

Linux Induction Tutorial

Giuseppe Mallia

g.mallia@imperial.ac.uk

Imperial College London - Chemistry Department

2019/11/27

whoami and hostname

Type the following coomands:

- whoami
- hostname

- `cd /etc`
- `cd /tmp`
- `cd /bin`

After each of the commands above, try "`cd`", where do you go?

Try "`cd -`"

Type "`history`"

- 1 `cd /usr/local/games`
- 2 `cd`
- 3 `cd /usr`
- 4 `cd local`
- 5 `cd games`
- 6 `cd`
- 7 `cd /usr ; cd local ; cd games`

What is the differences between 1 and 3-5 and 7?

Relative vs Absolute path

- `cd /usr`
- `cd local`
- `cd games`

vs

- `cd /usr/local/games`

Type "`pwd`", do you get the relative or the absolute path?

Enter in `/lib64`, by typing `"cd /lib64"`

- `ls`
- `ls -a`
- `ls -l`
- `ls -t`
- `ls -rt`
- `ls -1`

Type `"cd"` and repeat the commands
above

permissions

```
ls -al
total 420
drwxr-xr-x.  4 gmallia chstaff  4096 Oct 25 08:49 .
drwxr-xr-x. 29 root      root    4096 May 29  2018 ..
-rw-----.  1 gmallia chstaff 12242 Oct 25 08:52 .bash_history
-rw-r--r--.  1 gmallia chstaff   18 Jul  3  2014 .bash_logout
-rw-r--r--.  1 gmallia chstaff  176 Jul  3  2014 .bash_profile
-rw-r--r--.  1 gmallia chstaff  124 Jul  3  2014 .bashrc
drwx-----.  2 gmallia chstaff  4096 Jul  3  2014 .ssh
drwxr-xr-x.  2 gmallia chstaff  4096 Sep 13  2014 .vim
-rw-----.  1 gmallia chmsc   10413 Mar 12  2018 .viminfo
```

Execute the following commands:

- 1 echo "Mamma Mia" > myfile
- 2 cat myfile
- 3 ls -l myfile
- 4 chmod u-w myfile
- 5 ls -l myfile
- 6 echo "Mamma Mia" > myfile

permissions

Execute the following commands:

1 `cd /home`

2 `echo "Mamma Mia" > myfile`

Why do you get an error message?

standard output, standard error, standard input

Execute the following commands:

```
touch my_empty_file
ls my_empty_file
ls my_empty_file > list
cat list
ls my_empty_file1
ls my_empty_file1 >& list
cat list
```

Execute the following commands:

```
date > date.out
cat date.out list > date_and_list.out
date > date1.out
cat date1.out >> date_and_list.out
cat date1.out datex.out >> date_and_list.out 2>&1
```


cat

```
date > date.out
```

```
cat date.out
```

```
cat <<EOF    > file1
```

```
part 1
```

```
EOF
```

```
cat <<EOF    > file2
```

```
part 2
```

```
part 2b
```

```
EOF
```

```
cat file1 file2 > file12
```

```
cat > file3 <<EOF
```

```
part 3
```

```
<<EOF
```

```
cat file3 >> file12
```

echo

```
echo "Mamma mia" > my_file
```

```
echo "Hello World!"
```

```
echo $USER  
echo "$USER"  
echo '$USER'
```

```
echo $HOME  
echo ~
```

```
echo *  
echo .*
```

what is the difference between the last two commands?

history

Try the command "history"

Save all your commands into a file called history.log

man

Linux
Induction
Tutorial

G. Mallia

```
man history
```

```
man pwd
```

```
man cat
```

Execute the following commands:

```
cp /etc/fstab ~/myfstab
```

```
mkdir ~/myfolder
```

```
cp /etc/fstab ~/myfolder
```

```
mkdir ~/myfolder2
```

```
cd ~/myfolder2
```

```
cp /etc/fstab .
```

```
cp -r ~/myfolder2 ~/myfolder2.copy
```

```
cp -rp ~/myfolder2 ~/myfolder2.copy2
```

rm vs rmdir

Execute the following commands
(try to understand the error message if any):

```
rm /etc/fstab ~/myfstab
```

```
rmdir ~/myfolder
```

```
rm -r ~/myfolder2.copy
```

```
mkdir myemptydir
```

```
rmdir myemptydir
```

alias and ~/.alias

Execute the following commands

```
alias rm='rm -i'  
alias h=history
```

Open a new terminal, are those alias available?

Execute

```
ls -l ~/.alias  
echo "alias rm='rm -i'" >> ~/.alias  
echo "alias h=history" >> ~/.alias
```

Open a new terminal, are those alias available?

vi vs vim

- Command Mode
- Text Mode
- Visual Mode
- Visual Block Mode

Replace

Search

Substitute

diff vs vimdiff

```
cat <<EOF    > file1
this is a file
part 1
EOF
```

```
cat <<EOF    > file2
this is a file
part 2
part 2b
EOF
```

```
diff file1 file2
```

```
diff -y file1 file2
```

sed

```
cat <<EOF    > file1
this is a file
part 1
EOF
```

```
cat <<EOF    > file2
this is a file
part 2
part 2b
EOF
```

```
sed -e 's/part/PART/g' file1 > FILE1
sed -i 's/part/PART/g' file2
```

```
sed -i 's/this is a file/this is a FILE/' file1 file2
```

awk

```
cat <<EOF    > file1
this is a file
part 1
EOF
```

```
cat <<EOF    > file2
this is a file
part 2
part 2b
EOF
```

```
awk '{if ($0 ~ "part"){print(FILENAME,"YES")}}' file?
```

seq

```
seq 1 10
```

```
seq 1 20 2
```

```
seq 1 2 20
```

```
seq 10 -1 0
```

Use seq to print the following:

20

18

16

14

12

10

export

```
export A="Hello"
```

```
echo $A
```

Type "env"

Execute

```
if [ -f ~/.alias ]; then
    echo "File found"
fi
```

```
if [ -f ~/.alias ]; then
    echo "File found"
else
    echo "File not found"
fi
```

for

Execute

```
for my_var in *  
do  
    echo $my_var  
done
```

```
for i in `seq 1 10`  
do  
    export FILE="file"$i  
    echo $FILE  
done
```

THANK YOU!!!