

9강)

docker basic commands 실습

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우선, ubuntu에 접속하여, 'docker run'을 통해 ubuntu를 동작 시켰습니다.

```
root@c4c661a3807f: /
login as: ubuntu
Authenticating with public key "imported-openssh-key"
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 4.15.0-1057-aws x86_64)

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

System information as of Mon Apr 13 06:33:30 UTC 2020

System load:  0.06               Processes:            133
Usage of /:   56.0% of 7.69GB    Users logged in:     0
Memory usage: 44%               IP address for eth0: 172.31.46.150
Swap usage:   0%                IP address for docker0: 172.17.0.1

* Kubernetes 1.18 GA is now available! See https://microk8s.io for docs or
install it with:

    sudo snap install microk8s --channel=1.18 --classic

* Multipass 1.1 adds proxy support for developers behind enterprise
firewalls. Rapid prototyping for cloud operations just got easier.

    https://multipass.run/

* Canonical Livepatch is available for installation.
- Reduce system reboots and improve kernel security. Activate at:
    https://ubuntu.com/livepatch

34 packages can be updated.
0 updates are security updates.

Failed to connect to https://changelogs.ubuntu.com/meta-release-lts. Check your
Internet connection or proxy settings

*** System restart required ***
Last login: Thu Apr  9 14:59:29 2020 from 180.71.162.76
ubuntu@ip-172-31-46-150:~$ sudo docker images
REPOSITORY          TAG                 IMAGE ID            CREATED
ubuntu              latest             4e5021d210f6       3 weeks ago
64.2MB
ubuntu@ip-172-31-46-150:~$ sudo docker run -it -d ubuntu
c8bf29cf8a0bba8b179610a1845d58cfa602e673dd3aa927f41e3007f4bc6447
ubuntu@ip-172-31-46-150:~$ sudo docker ps
```

동작시킨 **Ubuntu**에
접속하고, 'test' 라는
director를 만들었습니다.

그 후,
Ubuntu 인스턴스를 지우고,
다시 처음처럼 동작 시키고
접속하였더니 'test'
directory가 없어졌습니다.

이를 통해,
매번 새로운 인스턴스가
생성됨을 알 수 있습니다.

```
root@c4c661a3807f: /
ubuntu@ip-172-31-46-150:~$ sudo docker run -it -d ubuntu
c8bf29cf8a0bba8b179610a1845d58cfa602e673dd3aa927f41e3007f4bc6447
ubuntu@ip-172-31-46-150:~$ sudo docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED
STATUS            PORTS              NAMES
c8bf29cf8a0b        ubuntu             "/bin/bash"        11 seconds ago
Up 8 seconds
ubuntu@ip-172-31-46-150:~$ ^C
ubuntu@ip-172-31-46-150:~$ sudo docker exec -it c8bf29cf8a0b bash
root@c8bf29cf8a0b:/# mkdir test
root@c8bf29cf8a0b:/# ls -la
total 76
drwxr-xr-x 1 root root 4096 Apr 13 06:35 .
drwxr-xr-x 1 root root 4096 Apr 13 06:35 ..
-rwxr-xr-x 1 root root    0 Apr 13 06:33 .dockerenv
drwxr-xr-x 2 root root 4096 Mar 11 21:05 bin
drwxr-xr-x 2 root root 4096 Apr 24 2018 boot
drwxr-xr-x 5 root root  360 Apr 13 06:33 dev
drwxr-xr-x 1 root root 4096 Apr 13 06:33 etc
drwxr-xr-x 2 root root 4096 Apr 24 2018 home
drwxr-xr-x 8 root root 4096 May 23 2017 lib
drwxr-xr-x 2 root root 4096 Mar 11 21:03 lib64
drwxr-xr-x 2 root root 4096 Mar 11 21:03 media
drwxr-xr-x 2 root root 4096 Mar 11 21:03 mnt
drwxr-xr-x 2 root root 4096 Mar 11 21:03 opt
dr-xr-xr-x 151 root root    0 Apr 13 06:33 proc
drwx----- 2 root root 4096 Mar 11 21:05 root
drwxr-xr-x 1 root root 4096 Mar 20 19:20 run
drwxr-xr-x 1 root root 4096 Mar 20 19:20 sbin
drwxr-xr-x 2 root root 4096 Mar 11 21:03 srv
dr-xr-xr-x 13 root root    0 Apr  9 15:16 sys
drwxr-xr-x 2 root root 4096 Apr 13 06:35 test
drwxrwxrwt 2 root root 4096 Mar 11 21:05 tmp
drwxr-xr-x 1 root root 4096 Mar 11 21:03 usr
drwxr-xr-x 1 root root 4096 Mar 11 21:05 var
root@c8bf29cf8a0b:/# exit
exit
ubuntu@ip-172-31-46-150:~$ sudo docker rm -f c8bf29cf8a0b
c8bf29cf8a0b
ubuntu@ip-172-31-46-150:~$ sudo docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED
STATUS            PORTS              NAMES
ubuntu@ip-172-31-46-150:~$ sudo docker run -it -d ubuntu
7a54624d9cb5686722b4fbcfdb72b6ed2288bc05178c4d3a5eff3eea3c5bf3c4
ubuntu@ip-172-31-46-150:~$ sudo docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED
STATUS            PORTS              NAMES
7a54624d9cb5        ubuntu             "/bin/bash"        23 seconds ago
Up 9 seconds
hopeful_ardinghelli
```

```
root@c4c661a3807f: /
7a54624d9cb5        ubuntu             "/bin/bash"        23 seconds ago
Up 9 seconds
hopeful_ardinghelli
ubuntu@ip-172-31-46-150:~$ ^C
ubuntu@ip-172-31-46-150:~$ sudo docker exec -it 7a54624d9cb5 bash
root@7a54624d9cb5:/# ls -la
total 72
drwxr-xr-x 1 root root 4096 Apr 13 06:37 .
drwxr-xr-x 1 root root 4096 Apr 13 06:37 ..
-rwxr-xr-x 1 root root    0 Apr 13 06:37 .dockerenv
drwxr-xr-x 2 root root 4096 Mar 11 21:05 bin
drwxr-xr-x 2 root root 4096 Apr 24 2018 boot
drwxr-xr-x 5 root root  360 Apr 13 06:37 dev
drwxr-xr-x 1 root root 4096 Apr 13 06:37 etc
drwxr-xr-x 2 root root 4096 Apr 24 2018 home
drwxr-xr-x 8 root root 4096 May 23 2017 lib
drwxr-xr-x 2 root root 4096 Mar 11 21:03 lib64
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drwxr-xr-x 2 root root 4096 Mar 11 21:03 mnt
drwxr-xr-x 2 root root 4096 Mar 11 21:03 opt
dr-xr-xr-x 151 root root    0 Apr 13 06:37 proc
drwx----- 2 root root 4096 Mar 11 21:05 root
drwxr-xr-x 1 root root 4096 Mar 20 19:20 run
drwxr-xr-x 1 root root 4096 Mar 20 19:20 sbin
drwxr-xr-x 2 root root 4096 Mar 11 21:03 srv
dr-xr-xr-x 13 root root    0 Apr  9 15:16 sys
drwxrwxrwt 2 root root 4096 Mar 11 21:05 tmp
drwxr-xr-x 1 root root 4096 Mar 11 21:03 usr
drwxr-xr-x 1 root root 4096 Mar 11 21:05 var
root@7a54624d9cb5:/# apt-get update
Get:1 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:2 http://archive.ubuntu.com/ubuntu bionic InRelease [242 kB]
Get:3 http://archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:4 http://archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:5 http://security.ubuntu.com/ubuntu bionic-security/restricted amd64 Package
s [44.6 kB]
```

```

root@c4c661a3807f: /
Get:16 http://archive.ubuntu.com/ubuntu bionic-updates/multi
[12.6 kB]
Get:17 http://archive.ubuntu.com/ubuntu bionic-backports/un
[4247 B]
Get:18 http://archive.ubuntu.com/ubuntu bionic-backports/main
96 B]
Fetched 17.8 MB in 49s (364 kB/s)
Reading package lists... Done
root@7a54624d9cb5:/# apt-get install -y 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 libapr1 libapr
libaprutil1-dbd-sqlite3 libaprutil1-ldap libasn1-8-heimdal
libgdbm-compat4 libgdbm5 libgssapi3-heimdal libhcrypto4-heim
libheimbase1-heimdal libheimntlm0-heimdal libhx509-5-heimd

```

```

update-alternatives: warning: skip creation of /usr/share/man/ja/man1/editor.1.g
z because associated file /usr/share/man/ja/man1/vim.1.gz (of link group editor)
doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/editor.1.gz b
ecause associated file /usr/share/man/man1/vim.1.gz (of link group editor) doesn
't exist
Processing triggers for mime-support (3.60ubuntu1) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
root@7a54624d9cb5:/# cd /var/www
root@7a54624d9cb5:/var/www# vim test.html
root@7a54624d9cb5:/var/www# vim test.html
root@7a54624d9cb5:/var/www# cd ..
root@7a54624d9cb5:/var# service apache2 status
* apache2 is not running
root@7a54624d9cb5:/var# service apache2 status
* apache2 is not running
root@7a54624d9cb5:/var# service apache2 start
* Starting Apache httpd web server apache2
AH00558: apache2: Could not reliably determine the server's fully qualified doma
in name, using 172.17.0.2. Set the 'ServerName' directive globally to suppress t
his message
*
root@7a54624d9cb5:/var# exit
exit
ubuntu@ip-172-31-46-150:~$ sudo docker images
REPOSITORY          TAG                 IMAGE ID            CREATED
SIZE
ubuntu              latest             4e5021d210f6       3 weeks ago
64.2MB
ubuntu@ip-172-31-46-150:~$ sudo docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED
STATUS             PORTS              NAMES
7a54624d9cb5       ubuntu             "/bin/bash"        14 minutes ago
Up 14 minutes
hopeful_ardinghelli
ubuntu@ip-172-31-46-150:~$ sudo docker commit ^C
ubuntu@ip-172-31-46-150:~$ sudo docker commit 7a54624d9cb5 doyun0916/websevice
sha256:3bb954f5d46d92bfe58a7bf7a32fe92a895b4744ee3e40574346889e5259a2d6

```

Ubuntu에 접속하여,
apache2와 vim editor를 install하고,
/var/www directory 안에 test.html
file을 생성하였습니다.

‘apache2 status’를 통해 상태를
확인해보고, ‘apache2 start’로
실행시켰습니다

그 후, 그 인스턴스를 docker의 image
file형태로 저장해 놓기 위해 ‘docker
commit’을 사용하였습니다.

EC2의 Ubuntu machine으로
내가 안 쓰는 port '81' 으로
접속 해올때, Ubuntu안의
default port '80' 을 가진 Ubuntu
인스턴스로 연결해 주기 위해,
아까 commit한 image를
다시 새로 'docker run' 시켰습니다.
그리고 접속하여,
다시 'apache2 start'로
실행 시켰습니다.

```
ubuntu@ip-172-31-46-150:~$ sudo docker images
REPOSITORY          TAG                 IMAGE ID            CREATED
SIZE
doyun0916/webservice latest             3bb954f5d46d       7 seconds ago
237MB
ubuntu               latest             4e5021d210f6       3 weeks ago
64.2MB
ubuntu@ip-172-31-46-150:~$ sudo docker run -it -p 81:80 -d doyun0916/webservice
c4c661a3807fe69667bd7000179cac1f991a33e2a7c00406f5c8ce18ff8c61bf
ubuntu@ip-172-31-46-150:~$ sudo docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED
STATUS            PORTS              NAMES
c4c661a3807f       doyun0916/webservice "/bin/bash"        29 seconds ago
Up 27 seconds      0.0.0.0:81->80/tcp  nifty_satoshi
7a54624d9cb5       ubuntu             "/bin/bash"        18 minutes ago
Up 18 minutes      hopeful_ardinghelli
ubuntu@ip-172-31-46-150:~$ ^C
ubuntu@ip-172-31-46-150:~$ sudo docker exec -i c4c661a3807f bash
^C
ubuntu@ip-172-31-46-150:~$ sudo docker exec -it c4c661a3807f bash
root@c4c661a3807f:/# service apache2 status
* apache2 is not running
root@c4c661a3807f:/# service apache2 start
* Starting Apache httpd web server apache2
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.17.0.3. Set the 'ServerName' directive globally to suppress this message
*
root@c4c661a3807f:/#
```




Apache2 Ubuntu Default Page

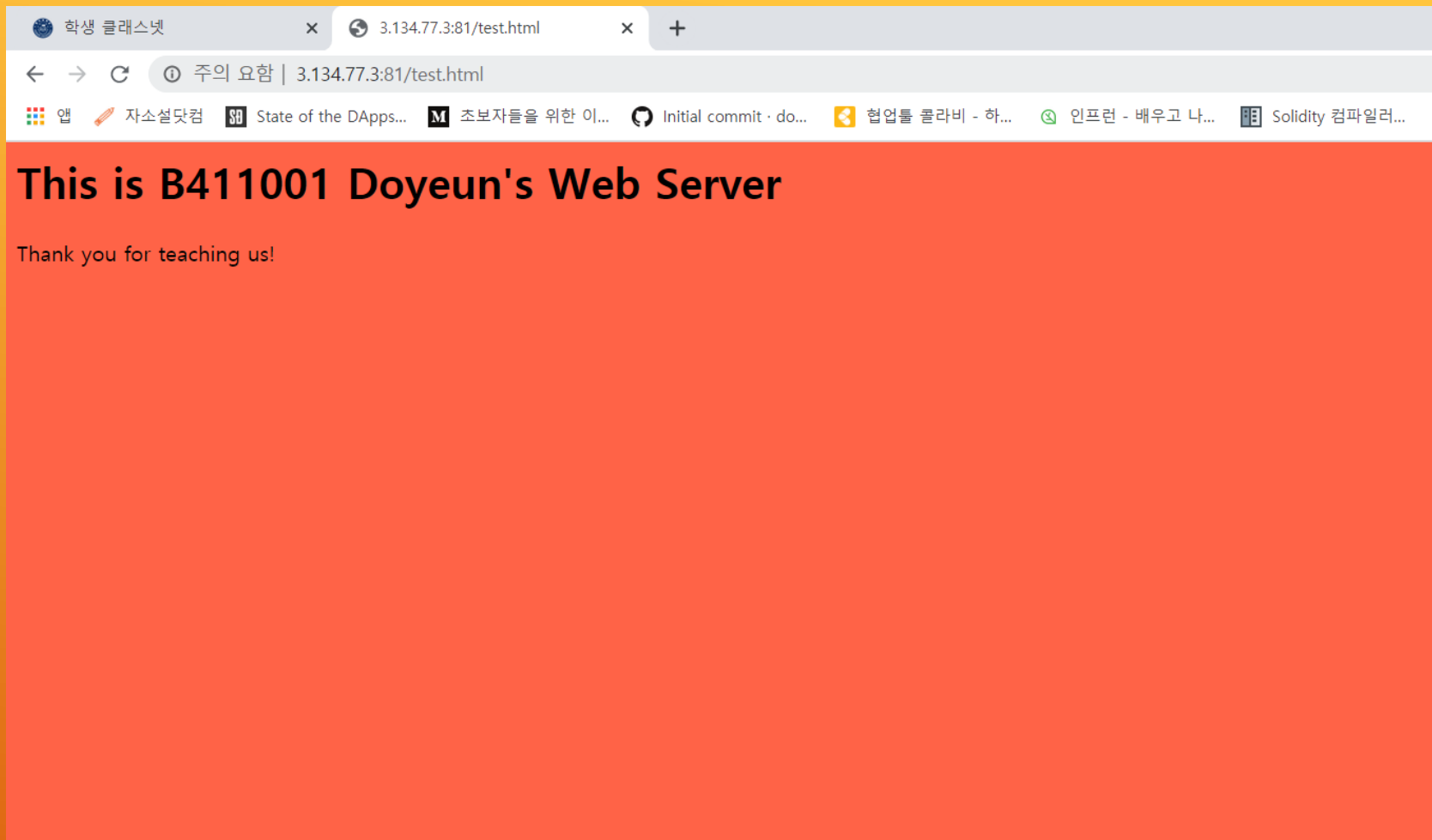
It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

확인을 위해 3.134.77.3:81 로 접속을 하였더니
위의 페이지가 나왔고, server 동작을 위해선,
/var/www/html 안에다가 file을 만들어야 함을
알았습니다. 그리하여 올바른 위치에 만들었습니다

```
ubuntu@ip-172-31-46-150:~$ sudo docker exec -it c4c661a3807f bash
root@c4c661a3807f:/# service apache status
apache: unrecognized service
root@c4c661a3807f:/# service apache2 status
 * apache2 is running
root@c4c661a3807f:/# cd var/www
root@c4c661a3807f:/var/www# ls
html  test.html
root@c4c661a3807f:/var/www# rm test.html
root@c4c661a3807f:/var/www# rm html
rm: cannot remove 'html': Is a directory
root@c4c661a3807f:/var/www# cd 'html'
> ^C
root@c4c661a3807f:/var/www# cd /html
bash: cd: /html: No such file or directory
root@c4c661a3807f:/var/www# cd html
root@c4c661a3807f:/var/www/html# vim test.html
root@c4c661a3807f:/var/www/html# vim test.html
```

```
root@c4c661a3807f: /var/www/html
<html>
  <body style="background-color:Tomato;">
    <h1>This is B411001 Doyeun's Web Server</h1>
    <p> Thank you for teaching us!</p>
  </body>
</html>
```



그 결과, 위와 같은 결과를 얻게 되었습니다.