

Report 2~3

정혜린

가상머신에 dcslab 계정 생성하여 해당 계정으로 ssh 접속 후 수행

Host에서 dcslab@virtual machine으로 접속

```
hrchung@ubuntu:~$ sudo adduser dcslab
Adding user 'dcslab' ...
Adding new group 'dcslab' (1001) ...
Adding new user 'dcslab' (1001) with group 'dcslab' ...
Creating home directory '/home/dcslab' ...
Copying files from '/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for dcslab
Enter the new value, or press ENTER to accept the default:
Full Name []:
Room Number []:
Work Phone []:
Home Phone []:
Other []:
Is the information correct? [Y/n] y
hrchung@ubuntu:~$ reboot
```

```
root@ubuntu:~
File Edit View Search Terminal Help
root@ubuntu:/home/hrchung# exit
exit
hrchung@ubuntu:~$ sudo usermod -aG sudo dcslab
hrchung@ubuntu:~$ su dcslab
Password:
To run a command as administrator (user "root"), use "sudo"
See "man sudo_root" for details.

dcslab@ubuntu:/home/hrchung$ sudo -i
[sudo] password for dcslab:
root@ubuntu:~# whoami
root
root@ubuntu:~#
```

```
dcslab@ubuntu: ~
UP BROADCAST RUNNING MULTICAST  MTU:1500  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
RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)

Leto@DESKTOP-RU8GLVE:/mnt/c/Users/Admin$ ssh dcslab@192.168.163.128
ssh: connect to host 192.168.163.128 port 22: Connection refused
Leto@DESKTOP-RU8GLVE:/mnt/c/Users/Admin$ ssh dcslab@192.168.163.128
The authenticity of host '192.168.163.128 (192.168.163.128)' can't be established.
ECDSA key fingerprint is SHA256:17A3Bf0vTr9kRkjpNh1bgPq+/30ociSV9NQLFDxcPoU.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.163.128' (ECDSA) to the list of known hosts.
dcslab@192.168.163.128's password:
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 5.7.6 x86_64)

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

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

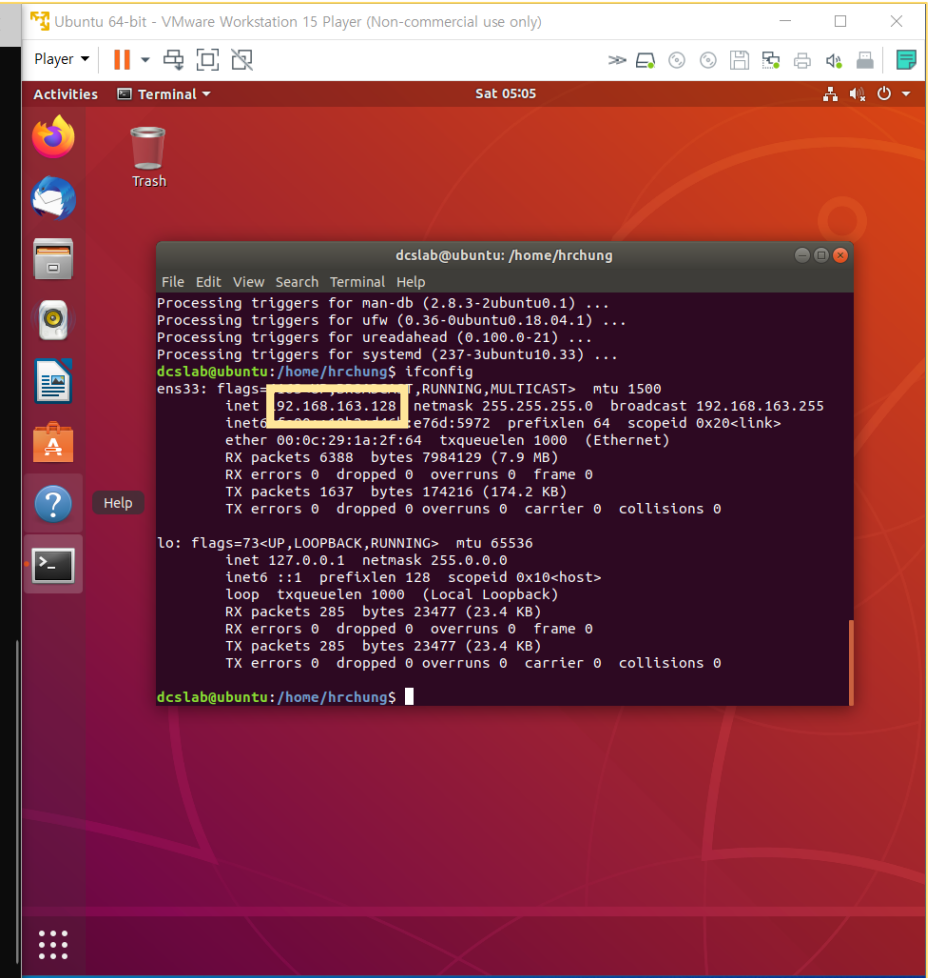
232 packages can be updated.
167 updates are security updates.

Your Hardware Enablement Stack (HWE) is supported until April 2023.

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.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

dcslab@ubuntu:~$
```



리눅스 command + 옵션 실행

File Commands

ls [options] file

options
-a show hidden file
-A show hidden file except . and ..
-d only show directories
-h human readable size
-l inode info
-m output as csv
-n numeric uid and guid
-r sort in reverse order
-S sort by file size

tree [options] dir

options
-d only directories
-f show full path
-P pattern only matching pattern
-l pattern except matching pattern
-h print size in human readable format
-C use colors
-L max level depth

cp [options] source dest

option
-b backup dest before overwrite
-r recursive
-f force
-l link files instead of copy
-P don't follow sym links
-i interactive
-u copy only if source newer than dest

mv [options] source dest

options
-b backup dest before overwrite
-f force
-i interactive
-u move only if source newer than dest

ln [options] file link

options
-s sym link (hard by default)
-f overwrite
-b backup old link before overwrite

rm [options] file

options
-f force
-i interactive

chmod [options] mode files(s)

options
-R recursive
symbolic mode
format:[ugoa][+ -=][perms]

find path [options][tests][actions]

options
-mindepth:start from min level in hierarchy
-maxdepth:end with max level in hierarchy

tests

-type d only directories

diff [options] pattern files

options
-r recursive
-w ignore whitespaces
-B ignore blank lines
-q only show file names

grep [options] pattern files

options
-i ignore case
-P pattern is a perl regex
-m stop after m matches
-n also show matching line number
-R recurse directories

cat [options] files

options
-v non ascii
-T show tabs

tail [options] file

options
-f show end of file live
-n last n lines

head [options] file

options
-n show first n lines

tac files(s)

print files starting from last line

cut [options] file

options
-d char : user char as delimiter
-f 1,3,5 : print fields 1,3,5

uniq [options] input output

options
-c prefix lines by number of occurrences
-d only print duplicate lines
-u only print unique lines

sort [options] files

options
-n numeric sort
-b ignore blank lines
-f ignore case
-r reverse order

tar [options] file

options
-f file: archive file
-c create
-t list
-x extract
-C DIR : cd to DIR
-z gzip
-j bzip2

du [options] file

options
-c : a grand total
-h : human readable
-L : deference sym links
-P : no deference of sym links
-s : total for each argument
-exclude=pattern

df [options] file

options
-h human readable
-i list inodes info
-P no deferences of sym links

리눅스 command + 옵션 실행

Processs Commands

ps [options]

options
-e : all processes
-f : full listing
-H : show hierarchy
-P pid : this process pid
-o x,y,z : show columns x y z
-N : negation
-u user : process owned by user
-sort=[+time|-time] : sort by [ascend|desc] time

top [options]

options
-d x : refresh every x seconds
-p pid_# : only process with pid_#
interactive commands
space : update display
e: human readable format
k : kill a process
o : change order
+T : sort by time

pgrep [options] pattern

Options
-l : show pid and process name
-a : show pid and full command line
-n : if more than one show newest
-o : if more than one show oldest
-u uid : show only processes of uid
-c : count result

Network & Remote

ssh [options] user@host ["cmd1;cmd2"]

options:
-2 : force protocol 2
-o StrictHostKeyChecking=no
: ignore warning due to remote host key change
-X: forward X11 display

wget [options] url

options
-b : run in background
-o file : print wget output in file
-q : be quiet
-d : debug
-O file : save response to file
-user=user: basic https user
-password=password : basic https auth password

curl [options] url

options
-H header : like -H "Host:st.com"
-u <user;password> : basic https auth
-s : be silent
-S : show errors if silent mode
-data-binary@filename : post filename content
-X method : PUT | GET | POST

ping [options] address

options
-c count
-s packet size
-W timeout

scp [options] source dest

options
-r : recursive

traceroute [options] host [packet_len]

options
-i device
-p port

mail [options] to-address

options
-s subject : email with subject
-c address1, address2 : cc copy
-b address1, address2 : bcc copy

Version Control Command

git [options]

options
-init : initialize
-add : stage files
-commit [-m "message"] : commit staged files
-checkout [-B|-D] branch : checkout to branch
-branch name : create branch name

```
dcslab@bc2:~/hrchung/nvidia-examples/0_Simple/matrixMulGen$ ps -ef | head -n 15
UID          PID    PPID  C STIME TTY          TIME CMD
root           1        0  0 Jun30 ?        00:00:20 /sbin/init
root           2        0  0 Jun30 ?        00:00:00 [kthreadd]
root           3        2  0 Jun30 ?        00:00:00 [ksoftirqd/0]
root           5        2  0 Jun30 ?        00:00:00 [kworker/0:0H]
root           8        2  0 Jun30 ?        00:22:35 [rcu_sched]
root           9        2  0 Jun30 ?        00:00:00 [rcu_bh]
root          10        2  0 Jun30 ?        00:00:00 [migration/0]
root          11        2  0 Jun30 ?        00:00:04 [watchdog/0]
root          12        2  0 Jun30 ?        00:00:04 [watchdog/1]
root          13        2  0 Jun30 ?        00:00:00 [migration/1]
root          14        2  0 Jun30 ?        00:00:00 [ksoftirqd/1]
root          16        2  0 Jun30 ?        00:00:00 [kworker/1:0H]
root          18        2  0 Jun30 ?        00:00:04 [watchdog/2]
root          19        2  0 Jun30 ?        00:00:00 [migration/2]
```

tmux session command 실행

PREFIX = <CTRL-B> (default)

pane

\$ PREFIX % # 세로로 pane 가르기

\$ PREFIX " # 가로로 가르기

window

\$ PREFIX c # 탭 열기

\$ PREFIX N # 해당 탭 번호로 이동하기

\$ PREFIX & # 탭 종료

\$ PREFIX p # 이전 탭으로 이동

\$ PREFIX n # 다음 탭으로 이동

session

\$ tmux ls

\$ tmux attach # 세션을 불러온다.

\$ PREFIX d # 해당 탭에서 나가되, 프로세스는 유지

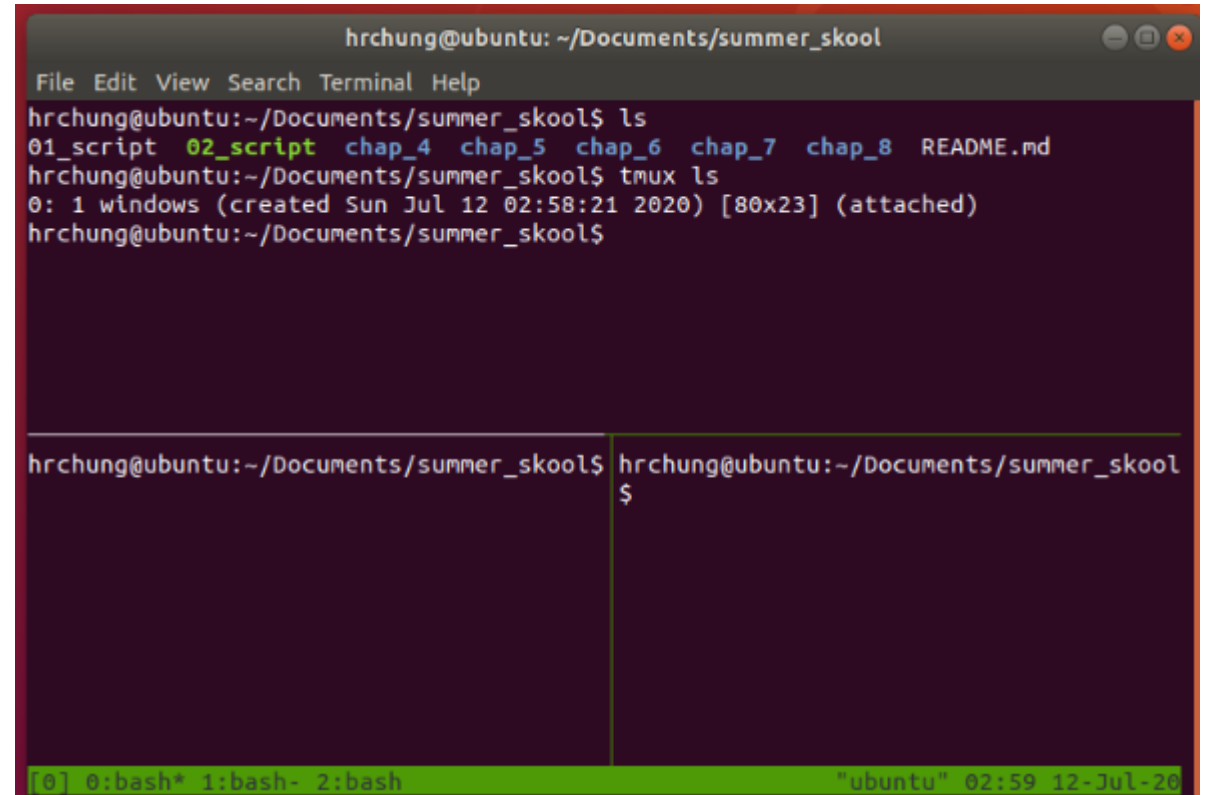
\$ tmux kill-session -t N # 세션을 죽인다.

TARGET_SESSION이라는 이름의 세션이 열려있는지 확인

\$ tmux has-session -t TARGET_SESSION

TARGET_SESSION이라는 이름의 세션을 가져온다.

\$ tmux attach-session -t TARGET_SESSION



```
hrchung@ubuntu: ~/Documents/summer_skool
File Edit View Search Terminal Help
hrchung@ubuntu:~/Documents/summer_skool$ ls
01_script 02_script chap_4 chap_5 chap_6 chap_7 chap_8 README.md
hrchung@ubuntu:~/Documents/summer_skool$ tmux ls
0: 1 windows (created Sun Jul 12 02:58:21 2020) [80x23] (attached)
hrchung@ubuntu:~/Documents/summer_skool$

hrchung@ubuntu:~/Documents/summer_skool$ hrchung@ubuntu:~/Documents/summer_skool$
[0] 0: bash* 1: bash- 2: bash "ubuntu" 02:59 12-Jul-20
```

Realistic 시나리오를 특정하고 필요한 cmd 조합하는 경우 3가지 이상 포함

```
leto@LAB99:/mnt/c/Users/Admin/Documents/snu_dcslab_projects/scripts$ cat script1
# !/bin/bash

# create direcotry for scipt under Documents and move scripts
mkdir ./project/
cp script* ./project
chmod -R +x ./project
tree .
rm -rf ./project
ls

leto@LAB99:/mnt/c/Users/Admin/Documents/snu_dcslab_projects/scripts$ ./script1
├── project
│   ├── script1
│   ├── script2
│   └── script3
├── script1
├── script2
└── script3

1 directory, 6 files
script1 script2 script3
leto@LAB99:/mnt/c/Users/Admin/Documents/snu_dcslab_projects/scripts$
```

```
# !/bin/bash

ls
# create directory for chap 04-08
for idx in $(seq 4 8)
do
    sudo mkdir chap_${idx}
done
ls

tree .
rm -rf chap_*
ls

leto@LAB99:/mnt/c/Users/Admin/Documents/snu_dcslab_projects/scripts$ ./script2
script1 script2 script3
chap_4 chap_5 chap_6 chap_7 chap_8 script1 script2 script3

├── chap_4
├── chap_5
├── chap_6
├── chap_7
├── chap_8
├── script1
├── script2
└── script3

5 directories, 3 files
script1 script2 script3
leto@LAB99:/mnt/c/Users/Admin/Documents/snu_dcslab_projects/scripts$
```

```
root@sdcl14:/home/hrchung# cat script3
#!/bin/bash

# get network card info with vendor, logical name, capacity
lshw -C network | grep -e 'vendor\|logical name\|capacity'

# MAC address
ip addr show | grep 'link/ether'

ethtool eno1 | grep Speed
root@sdcl14:/home/hrchung# ./script3
    vendor: Intel Corporation
    logical name: enp1s0f0
    capacity: 10Gbit/s
    vendor: Intel Corporation
    logical name: enp1s0f1
    capacity: 10Gbit/s
    vendor: Intel Corporation
    logical name: eno1
    capacity: 1Gbit/s
    vendor: Realtek Semiconductor Co., Ltd.
    logical name: enp5s0
    vendor: Realtek Semiconductor Co., Ltd.
    logical name: enp6s0
    logical name: docker0
link/ether 00:0a:cd:27:05:0f brd ff:ff:ff:ff:ff:ff
link/ether 00:0a:cd:27:05:10 brd ff:ff:ff:ff:ff:ff
link/ether 98:90:96:ab:c0:30 brd ff:ff:ff:ff:ff:ff
link/ether a0:36:9f:51:35:38 brd ff:ff:ff:ff:ff:ff
link/ether a0:36:9f:51:35:3a brd ff:ff:ff:ff:ff:ff
link/ether 02:42:4f:cc:0e:37 brd ff:ff:ff:ff:ff:ff
    Speed: 1000Mb/s
```


CPU, Memory, Storage, NIC 정보 확인

check CPU

\$ `grep "model name" /proc/cpuinfo | tail -1`

```
hrchung@ubuntu:~$ # check CPU
hrchung@ubuntu:~$ grep "model name" /proc/cpuinfo | tail -1
model name      : Intel(R) Core(TM) i5-6200U CPU @ 2.30GHz
```

check Memory

\$ `dmidecode -t 17 | egrep 'Memory | Device' | egrep -v 'No|Device'`

```
root@ubuntu:/home/leto# dmidecode -t 17 | egrep 'Memory|Size' | egrep -v 'No|Dev
ice'
      Size: 4096 MB
      Size: 2048 MB
      Size: 512 MB
```

check NIC

\$ `lshw -C network | grep -e 'logical name \W|capacity'`

```
root@ubuntu:/home/hrchung# lshw -C network | grep -e 'logical name\|capacity'
      logical name: ens33
      capacity: 1Gbit/s
```


CPU, Memory, Storage, NIC 정보 확인

```
root@ubuntu:/home/hrchung# # Storage
root@ubuntu:/home/hrchung# # block device #
root@ubuntu:/home/hrchung# fdisk -l | grep -i disk
Disk /dev/loop0: 160.2 MiB, 167931904 bytes, 327992 sectors
Disk /dev/loop1: 54.7 MiB, 57294848 bytes, 111904 sectors
Disk /dev/loop2: 4.2 MiB, 4403200 bytes, 8600 sectors
Disk /dev/loop3: 44.9 MiB, 47063040 bytes, 91920 sectors
Disk /dev/loop4: 89.1 MiB, 93417472 bytes, 182456 sectors
Disk /dev/loop5: 3.7 MiB, 3825664 bytes, 7472 sectors
Disk /dev/loop6: 14.8 MiB, 15462400 bytes, 30200 sectors
Disk /dev/loop7: 956 KiB, 978944 bytes, 1912 sectors
Disk /dev/sda: 50 GiB, 53687091200 bytes, 104857600 sectors
Disklabel type: dos
Disk identifier: 0x51517ce6
Disk /dev/loop8: 55 MiB, 57618432 bytes, 112536 sectors
Disk /dev/loop9: 96.5 MiB, 101191680 bytes, 197640 sectors
Disk /dev/loop10: 956 KiB, 978944 bytes, 1912 sectors
Disk /dev/loop11: 276 KiB, 282624 bytes, 552 sectors
Disk /dev/loop12: 2.4 MiB, 2555904 bytes, 4992 sectors
Disk /dev/loop13: 2.2 MiB, 2273280 bytes, 4440 sectors
Disk /dev/loop14: 62.1 MiB, 65105920 bytes, 127160 sectors
Disk /dev/loop15: 161.4 MiB, 169254912 bytes, 330576 sectors
Disk /dev/loop16: 255.6 MiB, 267980800 bytes, 523400 sectors
```

```
root@ubuntu:/home/hrchung# lsblk -o KNAME,TYPE,SIZE,MODEL
KNAME  TYPE  SIZE MODEL
fd0    disk   4K
loop0  loop 160.2M
loop1  loop  54.7M
loop2  loop   4.2M
loop3  loop  44.9M
loop4  loop  89.1M
loop5  loop   3.7M
loop6  loop  14.8M
loop7  loop   956K
loop8  loop    55M
loop9  loop  96.5M
loop10 loop   956K
loop11 loop   276K
loop12 loop    2.4M
loop13 loop    2.2M
loop14 loop   62.1M
loop15 loop  161.4M
loop16 loop  255.6M
sda    disk   50G  VMware Virtual S
sda1   part   50G
sr0    rom   1024M  VMware SATA CD00
sr1    rom   1024M  VMware SATA CD01
```