

Lab Activity - 2

-Networking & System Administration Lab

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Basic Linux Commands

1. **echo** : it is used to move some data into a file.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ echo *
file1.txt file2.txt file3.txt file4.txt files

kunjuzz@kunjuzz-VirtualBox:~/Documents$ echo "My name is Anjali."
My name is Anjali.

kunjuzz@kunjuzz-VirtualBox:~/Documents$ echo -e "My \tname \tis \tAnjali."
My      name      is      Anjali.
kunjuzz@kunjuzz-VirtualBox:~/Documents$ echo -e "My \nname \nis \nAnjali."
My
name
is
Anjali.
kunjuzz@kunjuzz-VirtualBox:~/Documents$ echo -e "My \vname \vis \vAnjali."
My
      name
          is
              Anjali.
kunjuzz@kunjuzz-VirtualBox:~/Documents$ echo -n "My name is Anjali."
My name is Anjali.kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

2. **head** : used to view the first lines of any text file.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ cat > states
KERALA
TAMIL NADU
GOA
MIZORAM
ASSAM
BIHAR
ANDHRA PRADESH
GUJARAT
MANIPUR
NAGALAND
PUNJAB
SIKKIM
WEST BENGAL
UTTARAKHAND
ODISHA
MANIPUR^C
kunjuzz@kunjuzz-VirtualBox:~/Documents$ head states
KERALA
TAMIL NADU
GOA
MIZORAM
ASSAM
BIHAR
ANDHRA PRADESH
GUJARAT
MANIPUR
NAGALAND
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ head -n 3 states
KERALA
TAMIL NADU
GOA
kunjuzz@kunjuzz-VirtualBox:~/Documents$ head -v states
==> states <==
KERALA
TAMIL NADU
GOA
MIZORAM
ASSAM
BIHAR
ANDHRA PRADESH
GUJARAT
MANIPUR
NAGALAND
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

3. tail : By default , it display the last ten lines of a text file.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ tail states
BIHAR
ANDHRA PRADESH
GUJARAT
MANIPUR
NAGALAND
PUNJAB
SIKKIM
WEST BENGAL
UTTARAKHAND
ODISHA
kunjuzz@kunjuzz-VirtualBox:~/Documents$ tail -n 3 states
WEST BENGAL
UTTARAKHAND
ODISHA
kunjuzz@kunjuzz-VirtualBox:~/Documents$ tail -c 3 states
HA
kunjuzz@kunjuzz-VirtualBox:~/Documents$ tail -c 10 states
ND
ODISHA
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

4. read : read the contents of a line into a variable.

```
Anjalikunjuzz@kunjuzz-VirtualBox:~/Documents$ read -p "Enter your Name:"
Enter your Name:Anjali
kunjuzz@kunjuzz-VirtualBox:~/Documents$ echo "My name is $REPLY"
My name is Anjali
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

5. more : Like cat command, more command displays the content of a file. Only difference is that, in case of larger files, 'cat' command output will scroll off your screen while 'more' command displays output one screenful at a time.

```
kunjuzz@kunjuzz-VirtualBox:~$ more /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nolog
in
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/
nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sb
in/nologin
messagebus:x:103:106:/:/nonexistent:/usr/sbin/nologin
syslog:x:104:110:/:/home/syslog:/usr/sbin/nologin
```

6. less : It automatically adjust with the width and height of the terminal window.

```
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nolog
in
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/
nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sb
in/nologin
messagebus:x:103:106:/:/nonexistent:/usr/sbin/nologin
syslog:x:104:110:/:/home/syslog:/usr/sbin/nologin
_apt:x:105:65534:/:/nonexistent:/usr/sbin/nologin
tss:x:106:111:TPM software stack,,,:/var/lib/tpm:/bin/false
:█
```

7. cut : used for cutting out the sections from each line of files and writing the result to standard output.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ cut -b 1,3 states
KR
TM
GA
MZ
AS
BH
AD
GJ
MN
NG
PN
SK
WS
UT
OI
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

8. paste : It is used to join files horizontally by outputting lines consisting of lines from each file specified, separated by tab as delimiter, to the standard output.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ paste -d "|" states Number
KERALA|one
TAMIL NADU|two
GOA|three
MIZORAM|four
ASSAM|five
BIHAR|six
ANDHRA PRADESH|seven
GUJARAT|eight
MANIPUR|nine
NAGALAND|ten
PUNJAB|
SIKKIM|
WEST BENGAL|
UTTARAKHAND|
ODISHA|

kunjuzz@kunjuzz-VirtualBox:~/Documents$ paste -s states Number
KERALA TAMIL NADU GOA MIZORAM ASSAM BIHAR ANDHRA PRADESH GUJARAT
MANIPUR NAGALAND PUNJAB SIKKIM WEST BENGAL UTTARAKHAND ODISHA
one two three four five six seven eight nine ten
kunjuzz@kunjuzz-VirtualBox:~/Documents$ paste -d -s states Number
KERALA-one
TAMIL NADU-two
GOA-three
MIZORAM-four
ASSAM-five
BIHAR-six
ANDHRA PRADESH-seven
GUJARAT-eight
MANIPUR-nine
NAGALAND-ten
PUNJAB-
SIKKIM-
WEST BENGAL-
UTTARAKHAND-
ODISHA-
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

9. uname : it will print detailed information about your Linux system like the machine name, operating system, kernel, and so on.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ uname
Linux
kunjuzz@kunjuzz-VirtualBox:~/Documents$ uname -o
GNU/Linux
kunjuzz@kunjuzz-VirtualBox:~/Documents$ uname -r
5.11.0-18-generic
kunjuzz@kunjuzz-VirtualBox:~/Documents$ uname -n
kunjuzz-VirtualBox
kunjuzz@kunjuzz-VirtualBox:~/Documents$ uname -i
x86_64
kunjuzz@kunjuzz-VirtualBox:~/Documents$ uname -a
Linux kunjuzz-VirtualBox 5.11.0-18-generic #19-Ubuntu SMP Fri May 7 14:22:03 UT
C 2021 x86_64 x86_64 x86_64 GNU/Linux
kunjuzz@kunjuzz-VirtualBox:~/Documents$ uname -v
#19-Ubuntu SMP Fri May 7 14:22:03 UTC 2021
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

10. cp : used to copy files from the current directory to a different directory.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ cat file.txt
KERALA
TAMIL NADU
GOA
MIZORAM
ASSAM
BIHAR
ANDHRA PRADESH
GUJARAT
MANIPUR
NAGALAND
PUNJAB
SIKKIM
WEST BENGAL
UTTARAKHAND
ODISHA
kunjuzz@kunjuzz-VirtualBox:~/Documents$ cp Number file.txt
kunjuzz@kunjuzz-VirtualBox:~/Documents$ cat file.txt
one
two
three
four
five
six
seven
eight
nine
ten
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

11. **mv** : used to move existing file or directory from one location to another. It is also used to rename a file or directory.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ ls
file1.txt file2.txt file3.txt file4.txt files file.txt Number states
kunjuzz@kunjuzz-VirtualBox:~/Documents$ mv file2.txt Number
kunjuzz@kunjuzz-VirtualBox:~/Documents$ cat Number
Hello World
I am Anjali C Abraham
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

12. **locate** : it is a background process and used to search a file by name in the database .

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ locate states
Command 'locate' not found, but can be installed with:
sudo apt install mlocate # version 0.26-5ubuntu1, or
sudo apt install plocate # version 1.1.7-1
```

13. **find** : find command searches in the file system.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ find -name "file1.txt"
./file1.txt
kunjuzz@kunjuzz-VirtualBox:~/Documents$ find -type d
.
./files
```

14. **grep** : stands for **global regular expression print**. grep command filters the content of a file which makes our search easy.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ cat file2.txt
Hello World
I am Anjali C Abraham
kunjuzz@kunjuzz-VirtualBox:~/Documents$ grep -c Anjali file2.txt
1
kunjuzz@kunjuzz-VirtualBox:~/Documents$ grep -c A file2.txt
1
kunjuzz@kunjuzz-VirtualBox:~/Documents$ grep -i A file2.txt
I am Anjali C Abraham
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

15. **df** : used to display the disk space used in the file system.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ df
Filesystem      1K-blocks    Used Available Use% Mounted on
tmpfs            99556      1388     98168    2% /run
/dev/sda3       9735476 7593360  1627864   83% /
tmpfs           497772      0    497772    0% /dev/shm
tmpfs           5120        4      5116    1% /run/lock
tmpfs           4096        0      4096    0% /sys/fs/cgroup
/dev/sda2       524252     5340   518912    2% /boot/efi
tmpfs           99552      112     99440    1% /run/user/1000
kunjuzz@kunjuzz-VirtualBox:~/Documents$ df -m
Filesystem      1M-blocks    Used Available Use% Mounted on
tmpfs            98         2         96    2% /run
/dev/sda3       9508      7416     1590   83% /
tmpfs           487        0      487    0% /dev/shm
tmpfs            5         1         5    1% /run/lock
tmpfs            4         0         4    0% /sys/fs/cgroup
/dev/sda2       512        6      507    2% /boot/efi
tmpfs            98         1         98    1% /run/user/1000
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```


16. **du** : stands for **Disk Usage**. It is used to check the information of disk usage of files and directories on a system and display a list of all the files along with their respective sizes. By default, size given is in kilobytes.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ du
4      ./files
28     .
kunjuzz@kunjuzz-VirtualBox:~/Documents$ du -h
4.0K   ./files
28K    .
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

17. **useradd** : used to add user accounts to your system.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ useradd anjali
useradd: Permission denied.
useradd: cannot lock /etc/passwd; try again later.
kunjuzz@kunjuzz-VirtualBox:~/Documents$ sudo useradd anjali
[sudo] password for kunjuzz:
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

18. **userdel** : used to delete a user account and related files.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ sudo userdel anjali
kunjuzz@kunjuzz-VirtualBox:~/Documents$ tail /etc/passwd
sssd:x:119:124:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin
saned:x:120:126:./var/lib/saned:/usr/sbin/nologin
colord:x:121:127:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
geoclue:x:122:128:./var/lib/geoclue:/usr/sbin/nologin
pulse:x:123:129:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
hplip:x:124:7:HPLIP system user,,,:/run/hplip:/bin/false
gnome-initial-setup:x:125:65534:./run/gnome-initial-setup:/bin/false
gdm:x:126:131:Gnome Display Manager:/var/lib/gdm3:/bin/false
kunjuzz:x:1000:1000:Kunjuzz,,,:/home/kunjuzz:/bin/bash
systemd-coredump:x:999:999:systemd Core Dumper:./usr/sbin/nologin
```

19. **sudo** : command allows you to run programs with the security privileges of another user .

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ sudo useradd anjali
[sudo] password for kunjuzz:
kunjuzz@kunjuzz-VirtualBox:~/Documents$
```

20. **passwd** : changes passwords for user accounts.

```
kunjuzz@kunjuzz-VirtualBox:~/Documents$ passwd
Changing password for kunjuzz.
Current password:
New password:
Retype new password:
passwd: password updated successfully
```