Homework #5

1. Do “clear”, then do “ps –ef”, thend do “ps –ef | grep init”.
   - Take a screenshot 
   - What is the program “grep”?
   - What is the PID of “init” program?

2. Do “clear”, then do “top”, then press “space key”, then press “M, then press “P”, then press “q”.
   - Take a screenshot 
   - What is each key “space”, “M”, “P”, “q” for the top interactive program?

3. Do “clear”, then do “ps u”, then do “bash”, then do “bash”, then do “bash”, then do “ps l”, then do “ps f”, then do “exit”, then do “exit”, then do “exit”.
   - Take a screenshot 
   - Which process was the parent process of the process “ps f”?

4. Do “clear”, then do “vi a”, then press “ctrl+z”, then do “jobs”, then do “xterm&” (back to the original terminal by mouse clicks), then do “jobs”, then do “vi b”, then press “ctrl+z”, then do “jobs”, then do “vi c”, then press “ctrl+z”, then do “jobs”, then do “fg”, then do “:q!”, then do “jobs”.
   - Take a screenshot 
   - What do “-” and “+” mean in the results of jobs program?

5. Do “clear”, then do “fg %1”, then do “:q!”, then do “jobs”, then do “fg”, then do “:q!”, then do “jobs”, then do “kill -9 $(ps | grep xterm | cut –d” ” –f2)”, then press enter, then do “jobs”.
   - Take a screenshot 
   - Describe the command “kill -9 $(ps | grep xterm | cut –d” ” –f2)”.

6. Start a terminal, and do “hostname”, then do “su” (password is required), then do “hostname testhost”, then do “hostname”, then do “domainname jnu.ac.kr”, then do “domain name”, then do “exit”
   - Take a screenshot 
   - If you start a new terminal what is changed?
   - If you restart the machine and start a new terminal, is still the change of host and domain name valid?

7. do “clear”, then do “ifconfig”, then do “su”(password is required), then do “ifconfig eth0 down” (wait for a toast indicating eth0 is disconnected), then do “ifconfig eth0”, then do “ifconfig eth0 up”(wait for a toast indicating eth0 is connected), then do “ifconfig eth0”

- Take a screenshot 

- What is IP address, subnet mask, MAC address of eth0?

8. Change the contents of /etc/network/interfaces to following:

```
auto lo
iface lo inet loopback

auto eth0
iface eth0 inet dhcp

auto eth0:0
iface eth0:0 inet static
address 192.168.142.150
netmask 255.255.255.0
broadcast 192.168.0.255
gateway 192.168.142.1
```

Then, do “/etc/init.d/networking restart”, thend do “ifconfig”, then do “ping 192.168.142.150”.

- Take a screenshot 

9. Do “clear”, then do “route”, then do “route –n”, then do “route add default gw 192.168.142.3”, then do “route –n”, then do “route add –net 192.168.133.0 netmaks, 255.255.255.0 gw 192.168.142.3” then do “route –n”

- Take a screenshot 

-What is the meaning of “route add –net 192.168.133.0 netmask 255.255.255.0 gw 192.168.142.3”?

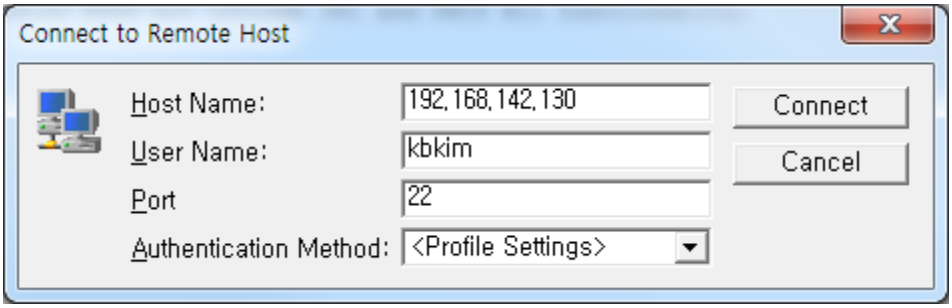
- What is the command to remove the policies which are added in this exercise?

10. Do “apt-get install ssh”, then do “service ssh restart”, thend do “netstat –ntl”.

On the host machine or other machine, install a ssh client and connect to your ssh server.

(For MS Windows : http://myweb.jnu.ac.kr/~kbkim/data/util/SSHSecureShellClient-3.2.9.exe)

To connect to your ssh server, use the “Quick Connect” button of the client like the following figure.



- Take a screenshot of ssh client after connection

11.

If you use Ubuntu 10.04, follow next instructions:

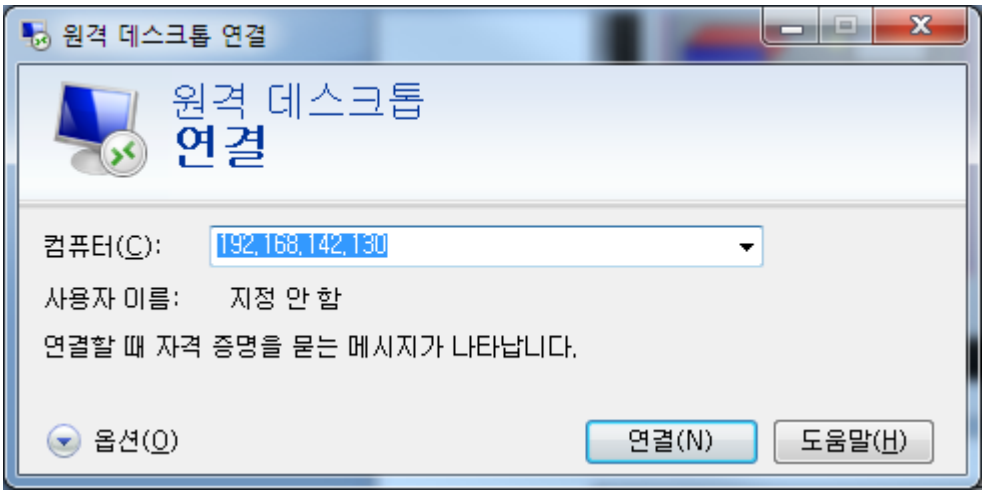
Do “apt-get install xrdp”, then do “service xrdp restart”, then do “netstat –ntl”.

On the MS window, use “원격 데스트톱 연결” as follows to access your linux machine.

If you use Ubuntu 14.04 or more, follow next instructions:

Do “apt-get install xrdp”, then do “apt-get install xfce4”, then “su - <your_account>”, then do “echo xfce4-session > ~/.xsession”, then do “exit”, then do “service xrdp restart”, thend do “netstat –ntl”.

On the MS window, use “원격 데스트톱 연결” as follows to access your linux machine.



- Take a screenshot of ssh client after connection

12. Do "apt-get install apache2", then do "ln –s /etc/apache2/mods-available/userdir.load /etc/apache2/mods-enabled/userdir.load", then do "ln –s /etc/apache2/mods-available/userdir.conf /etc/apache2/mods-enabled/userdir.conf", then do "service apache2 restart", then do "exit"(exit from root), then do "cd ~", then do "mkdir public_html", then do "touch public_html/index.html", then add the contents of index.html as follows:

```
==================
<html><body><h1>Linux System Testing</h1>
<h1>JNU Linux System Exercise Page</h1>
<p>This is the test web page of kbkim.</p>
<p>The web server software is running but no content has been added, yet.</p>
</body></html>
==================
```

Then, do "chmod 755 ~/public_html", then do "chmod 644 ~/public_html/index.html"

On any web browser access your machine and your own web page.

For example your account number is "kbkim" and ip address of your linux machine is "192.168.142.130", on a web browser put the URL as "http://192.168.142.130/~kbkim"

- Take a screenshot of web browser

Problem 1. Describe what the following services/protocols are and find out their port numbers.

1) ftp
2) ftp-data
3) ssh
4) telnet
5) tftp
6) www
7) pop3
8) imap3
9) ldap
10) https
11) rtsp

Problem 2. By using public key, you can login a remote machine without giving a password. Describe how to do this with the Windows ssh client.