EEE 4482 Server Installation and Programming

Worksheet 2c – Linux commands

Objective: To familiarize some Linux commands

Tools: Windows PC

Software: Oracle VM Virtual Box version 6.1.12
CentOS 7

Topics covered:

- Commands of Linux

Component list:

None

Part 3

1. introduction to users

1.1. whoami

The **whoami** command tells you your username. Assume “paul” is logon now:

```
[paul@centos7 ~]$ whoami
paul
[paul@centos7 ~]$
```

1.2. who

The **who** command will give you information about who is logged on the system.

```
[paul@centos7 ~]$ who
root     pts/0        2014-10-10 23:07
(10.104.33.101) paul  pts/1 2014-10-10 23:30
(10.104.33.101) laura pts/2 2014-10-10 23:34
(10.104.33.96) tania  pts/3 2014-10-10 23:39
(10.104.33.91) [paul@centos7 ~]$
```

1.3. who am i

With **who am i** the **who** command will display only the line pointing to your current session.

```
[paul@centos7 ~]$ who am i
paul     pts/1        2014-10-10 23:30
(10.104.33.101) [paul@centos7 ~]$
```

1.4. w

The **w** command shows you who is logged on and what they are doing.

```
[paul@centos7 ~]$ w
 23:34:07 up 31 min,  2 users,  load average: 0.00, 0.01, 0.02
USER     TTY        LOGIN@   IDLE   JCPU
         PCPU WHAT root    pts/0   23:07
```

```
15.00s    0.01s   0.01s top paul
pts/1     23:30    7.00s  0.00s
0.00s w [paul@centos7 ~]$
```

1.5. id

The **id** command will give you your user id, primary group id, and a list of the groups that you belong to.

```
paul@centos7:~$ id
uid=1000(paul) gid=1000(paul) groups=1000(paul)
```

On RHEL/CentOS you will also get **SELinux** context information with this command.

```
[root@centos7 ~]# id
uid=0(root) gid=0(root) groups=0(root) context=unconfined_u:unconfined_r\
:unconfined_t:s0-s0:c0.c1023
```

1.6. su to another user

The **su** command allows a user to run a shell as another user.

```
laura@centos7:~$
su tania
Password:
tania@centos7:/ho
me/laura$
```

1.7. su to root

Yes you can also **su** to become **root**, when you know the **root password**.

```
laura@centos7:~$ su root        // or just su
Password:                   // normal, NO response during input!!!
root@centos7:/home/laura#
```

1.8. su as root

You need to know the password of the user you want to substitute to, unless your are logged in as **root**. The **root** user can become any existing user without knowing that user's password.

```
root@centos7:~# id
uid=0(root) gid=0(root)
groups=0(root)
root@centos7:~# su -
valentina
valentina@centos7:~$
```

1.9. su - $username

By default, the **su** command maintains the same shell environment. To become another user and also get the target user's environment, issue the **su -** command followed by the target username.

```
root@centos7:~#
su laura
laura@centos7:/r
oot$ exit exit
root@centos7:~# su - laura
laura@centos7:~$ pwd
/home/laura
```

1.10. su -

When no username is provided to **su** or **su -**, the command will assume **root** is the target.

```
tania@centos
7:~$ su -
Password:
root@centos7
:~#
```

1.11. run a program as another user

The sudo program allows a user to start a program with the credentials of another user. Before this works, the system administrator has to set up the **/etc/sudoers** file. This can be useful to delegate administrative tasks to another user (without giving the root password). Editing the **sudoers** is out of our scope

The screenshot below shows the usage of **sudo**. User **paul** received the right to run **useradd** with the credentials of **root**. This allows **paul** to create new users on the system without becoming **root** and without knowing the **root password**.

First the command fails for **paul**.

```
user@centos7:~$ /usr/sbin/useradd -m valentina
useradd: Permission denied.
useradd: cannot lock /etc/passwd; try again later.
```

But with **sudo** it works.

```
user@centos7:~$ sudo /usr/sbin/useradd -m valentina
[sudo] password for paul:
user@centos7:~$
```

1.12. sudo su -

On some Linux systems like Ubuntu and Xubuntu, the **root** user does not have a password set. This means that it is not possible to login as **root** (extra security). To perform tasks as **root**, the first user is given all **sudo rights** via the **/etc/sudoers**. In fact all users that are members of the admin group can use sudo to run all commands as root.

```
root@centos7:~# grep admin /etc/sudoers
# Members of the admin group may gain root
privileges
%admin
ALL=(ALL)
ALL
```

The end result of this is that the user can type **sudo su -** and become root without having to enter the root password. The sudo command does require you to enter your own password. Thus the password prompt in the screenshot below is for sudo, not for su.

```
user@centos7:~$ sudo su -
Password:
root@centos7:~#
```

To allow users of group “sysadmin” to run sudo commands as root, use command “visudo” to edit the following lines as shown.

```
root@centos7:~# visudo
# Members of the admin group may gain root
privileges
##%admin  ALL=(ALL) ALL
%sysadmin ALL=(ALL) ALL
```