DOCKER BASIC COMMAND

1. cek perintah2 docker

```
padli@mrX: ~                                                        En  ((   09:38
padli@mrX:~$ sudo docker
[sudo] password for padli:

Usage:  docker COMMAND

A self-sufficient runtime for containers

Options:
      --config string      Location of client config files (default "/home/padli/.docker")
  -D, --debug              Enable debug mode
  -H, --host list          Daemon socket(s) to connect to
  -l, --log-level string   Set the logging level ("debug"|"info"|"warn"|"error"|"fatal") (default "info")
      --tls                Use TLS; implied by --tlsverify
      --tlscacert string   Trust certs signed only by this CA (default "/home/padli/.docker/ca.pem")
      --tlscert string     Path to TLS certificate file (default "/home/padli/.docker/cert.pem")
      --tlskey string      Path to TLS key file (default "/home/padli/.docker/key.pem")
      --tlsverify          Use TLS and verify the remote
  -v, --version            Print version information and quit

Management Commands:
  config     Manage Docker configs
  container  Manage containers
  image      Manage images
  network    Manage networks
  node       Manage Swarm nodes
  plugin     Manage plugins
  secret     Manage Docker secrets
  service    Manage services
  swarm      Manage Swarm
  system     Manage Docker
  trust      Manage trust on Docker images
  volume     Manage volumes

Commands:
  attach     Attach local standard input, output, and error streams to a running container
  build      Build an image from a Dockerfile
  commit     Create a new image from a container's changes
  cp         Copy files/folders between a container and the local filesystem
  create     Create a new container
  diff       Inspect changes to files or directories on a container's filesystem
  events     Get real time events from the server
  exec       Run a command in a running container
  export     Export a container's filesystem as a tar archive
```

```
padli@mrX: ~                                                        En  ((   09:39
padli@mrX:~$ sudo docker container --help

Usage:  docker container COMMAND

Manage containers

Options:

Commands:
  attach     Attach local standard input, output, and error streams to a running container
  commit     Create a new image from a container's changes
  cp         Copy files/folders between a container and the local filesystem
  create     Create a new container
  diff       Inspect changes to files or directories on a container's filesystem
  exec       Run a command in a running container
  export     Export a container's filesystem as a tar archive
  inspect    Display detailed information on one or more containers
  kill       Kill one or more running containers
  logs       Fetch the logs of a container
  ls         List containers
  pause      Pause all processes within one or more containers
  port       List port mappings or a specific mapping for the container
  prune      Remove all stopped containers
  rename     Rename a container
  restart    Restart one or more containers
  rm         Remove one or more containers
  run        Run a command in a new container
  start      Start one or more stopped containers
  stats      Display a live stream of container(s) resource usage statistics
  stop       Stop one or more running containers
  top        Display the running processes of a container
  unpause    Unpause all processes within one or more containers
  update     Update configuration of one or more containers
  wait       Block until one or more containers stop, then print their exit codes

Run 'docker container COMMAND --help' for more information on a command.
padli@mrX:~$
```

2. cek docker info

```
padli@mrX:~$ sudo docker info
Containers: 1
 Running: 0
 Paused: 0
 Stopped: 1
Images: 2
Server Version: 18.03.0-ce
Storage Driver: overlay2
 Backing Filesystem: extfs
 Supports d_type: true
 Native Overlay Diff: true
Logging Driver: json-file
Cgroup Driver: cgroupfs
Plugins:
 Volume: local
 Network: bridge host macvlan null overlay
 Log: awslogs fluentd gcplogs gelf journald json-file logentries splunk syslog
Swarm: inactive
Runtimes: runc
Default Runtime: runc
Init Binary: docker-init
containerd version: cfd04396dc68220d1cecbe686a6cc3aa5ce3667c
runc version: 4fc53a81fb7c994640722ac585fa9ca548971871
init version: 949e6fa
Security Options:
 apparmor
 seccomp
  Profile: default
Kernel Version: 4.4.0-121-generic
Operating System: Ubuntu 16.04.4 LTS
OSType: linux
Architecture: x86_64
CPUs: 8
Total Memory: 15.63GiB
Name: mrX
ID: YMTD:R2P6:FS3C:YL5P:DWQA:RWIO:I45E:6Q2D:BG2E:HQKG:ICIR:DRVU
Docker Root Dir: /var/lib/docker
Debug Mode (client): false
Debug Mode (server): false
Username: julian23
Registry: https://index.docker.io/v1/
Labels:
Experimental: false
```
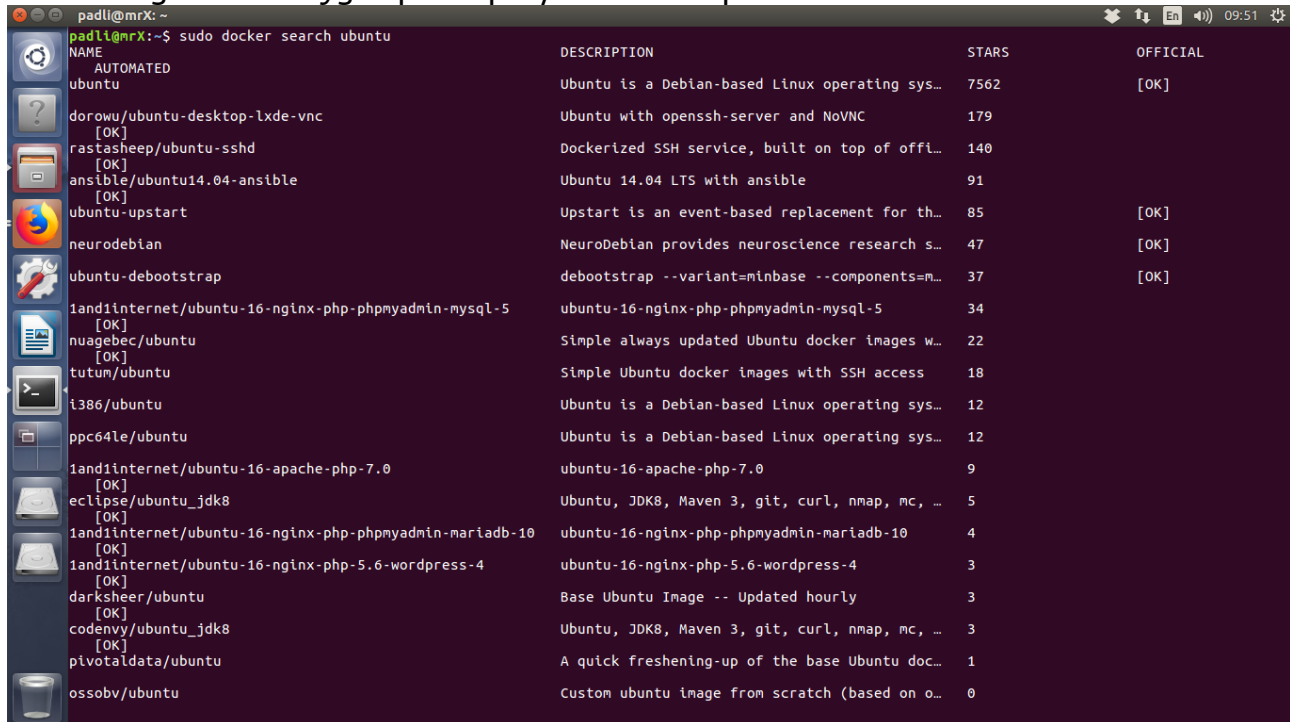
3. cek list docker images

```
padli@mrX:~$ sudo docker images
REPOSITORY          TAG          IMAGE ID          CREATED          SIZE
ubuntu              latest       c9d990395902      2 weeks ago      113MB
hello-world         latest       e38bc07ac18e      2 weeks ago      1.85kB
padli@mrX:~$
```
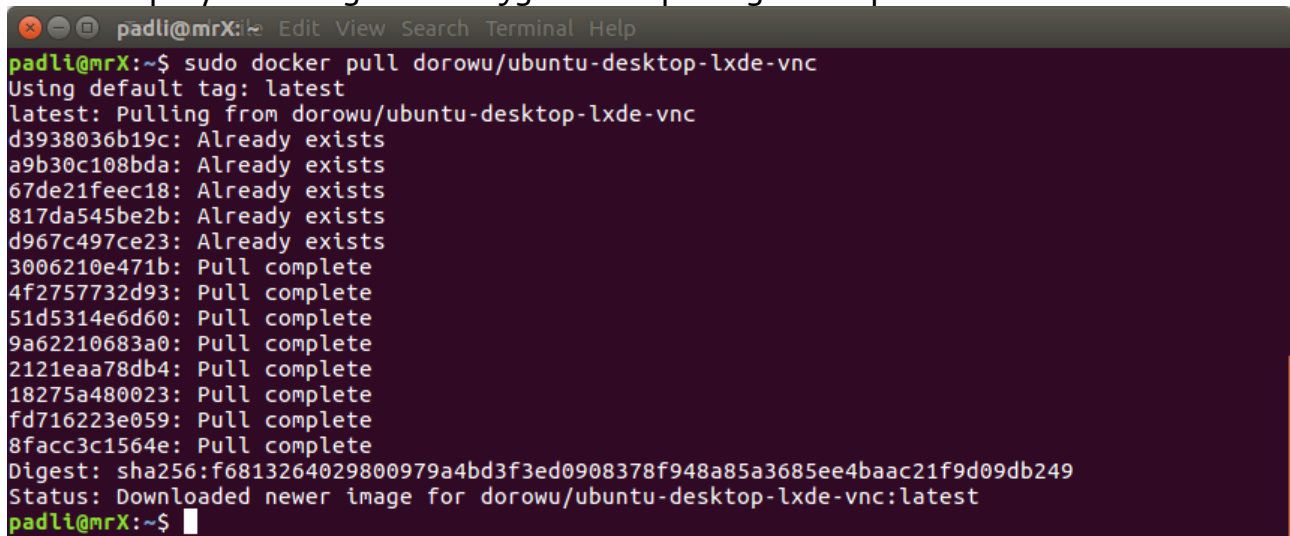
4. cek images ubuntu yg dapat di pull/tarik dari repo docker

```
padli@mrX:~$ sudo docker search ubuntu
NAME                                              DESCRIPTION                                     STARS    OFFICIAL
      AUTOMATED
ubuntu                                            Ubuntu is a Debian-based Linux operating sys…   7562     [OK]
dorowu/ubuntu-desktop-lxde-vnc                    Ubuntu with openssh-server and NoVNC            179
      [OK]
rastasheep/ubuntu-sshd                            Dockerized SSH service, built on top of offi…   140
      [OK]
ansible/ubuntu14.04-ansible                       Ubuntu 14.04 LTS with ansible                   91
      [OK]
ubuntu-upstart                                    Upstart is an event-based replacement for th…   85       [OK]
neurodebian                                       NeuroDebian provides neuroscience research s…   47       [OK]
ubuntu-debootstrap                                debootstrap --variant=minbase --components=m…   37       [OK]
1and1internet/ubuntu-16-nginx-php-phpmyadmin-mysql-5  ubuntu-16-nginx-php-phpmyadmin-mysql-5      34
      [OK]
nuagebec/ubuntu                                   Simple always updated Ubuntu docker images w…   22
      [OK]
tutum/ubuntu                                      Simple Ubuntu docker images with SSH access     18
i386/ubuntu                                       Ubuntu is a Debian-based Linux operating sys…   12
ppc64le/ubuntu                                    Ubuntu is a Debian-based Linux operating sys…   12
1and1internet/ubuntu-16-apache-php-7.0            ubuntu-16-apache-php-7.0                        9
      [OK]
eclipse/ubuntu_jdk8                               Ubuntu, JDK8, Maven 3, git, curl, nmap, mc, …   5
      [OK]
1and1internet/ubuntu-16-nginx-php-phpmyadmin-mariadb-10  ubuntu-16-nginx-php-phpmyadmin-mariadb-10  4
      [OK]
1and1internet/ubuntu-16-nginx-php-5.6-wordpress-4  ubuntu-16-nginx-php-5.6-wordpress-4            3
      [OK]
darksheer/ubuntu                                  Base Ubuntu Image -- Updated hourly             3
      [OK]
codenvy/ubuntu_jdk8                               Ubuntu, JDK8, Maven 3, git, curl, nmap, mc, …   3
      [OK]
pivotaldata/ubuntu                                A quick freshening-up of the base Ubuntu doc…   1
ossobv/ubuntu                                     Custom ubuntu image from scratch (based on o…   0
```
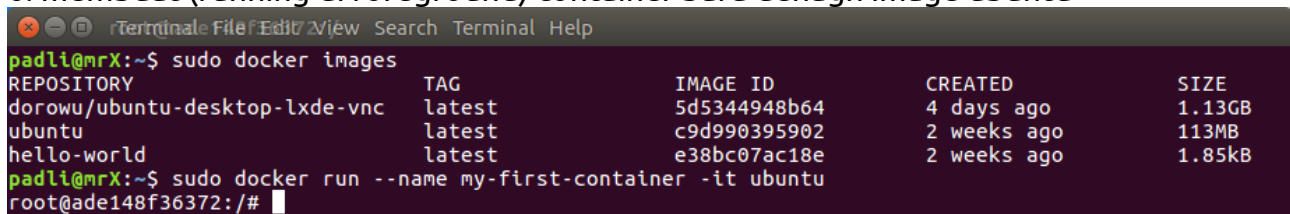
5. contoh pull/tarik image ubuntu yg sudah dipasang desktop lxde vnc

```
padli@mrX:~$ sudo docker pull dorowu/ubuntu-desktop-lxde-vnc
Using default tag: latest
latest: Pulling from dorowu/ubuntu-desktop-lxde-vnc
d3938036b19c: Already exists
a9b30c108bda: Already exists
67de21feec18: Already exists
817da545be2b: Already exists
d967c497ce23: Already exists
3006210e471b: Pull complete
4f2757732d93: Pull complete
51d5314e6d60: Pull complete
9a62210683a0: Pull complete
2121eaa78db4: Pull complete
18275a480023: Pull complete
fd716223e059: Pull complete
8facc3c1564e: Pull complete
Digest: sha256:f6813264029800979a4bd3f3ed0908378f948a85a3685ee4baac21f9d09db249
Status: Downloaded newer image for dorowu/ubuntu-desktop-lxde-vnc:latest
padli@mrX:~$
```

6. membuat (running di foreground) container baru denagn image ubuntu
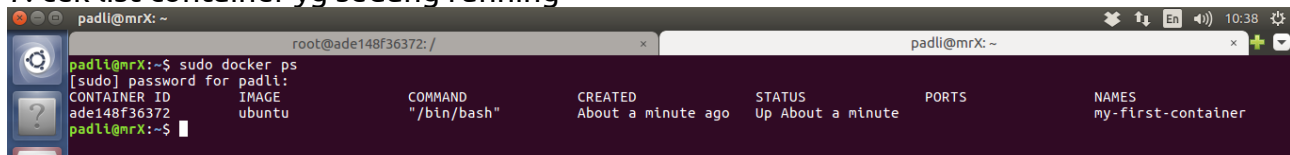
```
padli@mrX:~$ sudo docker images
REPOSITORY                        TAG       IMAGE ID       CREATED        SIZE
dorowu/ubuntu-desktop-lxde-vnc    latest    5d5344948b64   4 days ago     1.13GB
ubuntu                            latest    c9d990395902   2 weeks ago    113MB
hello-world                       latest    e38bc07ac18e   2 weeks ago    1.85kB
padli@mrX:~$ sudo docker run --name my-first-container -it ubuntu
root@ade148f36372:/#
```

7. cek list container yg sedang running

```
padli@mrX:~$ sudo docker ps
[sudo] password for padli:
CONTAINER ID   IMAGE     COMMAND       CREATED             STATUS              PORTS     NAMES
ade148f36372   ubuntu    "/bin/bash"   About a minute ago  Up About a minute             my-first-container
padli@mrX:~$
```

8. tes update container

```
root@ade148f36372:/# apt-get update
Hit:1 http://archive.ubuntu.com/ubuntu xenial InRelease
Hit:2 http://security.ubuntu.com/ubuntu xenial-security InRelease
Get:3 http://archive.ubuntu.com/ubuntu xenial-updates InRelease [109 kB]
Hit:4 http://archive.ubuntu.com/ubuntu xenial-backports InRelease
Get:5 http://archive.ubuntu.com/ubuntu xenial-updates/universe Sources [254 kB]
Get:6 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 Packages [991 kB]
Get:7 http://archive.ubuntu.com/ubuntu xenial-updates/restricted amd64 Packages [13.1 kB]

Ign:8 http://archive.ubuntu.com/ubuntu xenial-updates/universe amd64 Packages
Get:9 http://archive.ubuntu.com/ubuntu xenial-updates/multiverse amd64 Packages [18.5 kB]
70% [Waiting for headers]
```

9. tes install aplikasi di container

```
root@ade148f36372:/# apt-get install net-tools
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 1 not upgraded.
Need to get 175 kB of archives.
After this operation, 725 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu xenial/main amd64 net-tools amd64 1.60-26ubuntu1 [175 kB]
Fetched 175 kB in 0s (4856 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package net-tools.
(Reading database ... 4768 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60-26ubuntu1_amd64.deb ...
Unpacking net-tools (1.60-26ubuntu1) ...
Setting up net-tools (1.60-26ubuntu1) ...
root@ade148f36372:/#
```

10. tes cek config network di container

```
root@ade148f36372:/# ifconfig
eth0      Link encap:Ethernet  HWaddr 02:42:ac:11:00:02
          inet addr:172.17.0.2  Bcast:172.17.255.255  Mask:255.255.0.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:6640 errors:0 dropped:0 overruns:0 frame:0
          TX packets:4454 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:27119275 (27.1 MB)  TX bytes:307327 (307.3 KB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

root@ade148f36372:/#
```

11. tes cek config network di host

```
padli@mrX:~$ ifconfig
docker0   Link encap:Ethernet  HWaddr 02:42:1a:41:9a:e3
          inet addr:172.17.0.1  Bcast:172.17.255.255  Mask:255.255.0.0
          inet6 addr: fe80::42:1aff:fe41:9ae3/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:4455 errors:0 dropped:0 overruns:0 frame:0
          TX packets:6658 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:245023 (245.0 KB)  TX bytes:27121888 (27.1 MB)

enp2s0    Link encap:Ethernet  HWaddr d8:cb:8a:cb:53:ef
          inet addr:192.168.1.250  Bcast:192.168.1.255  Mask:255.255.255.0
          inet6 addr: fe80::dacb:8aff:fecb:53ef/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:1370172 errors:0 dropped:1979 overruns:0 frame:0
          TX packets:565994 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1487703737 (1.4 GB)  TX bytes:78916727 (78.9 MB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:55226 errors:0 dropped:0 overruns:0 frame:0
          TX packets:55226 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1
          RX bytes:14872659 (14.8 MB)  TX bytes:14872659 (14.8 MB)

veth64f4262 Link encap:Ethernet  HWaddr 5e:db:6f:7b:79:da
          inet6 addr: fe80::5cdb:6fff:fe7b:79da/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:4455 errors:0 dropped:0 overruns:0 frame:0
          TX packets:6643 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:307393 (307.3 KB)  TX bytes:27119800 (27.1 MB)

padli@mrX:~$
```

12. install web server apache2 di container

```
root@ade148f36372:/# apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils file ifupdown iproute2 isc-dhcp-client isc-dhcp-common libapr1 libaprutil1 libaprutil1-dbd-sqlite3
  libaprutil1-ldap libasn1-8-heimdal libatm1 libdns-export162 libexpat1 libffi6 libgdbm3 libgmp10 libgnutls30 libgssapi3-heimdal
  libhcrypto4-heimdal libheimbase1-heimdal libheimntlm0-heimdal libhogweed4 libhx509-5-heimdal libicu55 libidn11 libisc-export160
  libkrb5-26-heimdal libldap-2.4-2 liblua5.1-0 libmagic1 libmnl0 libnettle6 libp11-kit0 libperl5.22 libroken18-heimdal libsasl2-2
  libsasl2-modules libsasl2-modules-db libsqlite3-0 libssl1.0.0 libtasn1-6 libwind0-heimdal libxml2 libxtables11 mime-support netbase openssl
  perl perl-base perl-modules-5.22 rename sgml-base ssl-cert xml-core
Suggested packages:
  www-browser apache2-doc apache2-suexec-pristine | apache2-suexec-custom ufw ppp rdnssd iproute2-doc resolvconf avahi-autoipd
  isc-dhcp-client-ddns apparmor gnutls-bin libsasl2-modules-otp libsasl2-modules-ldap libsasl2-modules-sql libsasl2-modules-gssapi-mit
  | libsasl2-modules-gssapi-heimdal ca-certificates perl-doc libterm-readline-gnu-perl | libterm-readline-perl-perl make sgml-base-doc
  openssl-blacklist debhelper
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils file ifupdown iproute2 isc-dhcp-client isc-dhcp-common libapr1 libaprutil1
  libaprutil1-dbd-sqlite3 libaprutil1-ldap libasn1-8-heimdal libatm1 libdns-export162 libexpat1 libffi6 libgdbm3 libgmp10 libgnutls30
  libgssapi3-heimdal libhcrypto4-heimdal libheimbase1-heimdal libheimntlm0-heimdal libhogweed4 libhx509-5-heimdal libicu55 libidn11
  libisc-export160 libkrb5-26-heimdal libldap-2.4-2 liblua5.1-0 libmagic1 libmnl0 libnettle6 libp11-kit0 libperl5.22 libroken18-heimdal
  libsasl2-2 libsasl2-modules libsasl2-modules-db libsqlite3-0 libssl1.0.0 libtasn1-6 libwind0-heimdal libxml2 libxtables11 mime-support
  netbase openssl perl perl-modules-5.22 rename sgml-base ssl-cert xml-core
The following packages will be upgraded:
  perl-base
1 upgraded, 57 newly installed, 0 to remove and 0 not upgraded.
Need to get 24.0 MB of archives.
After this operation, 102 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
```
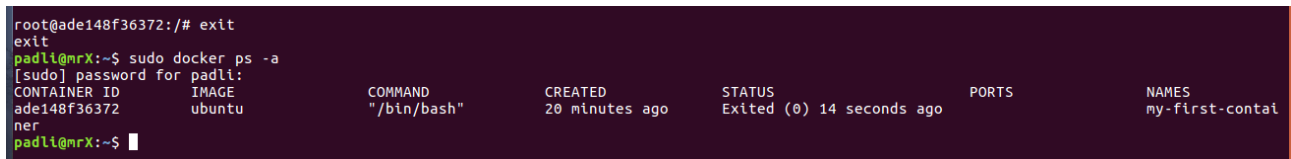
13. start service apache2

```
root@ade148f36372:/# /etc/init.d/apache
apache-htcacheclean  apache2
root@ade148f36372:/# /etc/init.d/apache2 start
 * Starting Apache httpd web server apache2
                AH00558: apache2: Could not reliably determine the server's fully qualified domain name,
using 172.17.0.2. Set the 'ServerName' directive globally to suppress this message
 *
root@ade148f36372:/# /etc/init.d/apache2 status
 * apache2 is running
root@ade148f36372:/#
```
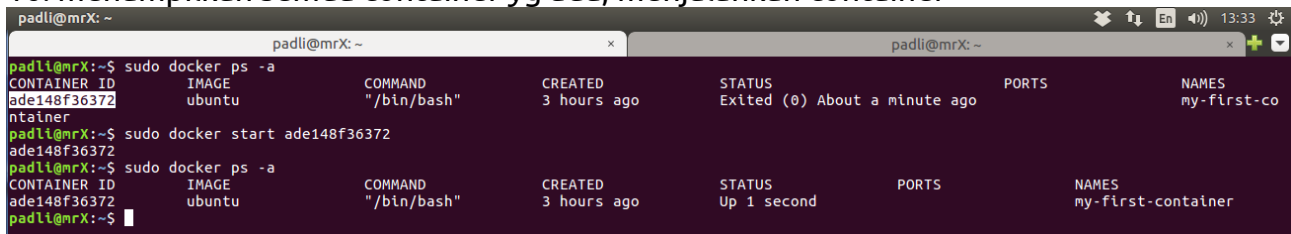
14. cek lewat browser
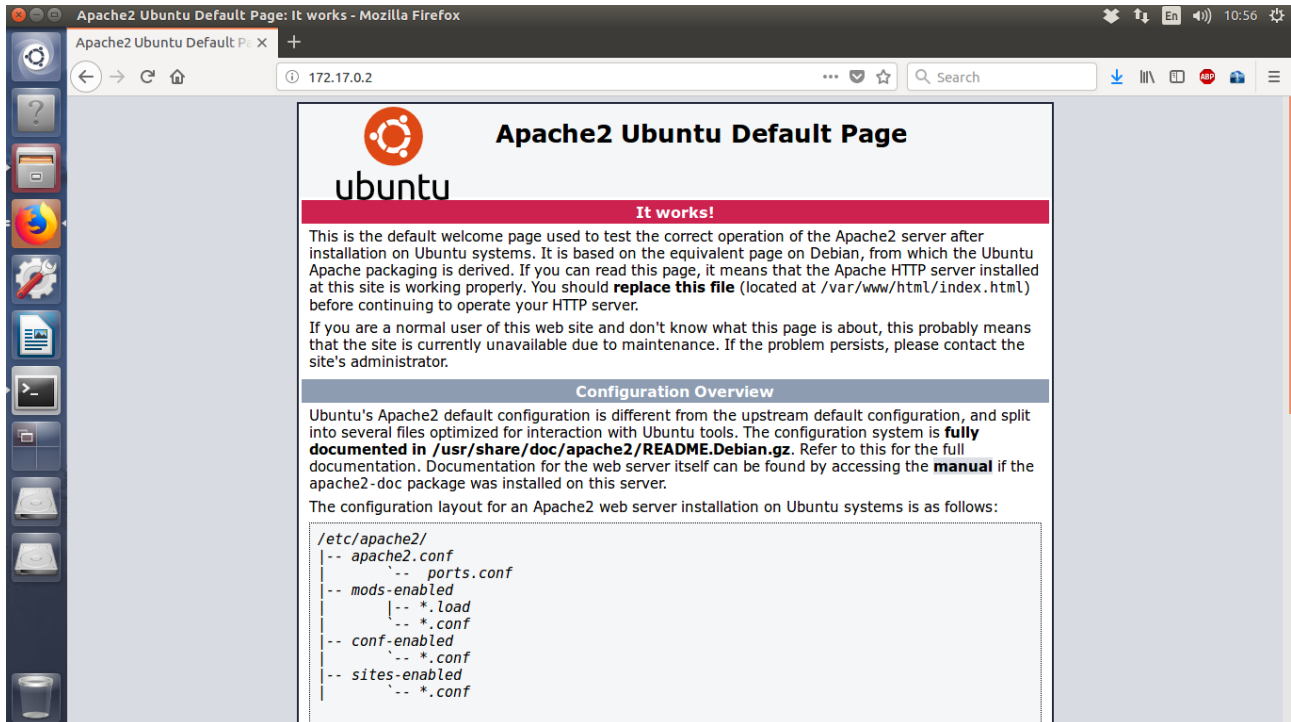
15. keluar dari container

```
root@ade148f36372:/# exit
exit
padli@mrX:~$ sudo docker ps -a
[sudo] password for padli:
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS                    PORTS               NAMES
ade148f36372        ubuntu              "/bin/bash"         20 minutes ago      Exited (0) 14 seconds ago                     my-first-contai
ner
padli@mrX:~$
```

16. menampilkan semua container yg ada, menjalankan container

```
padli@mrX:~$ sudo docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS                    PORTS               NAMES
ade148f36372        ubuntu              "/bin/bash"         3 hours ago         Exited (0) About a minute ago                 my-first-co
ntainer
padli@mrX:~$ sudo docker start ade148f36372
ade148f36372
padli@mrX:~$ sudo docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS               NAMES
ade148f36372        ubuntu              "/bin/bash"         3 hours ago         Up 1 second                             my-first-container
padli@mrX:~$
```

17. menampilkan detail info container yg sedang berjalan

18. memberhentikan container yg sedang berjalan

19. menjalankan perintah pada container yg sedang berjalan di background

20. membuat image dari container

```
padli@mrX:~$ sudo docker ps -a
CONTAINER ID    IMAGE      COMMAND       CREATED        STATUS                     PORTS        NAMES
ade148f36372    ubuntu     "/bin/bash"   3 hours ago    Exited (0) 48 seconds ago               my-first-contai
ner
padli@mrX:~$ sudo docker commit -m "add-apache2-ssh-net-tools" -a "julian23" ade148f36372 julian23/ubuntu-apache2-ssh-net-tools
sha256:7a60b267f465025b674b525fd008087671b7a7bb7f2dd93e93d32d8d48e7a35d
padli@mrX:~$ sudo docker images
REPOSITORY                             TAG        IMAGE ID       CREATED         SIZE
julian23/ubuntu-apache2-ssh-net-tools  latest     7a60b267f465   9 seconds ago   301MB
dorowu/ubuntu-desktop-lxde-vnc         latest     5d5344948b64   4 days ago      1.13GB
ubuntu                                 latest     c9d990395902   2 weeks ago     113MB
hello-world                            latest     e38bc07ac18e   2 weeks ago     1.85kB
padli@mrX:~$
```

21. hapus container

```
padli@mrX:~$ sudo docker ps -a
CONTAINER ID    IMAGE      COMMAND       CREATED        STATUS                      PORTS       NAMES
d0f32ec9c822    ubuntu     "/bin/bash"   8 seconds ago  Exited (0) 4 seconds ago                my-2nd-cont
ainer
ade148f36372    ubuntu     "/bin/bash"   3 hours ago    Exited (0) About a minute ago           my-first-co
ntainer
padli@mrX:~$ sudo docker rm d0f32ec9c822
d0f32ec9c822
padli@mrX:~$ sudo docker ps -a
CONTAINER ID    IMAGE      COMMAND       CREATED        STATUS                     PORTS        NAMES
ade148f36372    ubuntu     "/bin/bash"   3 hours ago    Exited (0) 2 minutes ago                my-first-contain
er
padli@mrX:~$
```

22. hapus image

```
padli@mrX:~$ sudo docker images
REPOSITORY                             TAG        IMAGE ID       CREATED         SIZE
julian23/ubuntu-apache2-ssh-net-tools  latest     7a60b267f465   14 minutes ago  301MB
dorowu/ubuntu-desktop-lxde-vnc         latest     5d5344948b64   4 days ago      1.13GB
ubuntu                                 latest     c9d990395902   2 weeks ago     113MB
hello-world                            latest     e38bc07ac18e   2 weeks ago     1.85kB
padli@mrX:~$ sudo docker rmi dorowu/ubuntu-desktop-lxde-vnc
Untagged: dorowu/ubuntu-desktop-lxde-vnc:latest
Untagged: dorowu/ubuntu-desktop-lxde-vnc@sha256:f6813264029800979a4bd3f3ed0908378f948a85a3685ee4baac21f9d09db249
Deleted: sha256:5d5344948b64b93872e700c9a9dde1a717f863b1f5d0a285fbb259aa7bcc04a0
Deleted: sha256:4d93b1940cc59ce086dad453ca6e22199746eae28b107a12b7086e87f0d0c910
Deleted: sha256:09c7ec6372f1f22a6b07170a6cba9807d6872c7e7c53892f88eff5e2a267f03d
Deleted: sha256:c90a3227f34b6d3744798ff00258ebd386461f02349742acd3b30f03eab68f56
Deleted: sha256:b18bce0bd9ee48b7dff6424a46e49a4442f0300d8209469849e6bbd702cc0e32
Deleted: sha256:3f82a2448923af52bbebd0b7e3ddb1fed82d78e4e5475994ec2a0231c98f1e08
Deleted: sha256:9cae16ecd9aff8b1d2c9b363438d79ce057ef6228574792e6f4fc7981c160ab2
Deleted: sha256:e17f3448be96e7587d4aa0c243b4b873870d4065bb87222eaf87b1e68dd58e16
Deleted: sha256:37e1e573bd02dea0940595e4b5e16ce8ab96bf7af0745098d92f57c74d91963e
padli@mrX:~$ sudo docker images
REPOSITORY                             TAG        IMAGE ID       CREATED         SIZE
julian23/ubuntu-apache2-ssh-net-tools  latest     7a60b267f465   15 minutes ago  301MB
ubuntu                                 latest     c9d990395902   2 weeks ago     113MB
hello-world                            latest     e38bc07ac18e   2 weeks ago     1.85kB
padli@mrX:~$
```

23. push image ke docker hub (daftar dulu account ke docker hub)

```
padli@mrX:~$ sudo docker images
[sudo] password for padli:
REPOSITORY                             TAG        IMAGE ID       CREATED         SIZE
julian23/ubuntu-apache2-ssh-net-tools  latest     7a60b267f465   2 hours ago     301MB
ubuntu                                 latest     c9d990395902   2 weeks ago     113MB
hello-world                            latest     e38bc07ac18e   2 weeks ago     1.85kB
padli@mrX:~$ sudo docker login -u julian23
Password:
Login Succeeded
padli@mrX:~$ sudo docker push julian23/ubuntu-apache2-ssh-net-tools
The push refers to repository [docker.io/julian23/ubuntu-apache2-ssh-net-tools]
86cb3a6c342f: Pushing [=======================================>    ]  152.8MB/188.3MB
a8de0e025d94: Mounted from julian23/ubuntu-apache23
a5e66470b281: Mounted from julian23/ubuntu-apache23
ac7299292f8b: Mounted from julian23/ubuntu-apache23
e1a9a6284d0d: Mounted from julian23/ubuntu-apache23
fccbfa2912f0: Mounted from julian23/ubuntu-apache23
```

24. cek image