0299b703de765e6bd' with user 'ubuntu' and region 'ap-south-1'. The terminal output shows the following commands and results:

```
root@ip-172-31-5-6:/home/ubuntu# docker run -itd --name portchange -p
flag needs an argument: 'p' in -p
See 'docker run --help'.
root@ip-172-31-5-6:/home/ubuntu# docker run -itd --name portchange -p"1999:80" httpd
6006b4a334c8475b08db483fc1129e2464dfe135a13e66209db2d0c9d09e15c
root@ip-172-31-5-6:/home/ubuntu# docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
6006b4a334c8	httpd	"httpd-foreground"	41 seconds ago	Up 39 seconds	0.0.0.0:1999->80/tcp, :::1999->80/tcp	portchange
16143cb228ec	ubuntu	"/bin/bash"	18 hours ago	Up 18 hours		container7
9431cb6154d5	python	"python3"	18 hours ago	Up 18 hours		container6
1cdd6c3df377	mongo	"docker-entrypoint.s..."	18 hours ago	Up 18 hours	27017/tcp	container5
76d7ca85f65b	nginx	"docker-entrypoint..."	18 hours ago	Up 18 hours	80/tcp	container4
cb0d337c7622	httpd	"httpd-foreground"	18 hours ago	Up 18 hours	80/tcp	container2

Below the terminal output, a summary box for the instance 'i-0299b703de765e6bd (docker)' is visible, showing Public IPs: 43.204.233.13 and Private IPs: 172.31.5.6.