FPT Fpt University **FPT UNIVERSITY**
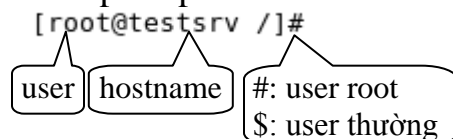
Lab 2 for Operating Systems

Learning outcome

Upon successful completion of this lab, you will be able
- How to use command line in Fedora
- To study some useful command in Fedora
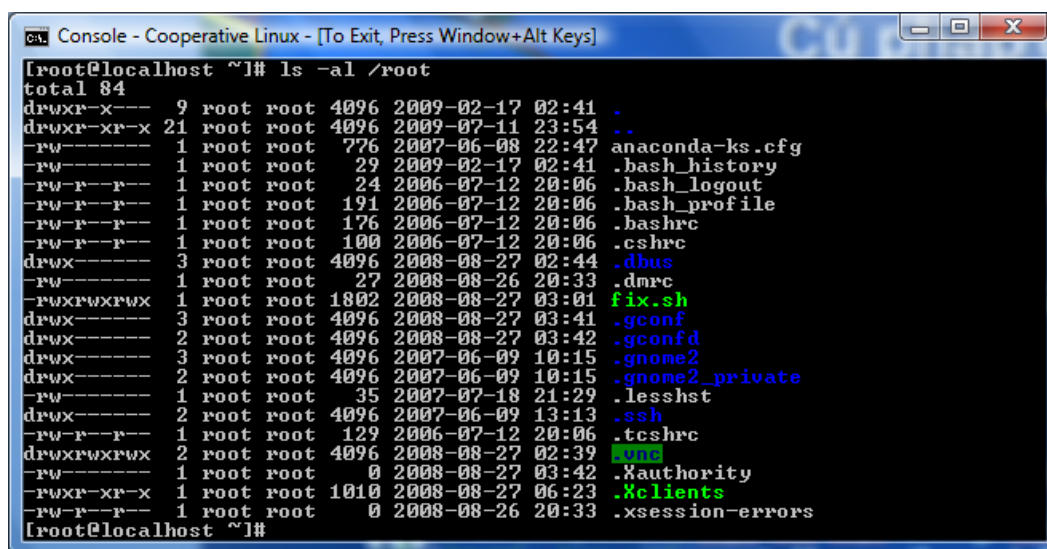- To manage file in Fedora

Using command line in Linux (shell script)
- Command prompt structure

[root@testsrv /]#

user | hostname | #: user root $: user thường

- Command line syntax

<command> [option] [arguments]

   o command: command calls the system executing required task
   o option: specifies the appropriate task
   o arguments: the location that the command is executed
   o Ex: ls –al /root

- To learn how to use the any command, the man command is used as **man ls**

- Execute the following script command and write the functional command with their parameters
    - su
    - env
    - mkdir, cp, mv, rmdir, ln, cat, rm
    - chown, chgrp, chmod
    - find
    - ds, df
    - ps, top, kill, jobs

File management

- Create a directory: mkdir
    - Create the following directory tree:

/ (root directory)
```
---hdh
        |--- unix
        |            |--- linux
        |            |--- freebsd
        |            |--- openbsd
        |
        |--- windows
                    |--- 98
                    |--- 2000
                    |--- 2003
```

```
[root@testsrv /]# mkdir /hdh
[root@testsrv /]# mkdir /hdh/unix
[root@testsrv /]# mkdir /hdh/unix/linux
[root@testsrv /]# mkdir /hdh/unix/freebsd
[root@testsrv /]# mkdir /hdh/unix/openbsd
[root@testsrv /]# mkdir /hdh/windows
[root@testsrv /]# mkdir /hdh/windows/98
[root@testsrv /]# mkdir /hdh/windows/2000
[root@testsrv /]# mkdir /hdh/windows/2003
```

- View the directory or file: ls or ll
    - View the hdh directory:
```
[root@testsrv /]# ls -l /hdh
total 16
drwxr-xr-x 5 root root 4096 Jan 27 08:16 unix
drwxr-xr-x 5 root root 4096 Jan 27 08:16 windows
```
    - View the unix directory:
```
[root@testsrv /]# ls -l /hdh/unix/
total 24
drwxr-xr-x 2 root root 4096 Jan 27 08:16 freebsd
drwxr-xr-x 2 root root 4096 Jan 27 08:15 linux
drwxr-xr-x 2 root root 4096 Jan 27 08:16 openbsd
```

- View the windows directory:

```
[root@testsrv /]# ls -l /hdh/windows
total 24
drwxr-xr-x 2 root root 4096 Jan 27 08:16 2000
drwxr-xr-x 2 root root 4096 Jan 27 08:16 2003
drwxr-xr-x 2 root root 4096 Jan 27 08:16 98
```

- Create a file: there are many ways to create a file
  - Create the file with name thoca.txt with contents "Cong cha nhu nui thai son" located at 98 directory:

```
[root@testsrv /]# echo "Cong cha nhu nui thai son" > /hdh/windows/98/thoca.txt
```

  - Adding the "Nghia me nhu nuoc trng nguon chay ra" sentence into thoca.txt:

```
[root@testsrv /]# echo "Nghia me nhu nuoc trong nguon chay ra" >> /hdh/windows/98/thoca.txt
```

  - Create the empty file:

```
[root@testsrv /]# touch /text1.txt
```

- View the file content: using any command as cat, more,less, tail,…
  - View the thoca.txt file:

```
[root@testsrv /]# cat /hdh/windows/98/thoca.txt
Cong cha nhu nui thai son
Nghia me nhu nuoc trong nguon chay ra
```

  - View the /etc/passwd and /etc/group file:

```
[root@testsrv /]# cat /etc/passwd /etc/group
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
……………..
```

- Copy a file/ directory: cp
  - Copy the thoca.txt file to the linux directory:

```
[root@testsrv /]# cp /hdh/windows/98/thoca.txt /hdh/unix/linux/
```

  - Copy the windows directory to linux directory:

```
[root@testsrv /]# cp -R /hdh/windows /hdh/unix/linux/
```

  - View the linux directory:

```
[root@testsrv /]# ls -l /hdh/unix/linux/
total 16
-rw-r--r-- 1 root root   64 Jan 27 08:42 thoca.txt
drwxr-xr-x 5 root root 4096 Jan 27 08:43 windows
```

  Notes: The "?" or "" character can be used to wild character in copying:*

```
[root@testsrv /]# cp /var/log/mail* /maillog/
```

- Move objects: mv
  - Move the thoca.txt file in the linux library to the openbsd library:

```
[root@testsrv /]# mv /hdh/unix/linux/thoca.txt /hdh/unix/openbsd/
```

o Move the windows directory to penbsd directory:

```
[root@testsrv /]# mv  /hdh/unix/linux/windows/ /hdh/unix/openbsd/
```

- Rename
  o Rename the windows directory in the openbsd directory to wins:
  ```
  [root@testsrv /]# mv /hdh/unix/openbsd/windows/ /hdh/unix/openbsd/wins
  ```
  o View the openbsd directory:
  ```
  [root@testsrv /]# ls -l /hdh/unix/openbsd/
  total 16
  -rw-r--r-- 1 root root   64 Jan 27 08:42 thoca.txt
  drwxr-xr-x 5 root root 4096 Jan 27 08:43 wins
  ```
  o Copy the thoca.txt directory in the openbsd directory to the freebsd directory and rename to baitho.doc
  ```
  [root@testsrv /]# cp /hdh/unix/openbsd/thoca.txt /hdh/unix/freebsd/baitho.doc
  ```
  o View the baitho.doc file:
  ```
  [root@testsrv /]# more /hdh/unix/freebsd/baitho.doc
  Cong cha nhu nui thai son
  Nghia me nhu nuoc trong nguon chay ra
  ```

- Delete a file: rm
  o Delete the thoca.txt file in openbsd directory:
  ```
  [root@testsrv /]# rm /hdh/unix/openbsd/thoca.txt
  rm: remove regular file `/hdh/unix/openbsd/thoca.txt'? y
  ```
  If wanting to delete without asking before, the option (–f) is used
  ```
  [root@testsrv /]# rm -f /hdh/unix/freebsd/baitho.doc
  ```

  o To delete the directory, the option (-rf) is used
  ```
  [root@testsrv /]# rm -rf /hdh/unix/openbsd/wins/
  ```

- Delete the empty directory: rmdir
  o Delete the 2000 directory:
  ```
  [root@testsrv /]# rmdir /hdh/windows/2000/
  ```

- Change to the directory: cd
  o Change the current directory to the 2003 directory:
  ```
  [root@testsrv /]# cd /hdh/windows/2003/
  [root@testsrv 2003]#
  ```
  o Change the current directory to sub directory: cd ..
  ```
  [root@testsrv 2003]# cd ..
  [root@testsrv windows]#
  ```
  o Change to the root directory: cd /
  ```
  [root@testsrv windows]# cd /
  [root@testsrv /]#
  ```

- View the current directory: pwd

```
[root@testsrv /]# pwd
/
[root@testsrv /]# cd /hdh/windows/2003/
[root@testsrv 2003]# pwd
/hdh/windows/2003
```

- Searching
    - Search the thoca.txt file:
      ```
      [root@testsrv 2003]# find /hdh -name thoca.txt
      /hdh/windows/98/thoca.txt
      ```
      Using the wild character
      ```
      [root@testsrv 2003]# find /hdh -name thoca.*
      /hdh/windows/98/thoca.txt
      ```
      The other options can be used as: -type, -user, -atime, -amin, -newer,…
    - Search the "Cong cha nhu nui thai son" sentences in the thoca.txt file
      ```
      [root@testsrv 2003]# grep "Cong cha nhu nui thai son" /hdh/windows/98/thoca.txt
      Cong cha nhu nui thai son
      ```
    - Search the location, source and man page of the grep command:
      ```
      [root@testsrv 2003]# whereis grep
      grep: /bin/grep /usr/share/man/man1/grep.1.gz /usr/share/man/man1p/grep.1p.gz
      ```
    - Search the directory that contain the ls command:
      ```
      [root@testsrv 2003]# which ls
      alias ls='ls --color=tty'
              /bin/ls
      ```
- Zip or unzip:
    - Using gzip/gunzip:
        - Zip the thoca.txt file:
          ```
          [root@testsrv 2003]# gzip /hdh/windows/98/thoca.txt
          [root@testsrv 2003]# ls -l /hdh/windows/98/
          total 8
          -rw-r--r-- 1 root root 85 Jan 27 08:34 thoca.txt.gz
          ```
        - Unzip:
          ```
          [root@testsrv 2003]# gunzip /hdh/windows/98/thoca.txt.gz
          [root@testsrv 2003]# ls -l /hdh/windows/98/
          total 8
          -rw-r--r-- 1 root root 64 Jan 27 08:34 thoca.txt
          ```
    - Using tar
        - Zip the thoca.txt file to the .tar extension:
          ```
          [root@testsrv 98]# tar -cvf thoca.tar thoca.txt
          thoca.txt
          ```
          Checking
          ```
          [root@testsrv 98]# ls -l
          total 32
          drwxr-xr-x 2 root root  4096 Jan 27 09:49 backup
          -rw-r--r-- 1 root root 10240 Jan 27 09:50 thoca.tar
          -rw-r--r-- 1 root root    64 Jan 27 08:34 thoca.txt
          ```

▪ Zip the thoca.txt file to the .tar.gz extension:

```
[root@testsrv 98]# tar -zcvf thoca.tar.gz thoca.txt
thoca.txt
```

Checking

```
[root@testsrv 98]# ls -l
total 40
drwxr-xr-x 2 root root  4096 Jan 27 09:49 backup
-rw-r--r-- 1 root root 10240 Jan 27 09:50 thoca.tar
-rw-r--r-- 1 root root   167 Jan 27 09:50 thoca.tar.gz
-rw-r--r-- 1 root root    64 Jan 27 08:34 thoca.txt
```

▪ Unzip .tar

```
[root@testsrv 98]# tar -xvf thoca.tar -C /hdh/windows/98/backup/
thoca.txt
```

Checking

```
[root@testsrv 98]# ls -l /hdh/windows/98/backup/
total 8
-rw-r--r-- 1 root root 64 Jan 27 08:34 thoca.txt
```

▪ Unzip .tar.gz

```
[root@testsrv 98]# tar -zxvf thoca.tar.gz -C /hdh/windows/98/backup/
thoca.txt
```

Submission

Upload the word or pdf file to cms describes some questions as

- Present the content of manipulating of some command **(including syntax, what does it for?, capture two of examples for each command)** as
    o man
    o bg, fg
    o who
    o chown, chgrp, chmod
    o date
    o su, top, kill, jobs
- Capture the terminal screen using **the "grep "nhu nui" thoca.txt"** and give your explanation the result. (**Notes: thoca.txt is the file in above tutorial**)
- Submit the C/C++ files and objects files as the below content then capture the result of the program and explaination your result that you get

```c
#include<stdio.h>

int main() {
        int ret;

        ret = system("man ls");
        return ret;
}
```

Requirement

All the capture must be combination with full the windows **including your accounts on the windows and the Linux OS** (**if it is not, you will be taken 0 mark**). Should be use the capture in windows with jpg format to reduce the file size with your submitting

END