

HW3. 리눅스 명령어 실습

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1. 리눅스 명령어 실습 (90점)

(1) 2-1 강의 내용 실습

```
$ date
Fri Apr  2 00:20:25 PDT 2021

$ cal
      April 2021
Su Mo Tu We Th Fr Sa
                1  2  3
 4  5  6  7  8  9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30

$ who
duwltn1301 :0                2021-04-01 20:53 (:0)
duwltn1301 pts/1            2021-04-01 20:55 (192.168.96.1)

$ w
00:20:31 up  3:27,  2 users,  load average: 0.00, 0.00, 0.01
USER      TTY      FROM              LOGIN@   IDLE   JCPU   PCPU WHAT
duwltn13 :0        :0                20:53   ?xdm?  54.21s  0.01s /usr/lib/gdm3/gdm-x-session
--run-script env GNOME_SHELL_SESSION_MODE=ubuntu gnome-session --session
duwltn13 pts/1    192.168.96.1      20:55   22:03   0.20s   0.00s vi mytest.c

$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
```

```

sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd/netif:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd/resolve:/usr/sbin/nologin
syslog:x:102:106:./home/syslog:/usr/sbin/nologin
messagebus:x:103:107:./nonexistent:/usr/sbin/nologin
_apt:x:104:65534:./nonexistent:/usr/sbin/nologin
uidd:x:105:111:./run/uidd:/usr/sbin/nologin
avahi-autoipd:x:106:112:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:107:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:108:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
rtkit:x:109:114:RealtimeKit,,,:/proc:/usr/sbin/nologin
cups-pk-helper:x:110:116:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
speech-dispatcher:x:111:29:Speech Dispatcher,,,:/var/run/speech-dispatcher:/bin/false
whoopsie:x:112:117:./nonexistent:/bin/false
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/usr/sbin/nologin
saned:x:114:119:./var/lib/saned:/usr/sbin/nologin
avahi:x:115:120:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
colord:x:116:121:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
hplip:x:117:7:HPLIP system user,,,:/var/run/hplip:/bin/false
geoclue:x:118:122:./var/lib/geoclue:/usr/sbin/nologin
pulse:x:119:123:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:120:65534:./run/gnome-initial-setup:/bin/false
gdm:x:121:125:Gnome Display Manager:/var/lib/gdm3:/bin/false
duwltn1301:x:1000:1000:Yeo Ji Su,,,:/home/duwltn1301:/bin/bash

```

```
ssh:x:122:65534::/run/ssh:/usr/sbin/nologin
```

(2) 3-1. 27페이지 실습

```
$ touch file1
$ mkdir test1 test2
$ mkdir test1/myprog1
$ mkdir test1/myprog2
$ ls -F -R
.:
Desktop/ Documents/ Downloads/ file1 Music/ myprog2/ Pictures Public/ Templates/
test1/ test2/ typescript Videos/

./Desktop:
mytest* mytest.c

./Documents:

./Downloads:

./Music:

./myprog2:

./Pictures:

./Public:

./Templates:

./test1:
myprog1/ myprog2/

./test1/myprog1:

./test1/myprog2:

./test2:
```

./Videos:

(3) 3-2. 16페이지 실습

```
$ mkdir cptest
$ cd ~/cptest
$ touch test1
$ touch test2
$ cp -l test1 test4
$ cp -s test1 test5
$ mv test2 test6
$ ls -al
total 8
drwxr-xr-x  2 duwlt1301 duwlt1301 4096 Apr  2 00:43
drwxr-xr-x 19 duwlt1301 duwlt1301 4096 Apr  2 00:43
-rw-r--r--  2 duwlt1301 duwlt1301    0 Apr  2 00:43 test1
-rw-r--r--  2 duwlt1301 duwlt1301    0 Apr  2 00:43 test4
lrwxrwxrwx  1 duwlt1301 duwlt1301    5 Apr  2 00:43
-rw-r--r--  1 duwlt1301 duwlt1301    0 Apr  2 00:43 test6

$ ls -il test*
1180966 -rw-r--r-- 2 duwlt1301 duwlt1301 0 Apr  2 00:43 test1
1180966 -rw-r--r-- 2 duwlt1301 duwlt1301 0 Apr  2 00:43 test4
1186142 lrwxrwxrwx 1 duwlt1301 duwlt1301 5 Apr  2 00:43 test5 -> test1
1181013 -rw-r--r-- 1 duwlt1301 duwlt1301 0 Apr  2 00:43 test6
```

(4) 3-2. 37페이지 실습

```
$ cd~
$ mkdir workspace1 workspace2 workspace3
$ cd workspace1
$ mkdir test1 test2
$ cd ~/workspace2
$ mkdir test3 test4 test5
$ mkdir ~/workspace3/Linux
$ cd ~/workspace3/Linux
$ mkdir test6 test7
$ cd ~
$ ls -F -R
.:

```

```
cpptest/  Documents/  file1  myprog2/  Public/  test1/  typescript  workspace1/
workspace3/
Desktop/  Downloads/  Music/  Pictures/  Templates/  test2/  Videos/  workspace2/

./cpptest:
test1 test4 test5@ test6

./Desktop:
mytest* mytest.c

./Documents:

./Downloads:

./Music:

./myprog2:

./Pictures:

./Public:

./Templates:

./test1:
myprog1/ myprog2/

./test1/myprog1:

./test1/myprog2:

./test2:

./Videos:

./workspace1:
test1/ test2/
```

```
./workspace1/test1:

./workspace1/test2:

./workspace2:
test3/ test4/ test5/

./workspace2/test3:

./workspace2/test4:

./workspace2/test5:

./workspace3:
Linux/

./workspace3/Linux:
test6/ test7/

./workspace3/Linux/test6:

./workspace3/Linux/test7:
```

(5) 3-3. 17페이지, 18페이지 실습

```
$ cd ~/cptest
$ umask 026
$ touch newfile2
$ ls -l newfile2
-rw-r----- 1 duwltn1301 duwltn1301 0 Apr  2 01:06 newfile2

$ mkdir newdir
$ ls -l
total 4
drwxr-x--x 2 duwltn1301 duwltn1301 4096 Apr  2 01:06 newdir
-rw-r----- 1 duwltn1301 duwltn1301  0 Apr  2 01:06 newfile2
-rw-r--r-- 2 duwltn1301 duwltn1301  0 Apr  2 00:43 test1
-rw-r--r-- 2 duwltn1301 duwltn1301  0 Apr  2 00:43 test4
lrwxrwxrwx 1 duwltn1301 duwltn1301  5 Apr  2 00:43 test5 -> test1
```

```
-rw-r--r-- 1 duwltn1301 duwltn1301 0 Apr 2 00:43 test6

$ chmod 760 newfile2
$ ls -l newfile2
-rwxrwx--- 1 duwltn1301 duwltn1301 0 Apr 2 01:06 newfile2
$ chmod o+r newfile
$ chmod u-x newfile
$ ls -l newfile
-rw-rw-r-- 1 duwltn1301 duwltn1301 0 Apr 2 01:06 newfile2
```

(6) 4-1. 29페이지 실습

```
$ gcc -o mytest mytest.c
$ ./mytest &
[1] 7570
$ ps -l
F S  UID    PID    PPID  C PRI  NI ADDR SZ WCHAN  TTY          TIME CMD
0 S  1000    7552    7551  0  80   0 -  7390 wait  pts/2    00:00:00 bash
0 R  1000    7570    7552 99  80   0 -  1095 -    pts/2    00:00:06 mytest
0 R  1000    7571    7552  0  80   0 -  9006 -    pts/2    00:00:00 ps
$ kill -9 "PID of mytest"
bash: kill: PID of mytest: arguments must be process or job IDs
```

(7) 4-3. 13-15 페이지 실습

```
$ mkdir ftptest
$ cd ftptest
$ ftp ftp.gnu.org
Connected to ftp.gnu.org.
220 GNU FTP server ready.
Name (ftp.gnu.org:duwltn1301): anonymous
230-NOTICE (Updated October 13 2017):
230-
230-Because of security concerns with plaintext protocols, we still
230-intend to disable the FTP protocol for downloads on this server
230-(downloads would still be available over HTTP and HTTPS), but we
230-will not be doing it on November 1, 2017, as previously announced
230-here. We will be sharing our reasons and offering a chance to
230-comment on this issue soon; watch this space for details.
230-
```

```

230-If you maintain scripts used to access ftp.gnu.org over FTP,
230-we strongly encourage you to change them to use HTTPS instead.
230-
230----
230-
230-Due to U.S. Export Regulations, all cryptographic software on this
230-site is subject to the following legal notice:
230-
230-    This site includes publicly available encryption source code
230-    which, together with object code resulting from the compiling of
230-    publicly available source code, may be exported from the United
230-    States under License Exception "TSU" pursuant to 15 C.F.R. Section
230-    740.13(e).
230-
230-This legal notice applies to cryptographic software only. Please see
230-the Bureau of Industry and Security (www.bxa.doc.gov) for more
230-information about current U.S. regulations.
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.

ftp> cd gnu/diction
250 Directory successfully changed.

ftp> ls
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
-rw-r--r--    1 3003      65534      68940 Aug 28  1998 diction-0.7.tar.gz
-rw-r--r--    1 3003      65534      90957 Mar 04  2002 diction-1.02.tar.gz
-rw-r--r--    1 3003      65534     141062 Sep 17  2007 diction-1.11.tar.gz
-rw-r--r--    1 3003      65534       189 Sep 17  2007 diction-1.11.tar.gz.sig
226 Directory send OK.

ftp> get diction-1.11.tar.gz
local: diction-1.11.tar.gz remote: diction-1.11.tar.gz
200 PORT command successful. Consider using PASV.
150 Opening BINARY mode data connection for diction-1.11.tar.gz (141062 bytes).
226 Transfer complete.

```


141062 bytes received in 0.63 secs (219.4868 kB/s)

ftp> bye

221 Goodbye.

\$ tar xzf diction-1.11.tar.gz

\$ ls

diction-1.11 diction-1.11.tar.gz

\$ cd diction-1.11

\$ ls

config.guess	configure	diction	diction.spec	en_GB.mo	getopt_int.h	misc.c
nl.po	style.1					
config.h	configure.in	diction.1	diction.spec.in	en_GB.po	getopt.o	misc.h
README	style.1.in					
config.h.in	COPYING	diction.1.in	diction.texi	getopt1.c	INSTALL	misc.o
sentence.c	style.c					
config.log	de	diction.c	diction.texi.in	getopt1.o	install-sh	NEWS
sentence.h	style.o					
config.status	de.mo	diction.o	en	getopt.c	Makefile	nl
sentence.o	test					
config.sub	de.po	diction.pot	en_GB	getopt.h	Makefile.in	nl.mo
style						

\$ ls *.c

diction.c getopt1.c getopt.c misc.c sentence.c style.c

\$ ls *.h

config.h getopt.h getopt_int.h misc.h sentence.h

\$./configure

checking build system type... x86_64-unknown-linux-gnu

checking host system type... x86_64-unknown-linux-gnu

checking for gcc... gcc

checking for C compiler default output file name... a.out

checking whether the C compiler works... yes

checking whether we are cross compiling... no

checking for suffix of executables...

checking for suffix of object files... o

checking whether we are using the GNU C compiler... yes

checking whether gcc accepts -g... yes

```
checking for gcc option to accept ISO C89... none needed
checking for a BSD-compatible install... /usr/bin/install -c
checking for strerror... yes
checking for library containing regcomp... none required
checking for broken realloc... no
checking for msgfmt... yes
checking how to run the C preprocessor... gcc -E
checking for grep that handles long lines and -e... /bin/grep
checking for egrep... /bin/grep -E
checking for ANSI C header files... yes
checking for sys/types.h... yes
checking for sys/stat.h... yes
checking for stdlib.h... yes
checking for string.h... yes
checking for memory.h... yes
checking for strings.h... yes
checking for inttypes.h... yes
checking for stdint.h... yes
checking for unistd.h... yes
checking libintl.h usability... yes
checking libintl.h presence... yes
checking for libintl.h... yes
checking for library containing gettext... none required
configure: creating ./config.status
config.status: creating Makefile
config.status: creating diction.1
config.status: creating diction.texi
config.status: creating diction.spec
config.status: creating style.1
config.status: creating test/rundiction
config.status: creating config.h
config.status: config.h is unchanged

$ make
make: Nothing to be done for 'all'.
```

2. 논의 (10점)

7 번 과제에서 ftp 명령어를 사용해서 익명으로 ftp 에 접속을 한 후 그누서버에서 디렉토리도 옮겼는데, ls 명령어를 입력하니 "200 PORT command successful. Consider using PASV."메시지가 뜬 후 425 failed to establish connection. 에러메시지가 떴다. 이를 해결하기 위해 구글링을 했고, passtive 모드로 접속을 하기 위해 # vi /etc/vsftpd/vsftpd.conf 명령어로 pasv_enable=YES 를 해보는 등 여러가지 시도를 해보았지만 해결되지 않았다. quote pasv 를 추가했지만 그래도 해결되지 않아 고민을 많이 했다. 마침내 윈도우의 제어판 방화벽 옵션에서 모든 방화벽을 사용안함으로 바꾸고 파일을 실행해보니 문제가 없었다. 이를 찾기까지 많은 시간이 들어서 힘들었지만 해결하는 과정에서 파일 송수신에서의 active 모드, passive 모드, yum 명령어에 대해 새롭게 공부 할 수 있어 좋았다.