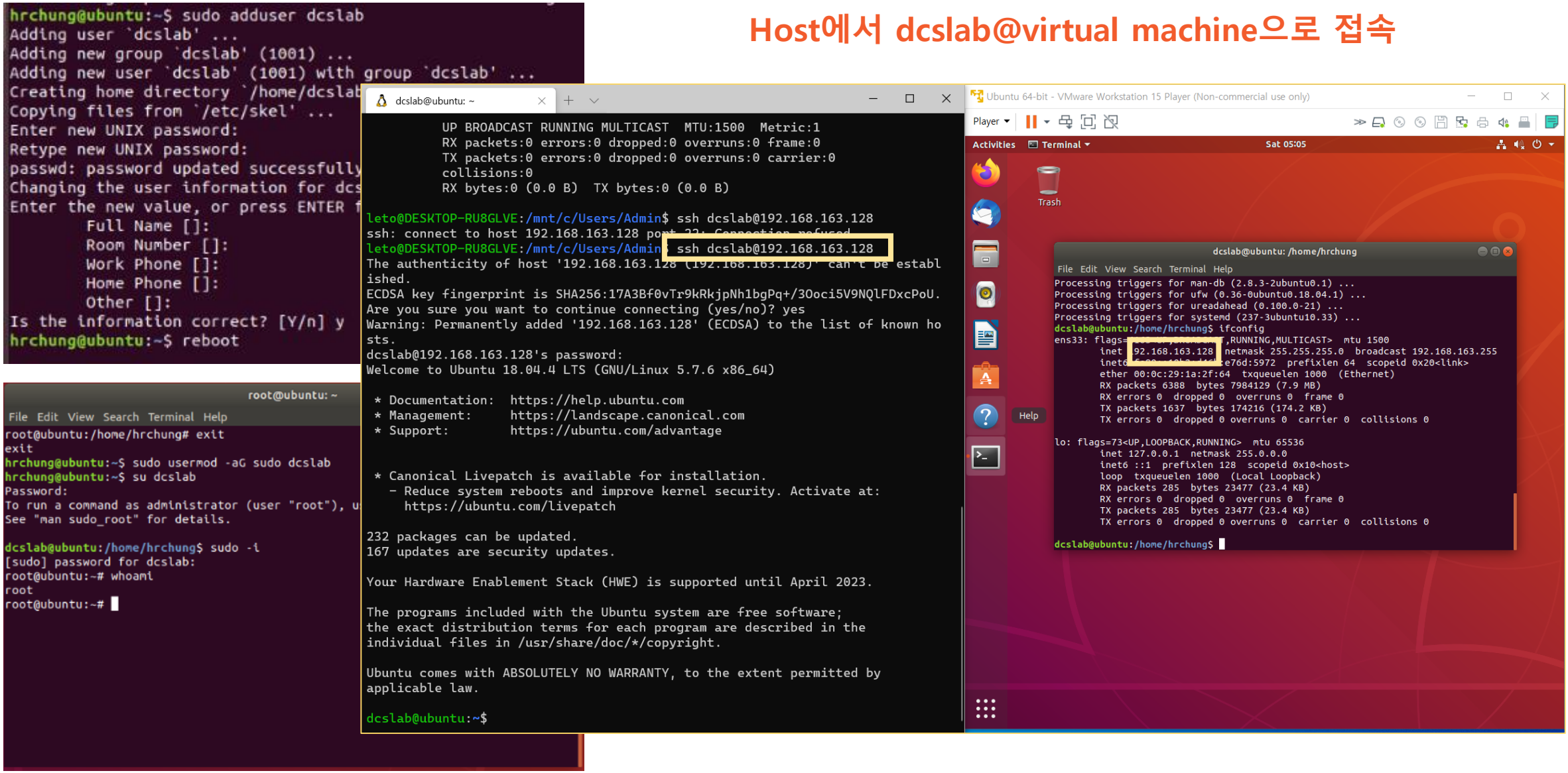
Report 2~3

정혜린

가상머신에 dcslab 계정 생성하여 해당 계정으로 ssh 접속 후 수행

Host에서 dcslab@virtual machine으로 접속



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
-I 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
-I 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 rgex
-m stop after m matches
-n also show matching line number
-R recurse directories

cat [options] files
options
-v non asci
-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

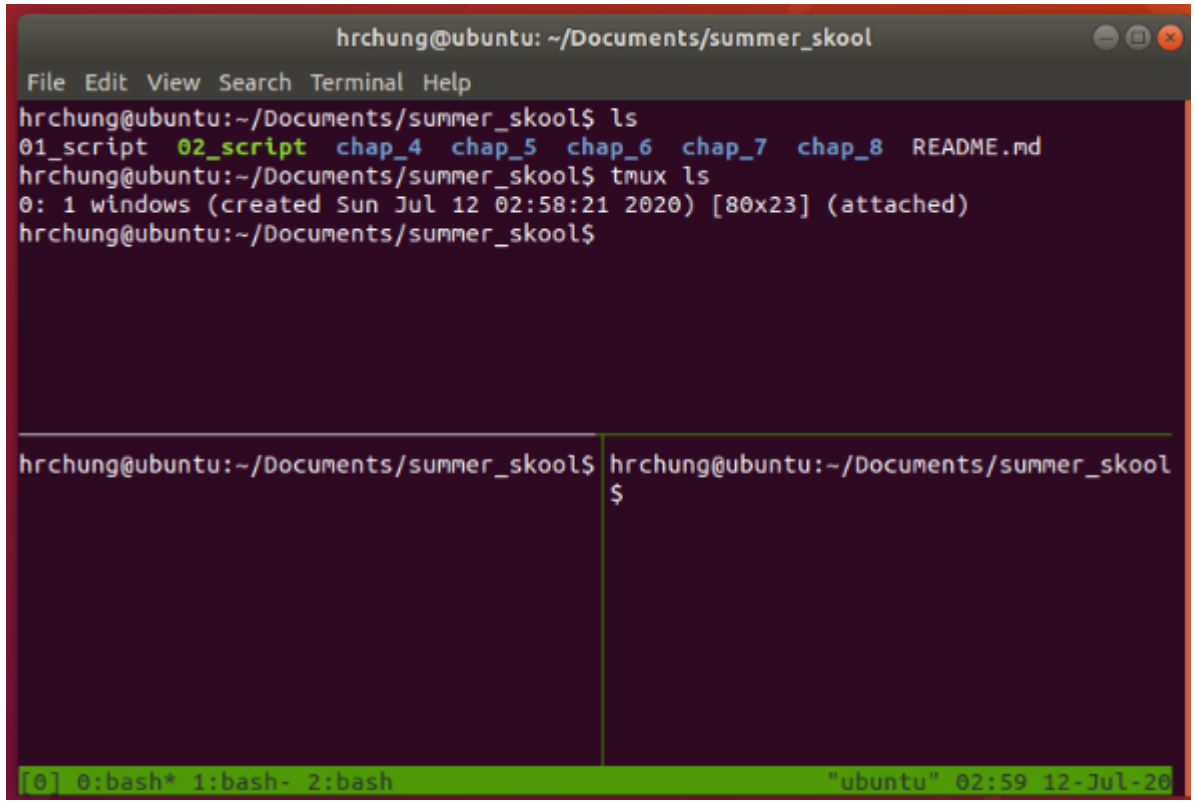
Version Control Command

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
```



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@sdc114:/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@sdc114:/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 ₩|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
```