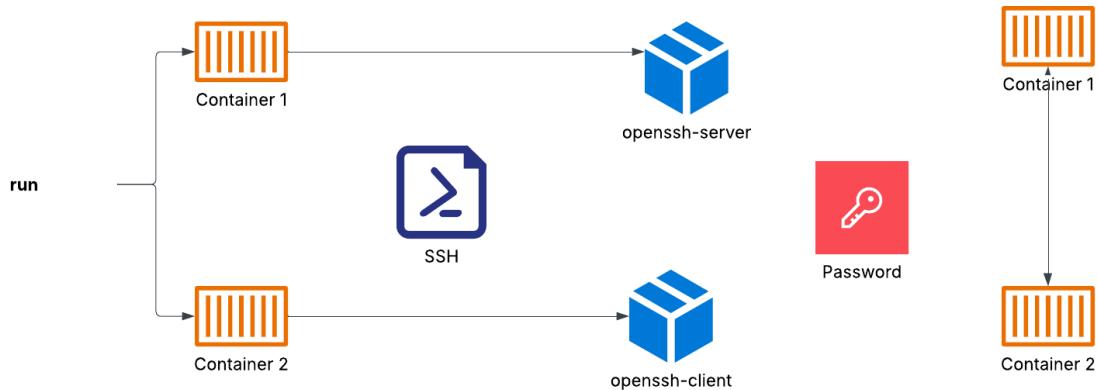
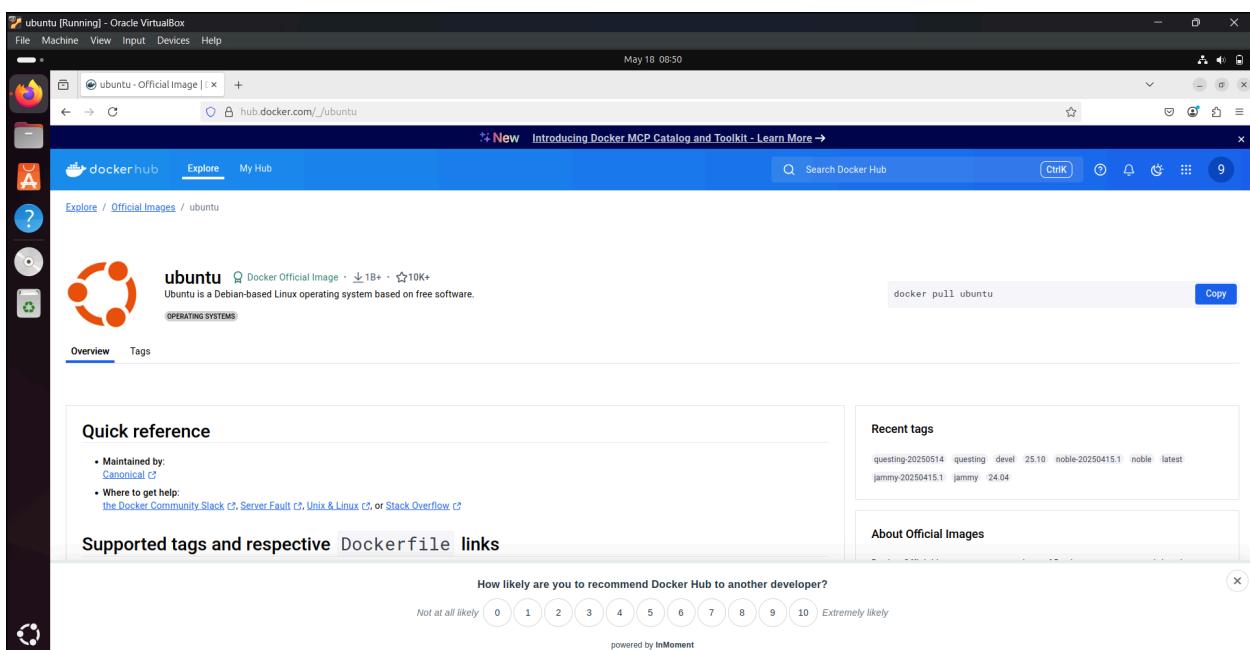


Secure SSH connection between two Ubuntu containers

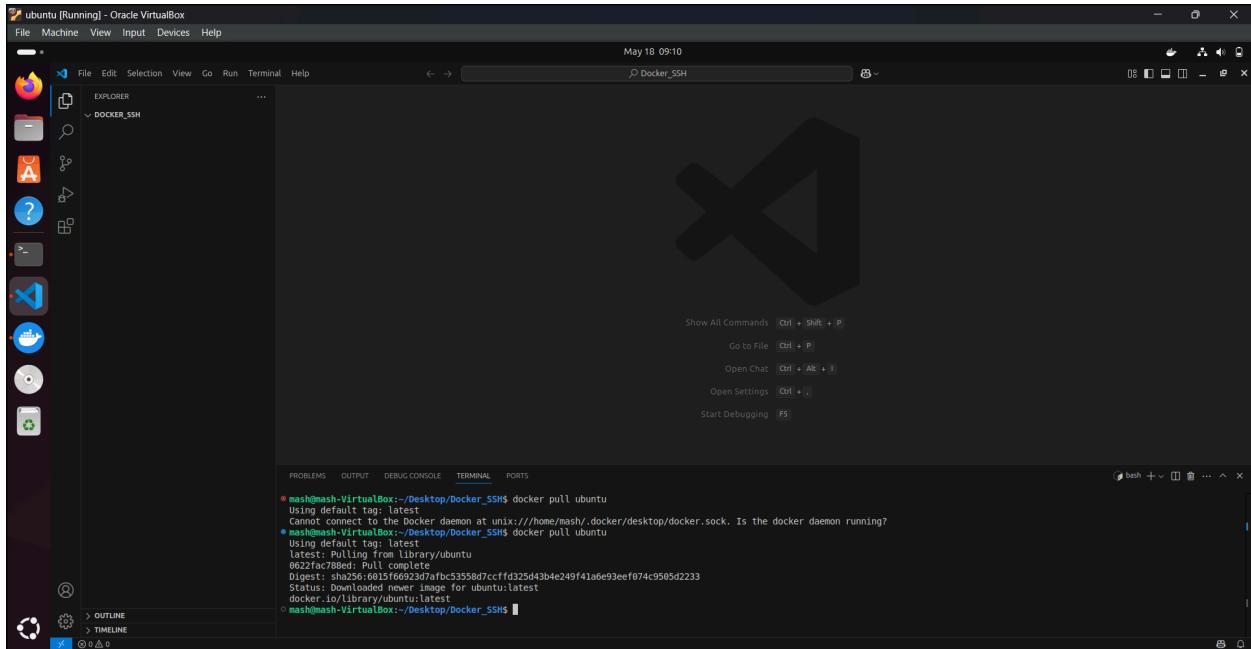


Get ubuntu image from Docker Hub.



pull docker image

docker pull ubuntu



```
ubuntu [Running] - Oracle VirtualBox
File Machine View Input Devices Help
File Edit Selection View Go Run Terminal Help
May 18 09:10 Docker_SSH
File Explorer View Command Palette
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
* mash@mash-VirtualBox:~/Desktop/Docker_SSH$ docker pull ubuntu
Using default tag: latest
Cannot connect to the Docker daemon at unix:///home/mash/.docker/desktop/docker.sock. Is the docker daemon running?
* mash@mash-VirtualBox:~/Desktop/Docker_SSH$ docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
0622fae788ed: Pull complete
Digest: sha256:6015f66923d7afbc5358d7ccff6f25d43b4e249f41a6e93ee074c9505d2233
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
mash@mash-VirtualBox:~/Desktop/Docker_SSH$
```

Verify image

docker images

```

ubuntu [Running] - Oracle VirtualBox
File Machine View Input Devices Help
File Edit Selection View Go Run Terminal Help
May 18 09:12
Docker_SSH
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
mask@mash-VirtualBox:~/Desktop/Docker_SSH$ docker pull ubuntu
Using default tag: latest
Cannot connect to the Docker daemon at unix:///home/mash/.docker/desktop/docker.sock. Is the docker daemon running?
mask@mash-VirtualBox:~/Desktop/Docker_SSH$ docker pull ubuntu
latest: Pulling from library/ubuntu
Digest: sha256:6615f66923d7afbc53558d7ccffd325d43b4e249f41a6e93ee074c9505d2233
Status: Downloaded newer image for ubuntu:latest
mask@mash-VirtualBox:~/Desktop/Docker_SSH$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
ubuntu latest a0e45e2ce66b 2 weeks ago 78.1MB
hello-world latest 74cc54e27dc4 3 months ago 10.1kB
mask@mash-VirtualBox:~/Desktop/Docker_SSH$ 

```

Name	Tag	Image ID	Created	Size	Actions
hello-world	latest	74cc54e27dc4	4 months ago	10.07 KB	View Edit Delete
ubuntu	latest	a0e45e2ce66b	20 days ago	78.1 MB	View Edit Delete

Showing 2 items

Walkthroughs

- How do I run a container?
- Run Docker Hub images

create first container and get interactive mode

docker run -it --name <container name> <image name>

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
mash@mash-VirtualBox:~/Desktop/Docker_SSH$ docker run -it --name ubuntu_container ubuntu
root@92e117c5b06:/# apt-get update
Get:1 http://archive.ubuntu.com/ubuntu noble InRelease [256 kB]
Get:2 http://security.ubuntu.com/ubuntu noble-security InRelease [326 kB]
Get:3 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1055 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:5 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [1371 kB]
Get:6 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [1082 kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [22.1 kB]
Get:8 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [331 kB]
Get:10 http://archive.ubuntu.com/ubuntu noble/restricted amd64 Packages [117 kB]
Get:11 http://archive.ubuntu.com/ubuntu noble/universe amd64 Packages [19.3 MB]
Get:12 http://archive.ubuntu.com/ubuntu noble/main amd64 Packages [1888 kB]
Get:13 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [1431 kB]
Get:14 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1382 kB]
Get:15 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1380 kB]
Get:16 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [26.7 kB]
Get:17 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 Packages [48.0 kB]
Get:18 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [31.8 kB]
Fetched 30.0 MB in 35s (855 kB/s)
Reading package lists... Done
root@92e117c5b06:/# 

```

install OpenSSH - Server inside the container

apt-get update && apt-get install openssh-server

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
root@045cd68f5c636:/# apt-get install openssh-server
Processing triggers for libc-bin (2.39-0ubuntu0.4) ...
Processing triggers for ca-certificates (20240203) ...
Updating certificates in /etc/ssl/certs...
0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d...
done.
root@045cd68f5c636:/# apt-get install openssh-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  dbus-user-session krb5-locales libbsd0 liblberdo2-1 libgssapi-krb5-2 libk5crypto3 libkeyutils1 libkrb5-3 libkrb5support0 libnss-systemd libpam-systemd libpsl5t64 libwrap0 libx11-6 libx11-data
  libxaude libxcb1 libxdmcp libxext6 libxmuu1 lsb-release ncurses-term openssh-client openssh-sftp-server publicsuffix python3-cffi-backend python3-cryptography python3-distro python3-httplib2
  python3-jwt python3-launchpadlib python3-lazr.url python3-oauthlib python3-pkg-resources python3-parsing python3-six python3-wadllib ssh-import-id systemd-sysv ucf wget xauth
Suggested packages:
  krfb libkrb5-user krfb-ssh libasn1-8 libkrb5-8 libkrb5-8-openssl libkrb5-8-heimdal libkrb5-8-heimdal-openssl libkrb5-8-heimdal-heimdal libkrb5-8-heimdal-heimdal-openssl
  python3-setuptools python-pyasn1-doc
The following NEW packages will be installed:
  dbus-user-session krb5-locales libbsd0 liblberdo2-1 libgssapi-krb5-2 libk5crypto3 libkeyutils1 libkrb5-3 libkrb5support0 libnss-systemd libpam-systemd libpsl5t64 libwrap0 libx11-6 libx11-data
  libxaude libxcb1 libxdmcp libxext6 libxmuu1 lsb-release ncurses-term openssh-client openssh-sftp-server publicsuffix python3-cffi-backend python3-cryptography python3-distro
  python3-httplib2 python3-jwt python3-launchpadlib python3-lazr.url python3-oauthlib python3-pkg-resources python3-parsing python3-six python3-wadllib ssh-import-id systemd-sysv ucf wget
  xauth
root@045cd68f5c636:/# 

```

configure ssh in the fist container and want to edit SSH configuration file. for that install nano

**apt-get install nano
nano /etc/ssh/sshd_config**

```

root@045cd68f5c636:/# apt-get install nano
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  nano
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 0 B/304 kB of archives.
After this operation, 1,024 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 nano 4.8-0ubuntu4.7.2-2ubuntu1 [304 kB]
Suggested packages:
  xterm
The following NEW packages will be installed:
  nano
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 0 B/304 kB of archives.
After this operation, 1,024 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 nano 4.8-0ubuntu4.7.2-2ubuntu1 [304 kB]
root@045cd68f5c636:/# nano /etc/ssh/sshd_config
root@045cd68f5c636:/# 

```

open the SSH configuration file

/etc/ssh/sshd_config the location of ssh config file.

uncomment the `PermisionRootLogin` line and remove “`ProhibitPaassword`” and enter “yes”.

Next want to restart SSH service inside the container.

check services status

enable ssh service

```
service --status-all  
service ssh start
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

root@45cd68f5c636:/# nano /etc/ssh/sshd_config
root@45cd68f5c636:/# nano /etc/ssh/sshd_config
root@45cd68f5c636:/# service -status-all
>Status-all: unrecognized service
root@45cd68f5c636:/# service --status-all
[ - ] dbus
[ - ] procps
[ - ] ssh
root@45cd68f5c636:/# service ssh start
 * Starting OpenBSD Secure Shell server sshd
root@45cd68f5c636:/# █
```

verify ssh service enable or not and exit from container interactive mode.

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
root@45cd08bf5c636:/# nano /etc/ssh/sshd_config
root@45cd08bf5c636:/# nano /etc/ssh/sshd_config
root@45cd08bf5c636:/# service -status-all
status-all: unrecognized service
root@45cd08bf5c636:/# service --status-all
[ - ] dbus
[ - ] procps
[ - ] ssh
root@45cd08bf5c636:/# service ssh start
 * Starting OpenBSD Secure Shell server sshd
root@45cd08bf5c636:/# service --status-all
[ - ] dbus
[ - ] procps
[ + ] ssh
root@45cd08bf5c636:/# exit
xit
ash@mash-VirtualBox:~/Desktop/Docker_SSH$
```

create second container.

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
mashmash-VirtualBox:~/Desktop/Docker_SSH$ docker run -it --name ubuntu_container2 ubuntu
root@99fdb6d1f9d:~#
```

install OpenSSH client to the second container.

```
apt-get install openssh-client
```

exit from the second container and start first container that is server container.

```
exit  
docker start < container name>  
docker exec -it < container name > bash
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
root@0f68077b5ada:/# exit
exit
● mash@mash-VirtualBox:~/Desktop/Docker_SSH$ docker start ubuntu_container
ubuntu_container
● mash@mash-VirtualBox:~/Desktop/Docker_SSH$ docker exec -it ubuntu_container bash
root@45cd68f5c636:/#
```

check the password for the root user on the fist container.

password stored location is /etc/shadow.

```
cat /etc/shadow | grep root
```

```
mash@mash-VirtualBox:~/Desktop/Docker_SSH$ docker exec -it ubuntu_container bash
root@45cd68f5c636:/# cat /etc/shadow | grep root
root:+*:20193:0:99999:7:::
root@45cd68f5c636:/# password root
bash: password: command not found
root@45cd68f5c636:/# passwd root
New password:
Retype new password:
passwd: password updated successfully
root@45cd68f5c636:/#
```

check the ip address of of server container.

```
docker inspect < container name > | grep IPAddress
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
● mash@mash-VirtualBox:~/Desktop/Docker_SSH$ docker inspect ubuntu_container | grep IPAddress
"SecondaryIPAddresses": null,
"IPAddress": "172.17.0.2",
"IPAddress": "172.17.0.2",
● mash@mash-VirtualBox:~/Desktop/Docker_SSH$
```

Next start server container and check ssh service and exit form server container.

finally log to the client container and throught the ssh command log to the server container.

```
ssh root#<Ip Address>
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS

'mash@mash-VirtualBox:~/Desktop/Docker_SSH$ docker start ubuntu_container
ubuntu_container
'mash@mash-VirtualBox:~/Desktop/Docker_SSH$ docker exec -it ubuntu_container bash
root@45cd68f5c636:/# service --status-all
[ - ] dbus
[ - ] procps
[ - ] ssh
root@45cd68f5c636:/# service ssh start
 * Starting OpenBSD Secure Shell server sshd
root@45cd68f5c636:/#
root@45cd68f5c636:/# exit
exit
'mash@mash-VirtualBox:~/Desktop/Docker_SSH$ docker start ubuntu_container2
ubuntu_container2
'mash@mash-VirtualBox:~/Desktop/Docker_SSH$ docker exec -it ubuntu_container2 bash
root@3f68077bada:/# ssh root@172.17.0.2
The authenticity of host '172.17.0.2 (172.17.0.2)' can't be established.
ED25519 key fingerprint is SHA256:nN2vlUET+y99k27uWJ0Q439yAvzaQxwIRaQgrpvh4M.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? y
Please type 'yes', 'no' or the fingerprint: yes
Warning: Permanently added '172.17.0.2' (ED25519) to the list of known hosts.
root@172.17.0.2's password:
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.10.14-linuxkit x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

This system has been minimized by removing packages and content that are
not required on a system that users do not log into.

To restore this content, you can run the 'unminimize' command.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.
```