

# ASSIGNMENT

**SUBJECT: NETWORKING AND SYSTEM ADMINISTRATION  
LAB**

**TOPIC: BASIC LINUX COMMANDS PART 4**

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## 1 wc

- wc stands for word count.
- Used for counting purpose.
- It is used to find out number of lines, word count, byte and characters count in the files specified in the file arguments.

```
onworks@onworks-Standard-PC-i440FX-PIIX-1996:~$ cat >> book.txt
ammu
anu
appu
^Z
[1]+  Stopped                  cat >> book.txt
onworks@onworks-Standard-PC-i440FX-PIIX-1996:~$ wc book.txt
 3  3 14 book.txt
onworks@onworks-Standard-PC-i440FX-PIIX-1996:~$
```

## 2. tar

- The Linux 'tar' stands for tape archive, is used to create Archive and extract the Archive files
- Linux tar command to create compressed or uncompressed Archive files
- Options:
  - c : Creates Archive –
  - x : Extract the archive
  - f : creates archive with given filename
  - t : displays or lists files in archived file
  - u : archives and adds to an existing archive file
  - v : Displays Verbose Information
  - A : Concatenates the archive files
  - z : zip, tells tar command that creates tar file using gzip
  - j : filter archive tar file using tbzip
  - W : Verify a archive file
  - r : update or add file or directory in already existed .tar file

```
onworks@onworks-Standard-PC-i440FX-PIIX-1996:~$ tar cf archive.tar book.txt
```

```
onworks@onworks-Standard-PC-i440FX-PIIX-1996:~$ tar xvf archive.tar
book.txt
```

### 3.expr

- The expr command evaluates a given expression and displays its corresponding output. It is used for:
- Basic operations like addition, subtraction, multiplication, division, and modulus on integers.
- Evaluating regular expressions, string operations like substring, length of strings etc.
- Performing operations on variables inside a shell script

```
onworks@onworks-Standard-PC-l440FX-PIIX-1996:~$ expr 10+2
```

### 4. Redirections & Piping

- A pipe is a form of redirection to send the output of one command/program/process to another command/program/process for further processing.
- Pipe is used to combine two or more commands, the output of one command acts as input to another command, and this command's output may act as input to the next command and so on.

```
onworks@onworks-Standard-PC-l440FX-PIIX-1996:~$ ls -l | more
total 72
-rw-rw-r-- 1 onworks onworks 10240 Aug 13 16:09 archive.tar
drwxrwxr-x 2 onworks onworks 4096 Aug 13 16:05 backup
-rw-rw-r-- 1 onworks onworks 10 Aug 13 16:08 book1
-rw-rw-r-- 1 onworks onworks 15 Aug 13 16:08 book2
-rw-rw-r-- 1 onworks onworks 14 Aug 13 15:56 book.txt
drwxr-xr-x 2 onworks onworks 4096 Mai 5 2019 Desktop
drwxr-xr-x 2 onworks onworks 4096 Mai 5 2019 Documents
drwxr-xr-x 2 onworks onworks 4096 Mai 5 2019 Downloads
-rw-r--r-- 1 onworks onworks 8980 Mai 5 2019 examples.desktop
drwxr-xr-x 2 onworks onworks 4096 Mai 5 2019 Music
drwxr-xr-x 2 onworks onworks 4096 Mai 5 2019 Pictures
drwxr-xr-x 2 onworks onworks 4096 Mai 5 2019 Public
drwxr-xr-x 2 onworks onworks 4096 Mai 5 2019 Templates
drwxr-xr-x 2 onworks onworks 4096 Mai 5 2019 Videos
```

### 5. ssh

- ssh stands for "Secure Shell".
- It is a protocol used to securely connect to a remote server/system.
- ssh is secure in the sense that it transfers the data in encrypted form between the host and the client.
- It transfers inputs from the client to the host and relays back the output. ssh runs at TCP/IP port 22.

```
onworks@onworks-Standard-PC-l440FX-PIIX-1996:~$ ssh mca@192.168.6.91
```

### 6. scp

- SCP (secure copy) is a command-line utility that allows you to securely
- copy files and directories between two locations.
- With scp, you can copy a file or directory:
- From your local system to a remote system.
- From a remote system to your local system.

- Between two remote systems from your local system.
- Remote file system locations are specified in format  
[user@]host:/path      Syntax:      scp      [OPTION]      [user@]SRC\_HOST:]file1  
[user@]DEST\_HOST:]file2

```
onworks@onworks-Standard-PC-i440FX-PIIX-1996:~$ scp -pv mesg.txt mca@192.168.6.91
1
Executing: cp '-p' '--' 'mesg.txt' 'mca@192.168.6.91'
```

## 7.ssh-keygen

- ssh-keygen command to generate a public/private authentication key pair. Authentication keys allow a user to connect to a remote system without supplying a password. Keys must be generated for each user separately. If you generate key pairs as the root user, only the root can use the keys. \$ssh-keygen -t rsa

```
onworks@onworks-Standard-PC-i440FX-PIIX-1996:~$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/onworks/.ssh/id_rsa): rsa
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in rsa.
Your public key has been saved in rsa.pub.
The key fingerprint is:
SHA256:ooDHvu05q03N8xSCa3Lqd1X7U7SLSGT2Swga3XpqX0w onworks@onworks-Standard-PC-i
440FX-PIIX-1996
The key's randomart image is:
+---[RSA 2048]-----+
|
|  o . . o * .
| . = . = S + E .
| o o + = =oo o
| . = . o + +o+ .
| B.*.o o ..= .
|*+Oo+oo .. .
+----[SHA256]-----+
```

## 8. ssh-copy-id

- The ssh-copy-id command allows you to install an SSH key on a remote server's authorized keys.
- This command facilitates SSH key login, which removes the need for a password for each login, thus ensuring a password-less, automatic login process.
- \$ssh-copy-id username@remote\_host

```
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^Z
[1]+  Stopped                  cat >> book.txt
onworks@onworks-Standard-PC-i440FX-PIIX-1996:~$ wc book.txt
 3   3 14 book.txt
onworks@onworks-Standard-PC-i440FX-PIIX-1996:~$
```