Basic Linux Commands (Part 2)

Due date

- End of the day of Week 5 lab class

Evaluation

- 3% of final grade.

Submission

Submit completed lab using **Turnitin Assignment** (make sure you choose the right **section number**) on BlackBoard before due date.

Materials

1. Student laptop computer
2. Ubuntu 14.04.5 installed in VMWare Workstation

Procedure

Command touch

The **touch** command updates different time stamps. As a side benefit it is used to create empty files.

Exercise #1: Creating empty files & updating the modification time

1) user@localhost :~$ **`touch clock`**

2) user@localhost :~$ **`ls -l clock`**

- Record the time stamp:

  _____

3) user@localhost :~$ **`sleep 61`**

Wait for one minute.

4) user@localhost :~$ **`touch clock`**

5) user@localhost :~$ **`ls -l clock`**

- Record the time stamp:

  _____

Command: cp

The **cp** command makes a copy of an existing set of files or directories into another location of the system.

Exercise #2: Copying files to a directory

1) user@localhost :~$ **`mkdir lab3ex`**

2) user@localhost :~$ **`cd lab3ex`**

3) user@localhost :~/lab3ex$ **`touch f1 f2 f3`**

4) user@localhost :~/lab3ex$ **`ls`**

- What is the output of that command?

  _____

5) user@localhost :~/lab3ex$ **`mkdir lab3`**

6) user@localhost :~/lab3ex$ **`ls`**

- What is the output of that command?

  _____

7) user@localhost :~/lab3ex$ **`cp f1 f2 f3 lab3`**

8) user@localhost :~/lab3ex$ **`ls lab3`**

- What is the output of that command?

  _____

9) user@localhost :~/lab3ex$ **`mkdir coffee`**

10) user@localhost :~/lab3ex$ **`cd coffee`**

11) user@localhost :~/lab3ex/coffee$ **`touch cream sugar`**

12) user@localhost :~/lab3ex/coffee$ **`cd ..`**

13) user@localhost :~/lab3ex$ **`cp coffee/cream coffee/sugar lab3`**

14) user@localhost :~/lab3ex$ **`ls lab3`**

- What is the output of the command?

  _____

Exercise #3: Copying directories to a directory (-r option)

1) user@localhost :~/lab3ex$ **`mkdir dir1 dir2 dir3`**

- Record the command that you use to verify that the directories have been created? _____

2) user@localhost :~/lab3ex$ **`cp dir1 dir2 dir3 lab3`**

- Record one of the messages displayed on the screen:

  _____

3) user@localhost :~/lab3ex$ **`ls lab3`**

- Have the directories been copied? _____

4) user@localhost :~/lab3ex$ **`cp -r dir1 dir2 dir3 lab3`**

5) user@localhost :~/lab3ex$ **`ls lab3`**

- Have the directories been copied? _____

6) user@localhost:~/lab3ex$ **`sudo apt-get install tree`**

- *(hint: the above command installs "tree" command which is not included in the default Ubuntu installation)*

7) user@localhost:~/lab3ex$ **`tree`**

Exercise #4: Copying directories to a directory , cont'd (-r & --parents option)

1) user@localhost :~/lab3ex$ **`mkdir -p parent/child`**

2) user@localhost :~/lab3ex$ **`cd parent ; touch f1 ; cd ..`**

3) user@localhost :~/lab3ex$ **`cp -r --parents parent/child lab3`**

4) user@localhost :~/lab3ex$ **`tree lab3`**

What is the output of the command?

_____

Command: mv

The **mv**, for Move File or Directory, command moves files and directories to a different directory. It is also used to rename files within the same directory.

Exercise #5: Renaming files

- user@localhost :~/lab3ex$ **`cd lab3`**
- user@localhost :~/lab3ex/lab3$ **`mv f1 m1`**
- user@localhost :~/lab3ex/lab3$ **`ls`**
    - Has the file been renamed from **f1** to **m1**?

_____

Exercise #6: Moving files

1) user@localhost :~/lab3ex/lab3$ **`touch red green blue`**
2) user@localhost :~/lab3ex/lab3$ **`mkdir colors`**
3) user@localhost :~/lab3ex/lab3$ **`mv red green blue`**

4) Record the error message:

_____

5) user@localhost :~/lab3ex/lab3$ **`mv red green blue colors`**

6) user@localhost :~/lab3ex/lab3$ **`ls`**
   - Are the files red, green and blue still in the current directory?

_____

7) user@localhost :~/lab3ex/lab3$ **`ls colors`**
   - Have the files been moved?

_____

Exercise #7: Moving directories

1) user@localhost :~/lab3ex/lab3$ **`mkdir toddlers children sandbox`**
2) user@localhost :~/lab3ex/lab3$ **`mv toddlers children sandbox`**
   - Are the toddlers and children in the **sandbox**?

_____

3) user@localhost :~/lab3ex/lab3$ **`cd ..`**

Command: rm

The **rm** command allows you to delete files or directories (with option **–r**). It is both a dangerous and useful command because of its flexibility.

Exercise #8: Deleting files

1) user@localhost :~/lab3ex$ **`cd lab3/sandbox`**
2) user@localhost :~/lab3ex/lab3/sandbox$ **`touch child1 child2 child3`**
3) user@localhost :~/lab3ex/lab3/sandbox$ **`ls`**
    - Are child1,child2 and child3 in the sandbox? _____
4) user@localhost :~/lab3ex/lab3/sandbox$ **`rm child1 child2 child3`**
5) user@localhost :~/lab3ex/lab3/sandbox$ **`ls`**
    - Are child1,child2 and child3 still in the sandbox? _____
6) user@localhost :~/lab3ex/lab3/sandbox$ **`cd ..`**
7) user@localhost :~/lab3ex/lab3$ **`rmdir sandbox`**
    - Record the error message

      _____
8) user@localhost :~/lab3ex/lab3$ **`cd ..`**

Exercise #9: Deleting directories

1) user@localhost :~/lab3ex$ **`rmdir lab3`**
    - Record the error message:

      _____
2) user@localhost :~/lab3ex$ **`rm -r lab3`**
    - Has the directory been deleted?

Command: cat

cat is an utility to view, create, or append to small files.

Exercise #10: Viewing files with cat

1) user@localhost :~/lab3ex$ **`cd ; cat /etc/issue`**
2) user@localhost :~$ **`cat  /etc/fstab`**
3) user@localhost :~$ **`cat /etc/issue /etc/fstab`**
4) user@localhost :~$ **`cat .bashrc | more`**

Exercise #11: Clear screen with command clear

- user@localhost :~$ **`clear`**

Output redirection

Exercise #12: Redirect output to a file

- user@localhost:~$ **`ls –al ~/ > lsout`**
- user@localhost:~$ **`cat lsout`**
- user@localhost:~$ **`ls –al / > lsout`**
- user@localhost:~$ **`cat lsout`**

  Is "**lsout**" overwritten? _____

- user@localhost:~/ $ **`ls –a /etc >> lsout`**
- user@localhost:~/ $ **`cat  lsout | more`**

  Is "**lsout**" overwritten? _____

Exercise #13: Not to overwrite a file

- user@localhost:~$ **`set –C`**

- user@localhost:~$ **`ls /home > lsout`**

  Record the message: _____

Review exercise

Assume that the commands listed below are executed in the **user's home directory**.

1. **`cd ; mkdir -p ~/lab3rv/linux`**
2. **`cd lab3rv/linux`**
3. **`touch ubuntu fedora arch`**
4. **`cp ubuntu fedora arch ~/lab3rv`**
5. **`cp ubuntu mint`**
6. **`mv fedora arch ../`**
7. **`mv ubuntu debian`**
8. **`mkdir ~/lab3rv/android ; cd ~/lab3rv/android`**
9. **`touch lollipop nougat`**
10. **`cp –r ~/lab3rv/android ~/lab3rv/linux`**
11. **`cd  ../linux`**
12. **`rm –r ~/lab3rv/android`**

Answer the following questions after executing the 12 commands above:

1. How many **directories** are created during the review exercise? (Including copied and deleted directories) _____

   List them using absolute paths:

2. How many **regular files** remain in the directory ~/**lab3rv**? **_____**
(Do not include files in sub-directories).
List them using absolute paths:

3. How many **regular files** are left in the directory **~/lab3rv/linux**? **_____**
(Do not include files in sub-directories).
List them using relative paths (Assume the current directory is the user's home directory):

4. What is the **current** directory at the end of the review exercise?

5. How many directories are deleted successfully? **_____**
List them using absolute paths: