**Working with a Vi Editor:**

Tanu Raghuwanshi

1: Create a file using vi. Enter the following text:

A network is a group of computers that can communicate with each other, share

resources, and access remote hosts or other networks. Netware is a computer network

operating system designed to connect, manage, and maintain a network and its

services. Some of the network services are Netware Directory Services (NDS), file

system, printing and security.

Soln: [admin@hostname01 ~]$ vi network\_services.txt

[admin@hostname01 ~]$ cat network\_services.txt

A network is a group of computers that can communicate with each other, share

resources, and access remote hosts or other networks. Netware is a computer network

operating system designed to connect, manage, and maintain a network and its

services. Some of the network services are Netware Directory Services (NDS), file

system, printing and security.

1. Change the word “Netware” in the second line to “Novell Netware”.

Slon: [admin@hostname01 ~]$ more network\_services.txt

A network is a group of computers that can communicate with each other, share

resources, and access remote hosts or other networks. Novell Netware is a computer network operating system designed to connect, manage, and maintain a network and its

services. Some of the network services are Novell Netware Directory Services (NDS), file

system, printing and security.

. use: %s.Netware/Novell Netware/g In shell

b. Insert the text “(such as hard disks and printers)” after “share resources” in the

first line.

Soln: [admin@hostname01 ~]$ cat network\_services.txt

A network is a group of computers that can communicate with each other, share

resources such as hard disks and printers, and access remote hosts or other networks. Novell Netware is a computer network

operating system designed to connect, manage, and maintain a network and its

services. Some of the network services are Novell Netware Directory Services (NDS), file

system, printing and security.Managing NDS is a fundamental administrator role because NDS provides a single

point for accessing and managing most network resources.

Use A command after share resoueces.

c. Append the following text to the file:

“Managing NDS is a fundamental administrator role because NDS provides a single

point for accessing and managing most network resources.”

[admin@hostname01 ~]$ cat network\_services.txt

soln: A network is a group of computers that can communicate with each other, share

resources such as hard disks and printers, and access remote hosts or other networks. Novell Netware is a computer network

operating system designed to connect, manage, and maintain a network and its

services. Some of the network services are Novell Netware Directory Services (NDS), file

system, printing and security.Managing NDS is a fundamental administrator role because NDS provides a single

point for accessing and managing most network resources.

Working shell

1. Type some text on the shell separated by space

[admin@hostname01 ~]$ vim working\_shell.sh

[admin@hostname01 ~]$ ./working\_shell.sh

Hi I am Tanu

1: Move cursor one word back

Ctrl+b

2: Move cursor one word forward

Ctrl+f

3: Move cursor to the first character

Ctrl+a

4: Move cursor to the end

Ctrl+e

5: Delete test from second word to last character

Ctrl+k

6: Delete the current line

Ctrl+u

2: In lab 4 we have created a file errorlog.txt. Display it using cat command using

command completion.

[admin@hostname01 ~] cat errorlog.txt

3: Display history of command used so far.

[admin@hostname01 ~]$ history

1 ifconfig

2 exit

3 passwd root

4 cd /root/

5 exit

6 hostname host01

7 su - root

8 yum update -y

9 su root

10 su -

11 cd

12 poweroff

13 ifconfig

14 exit

15 yum -y update

16 su - root

17 init 0

18 su - root

19 pseudo su-

20 sudo su -

21 cat friends

22 cat friends>newfriend

23 cd ~

24 sudo cp /friends ~/Desktop/

25 cat ~/Desktop/friends

26 cat friends > newfriend

27 cat /friends > newfriend

28 cat newfriend

29 cat friends newfriend

30 ls

31 sudo cp /root/friends ~/

32 cat friends newfriend

33 who >users

34 cat users

35 cat friends >> users

36 cat /friends >> users

37 cat users

38 date

39 cal 10 2001

40        date “+ %”

41 date "+ %"

42 date “+%m”

43 date "+%m"

44 date "+%D"

45 date "+%/%Training Activity"

46 date "+%Training Activity"

47 date "+%r"

48 help ls > lsdoc

49 --help ls > lsdoc

50 man ls > lsdoc

51 cat lsdoc

52 cat > data.txt

53 rm -rf data.txt

54 ls

55 cat data.txt2>errorlog.txt

56 cat data.txt 2> errorlog.txt

57 cat errorlog.txt

58 rm ~/first.unics

59 cd desktop/

60 cd Desktop/

61 cat friends newfriends

62 cd ~

63 vi network\_services.txt

64 cat network\_services.txt

65 less network\_services.txt

66 sed -i 's/Netware/Novell Netware/g' network\_services.txt

67 more network\_services.txt

68 vi network\_services.txt

69 cat network\_services.txt

70 vi network\_services.txt

71 cat network\_services.txt

72 catca

73 cat network\_services.txt

74 vim working\_shell.sh

75 ./working\_shell.sh

76 chmod +x working\_shell.sh

77 ./working\_shell.sh

78 vim working\_shell.sh

79 history

4: Search ls command in history file

[admin@hostname01 ~]$ history | grep ls

30 ls

48 help ls > lsdoc

49 --help ls > lsdoc

50 man ls > lsdoc

51 cat lsdoc

54 ls

81 history | grep ls

5: Repeat the last command rd

[admin@hostname01 ~]$ !!

history | grep ls

30 ls

48 help ls > lsdoc

49 --help ls > lsdoc

50 man ls > lsdoc

51 cat lsdoc

54 ls

81 history | grep ls

6: Execute 3 command from history file.

admin@hostname01 ~]$ !3

7: What are the different shells available.

[admin@hostname01 ~]$ cat /etc/shells

/bin/sh

/bin/bash

/usr/bin/sh

/usr/bin/bash

Understanding access permissions

7.1: Create an empty file “demofile” and perform following instruction

1. Revoke read permission from owner and use cat command.

[admin@hostname01 Desktop]$ chmod u-r demofile

[admin@hostname01 Desktop]$ cat demofile

cat: demofile: Permission denied

2. Revoke write permission from owner and open using vi

editor and add some contain in it.

[admin@hostname01 Desktop]$ vi demofile

~

~

~

~

~

~

~

-- INSERT -- W10: Warning: Changing a readonly file

1. Add read and write permission to owner.

[admin@hostname01 Desktop]$ chmod u+rw demofile

1. Revoke write and execute from other and group

[admin@hostname01 Desktop]$ chmod go-wx demofile

1. Add write permission to group only

[admin@hostname01 Desktop]$ chmod g+w demofile

1. Assign read permission to all

[admin@hostname01 Desktop]$ chmod g+w demofile

1. Revoke read permission from others

[admin@hostname01 Desktop]$ chmod o-r demofile

1. Give the execute permission for the user for a file chap1

[admin@hostname01 ~]$ chmod u+x chap1

1. Give the execute permission for user, group and others for a file add.c

[admin@hostname01 ~]$ touch add.c

[admin@hostname01 ~]$ chmod a+x add.c

10. Remove the execute permission from user, give read permission to

group and others for a file aa.c

[admin@hostname01 Desktop]$ chmod u-x,g+r,o+r aa.c

11. Give execute permission for users for a.c, kk.c, nato and myfile using

single command

[admin@hostname01 ~]$ chmod u+x a.c kk.c nato myfile

7.2: Create an directory “demo” and copy /etc/passwd file in it

1. Display contents of demo

[admin@hostname01 ~]$ ls -l demo

total 4

-rw-r--r--. 1 admin admin 2055 Jan 30 23:18 passwd

2. Revoke read permission from demo directory and use ls

command on it

[ admin@hostname01 ~]$ chmod -r demo

[admin@hostname01 ~]$ ls demo

ls: cannot open directory 'demo': Permission denied

3. Revoke write permission from demo directory and try to copy

/etc/profile file in it

[admin@hostname01 ~]$ chmod -w demo

[admin@hostname01 ~]$ cp /etc/profile demo/

cp: cannot create regular file 'demo/profile': Permission denied

4. Delete passwd file from demo directory

[admin@hostname01 ~]$ rm demo/passwd

rm: cannot remove 'demo/passwd': Permission denied

5. Revoke execute permission from demo directory and try cd

command on demo.

[admin@hostname01 ~]$ chmod -x demo

[admin@hostname01 ~]$ cd demo

bash: cd: demo: Permission denied

**Using Process-Related Commands**

1. Find out the PID of the processes that are activated by you

[admin@hostname01 ~]$ whoami

admin

[admin@hostname01 ~]$ ps -u admin

PID TTY TIME CMD

2262 ? 00:00:01 systemd

2264 ? 00:00:00 (sd-pam)

2280 ? 00:00:00 gnome-keyring-d

2287 tty2 00:00:00 gdm-wayland-ses

2289 ? 00:00:00 dbus-broker-lau

2292 ? 00:00:01 dbus-broker

2295 tty2 00:00:00 gnome-session-b

2330 ? 00:00:00 gnome-session-c

2332 ? 00:00:00 gnome-session-b

2348 ? 00:08:03 gnome-shell

2365 ? 00:00:00 gvfsd

2370 ? 00:00:00 gvfsd-fuse

2378 ? 00:00:00 at-spi-bus-laun

2383 ? 00:00:00 dbus-broker-lau

2384 ? 00:00:00 dbus-broker

2399 ? 00:00:00 xdg-permission-

2400 ? 00:00:00 gnome-shell-cal

2414 ? 00:00:02 pipewire

2415 ? 00:00:03 wireplumber

2418 ? 00:00:03 pipewire-pulse

2433 ? 00:00:00 dconf-service

2451 ? 00:00:00 evolution-sourc

2455 ? 00:00:00 gvfs-udisks2-vo

2472 ? 00:00:00 gvfs-mtp-volume

2477 ? 00:00:00 gvfs-gphoto2-vo

2479 ? 00:00:00 goa-daemon

2483 ? 00:00:00 gvfs-goa-volume

2492 ? 00:00:22 goa-identity-se

2495 ? 00:00:00 evolution-calen

2513 ? 00:00:00 evolution-addre

2530 ? 00:00:00 gjs

2532 ? 00:00:00 at-spi2-registr

2535 ? 00:00:00 gsd-a11y-settin

2538 ? 00:00:01 gsd-color

2544 ? 00:00:00 gsd-datetime

2546 ? 00:00:05 gsd-housekeepin

2553 ? 00:00:00 gsd-keyboard

2555 ? 00:00:00 gsd-disk-utilit

2562 ? 00:00:01 gsd-media-keys

2564 ? 00:00:00 evolution-alarm

2567 ? 00:00:00 gsd-power

2569 ? 00:00:09 gnome-software

2574 ? 00:00:00 gsd-print-notif

2580 ? 00:00:00 gsd-rfkill

2584 ? 00:00:00 gsd-screensaver

2592 ? 00:02:40 vmtoolsd

2593 ? 00:00:00 gsd-sharing

2609 ? 00:00:12 gsd-smartcard

2619 ? 00:00:00 gsd-sound

2621 ? 00:00:00 gsd-usb-protect

2623 ? 00:00:00 gsd-wacom

2656 ? 00:00:00 gjs

2677 ? 00:00:00 gsd-printer

2751 ? 00:00:01 Xwayland

2805 ? 00:00:00 gvfsd-trash

2851 ? 00:00:04 xdg-desktop-por

2852 ? 00:00:26 ibus-daemon

2855 ? 00:00:03 gsd-xsettings

2861 ? 00:00:00 xdg-document-po

2863 ? 00:00:00 ibus-dconf

2864 ? 00:00:05 ibus-extension-

2870 ? 00:00:00 ibus-x11

2873 ? 00:00:00 ibus-portal

2889 ? 00:00:03 xdg-desktop-por

2898 ? 00:00:08 ibus-engine-sim

2914 ? 00:00:03 xdg-desktop-por

3005 ? 00:00:40 gnome-terminal-

3023 pts/0 00:00:00 bash

3082 ? 00:00:00 gvfsd-metadata

8220 pts/1 00:00:00 bash

9500 pts/1 00:00:00 ps

[admin@hostname01 ~]$ ps -u $(whoami)

PID TTY TIME CMD

2262 ? 00:00:01 systemd

2264 ? 00:00:00 (sd-pam)

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2348 ? 00:08:04 gnome-shell

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2370 ? 00:00:00 gvfsd-fuse

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2623 ? 00:00:00 gsd-wacom

2656 ? 00:00:00 gjs

2677 ? 00:00:00 gsd-printer

2751 ? 00:00:01 Xwayland

2805 ? 00:00:00 gvfsd-trash

2851 ? 00:00:04 xdg-desktop-por

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2863 ? 00:00:00 ibus-dconf

2864 ? 00:00:05 ibus-extension-

2870 ? 00:00:00 ibus-x11

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3005 ? 00:00:40 gnome-terminal-

3023 pts/0 00:00:00 bash

3082 ? 00:00:00 gvfsd-metadata

8220 pts/1 00:00:00 bash

9525 pts/1 00:00:00 ps

1. Find out the information about all the processes that are currently active

[admin@hostname01 ~]$ ps -e

PID TTY TIME CMD

1 ? 00:00:05 systemd

2 ? 00:00:00 kthreadd

3 ? 00:00:00 pool\_workqueue\_

4 ? 00:00:00 kworker/R-rcu\_g

5 ? 00:00:00 kworker/R-sync\_

6 ? 00:00:00 kworker/R-slub\_

7 ? 00:00:00 kworker/R-netns

10 ? 00:00:00 kworker/u512:0-events\_unbound

11 ? 00:00:00 kworker/R-mm\_pe

12 ? 00:00:00 kworker/u512:1-netns

13 ? 00:00:00 rcu\_tasks\_kthre

14 ? 00:00:00 rcu\_tasks\_rude\_

15 ? 00:00:00 rcu\_tasks\_trace

16 ? 00:00:00 ksoftirqd/0

17 ? 00:00:03 rcu\_preempt

18 ? 00:00:00 rcu\_exp\_par\_gp\_

19 ? 00:00:00 rcu\_exp\_gp\_kthr

20 ? 00:00:00 migration/0

21 ? 00:00:00 idle\_inject/0

23 ? 00:00:00 cpuhp/0

24 ? 00:00:00 cpuhp/1

25 ? 00:00:00 idle\_inject/1

26 ? 00:00:02 migration/1

27 ? 00:00:00 ksoftirqd/1

30 ? 00:00:00 cpuhp/2

31 ? 00:00:00 idle\_inject/2

32 ? 00:00:02 migration/2

33 ? 00:00:00 ksoftirqd/2

36 ? 00:00:00 cpuhp/3

37 ? 00:00:00 idle\_inject/3

38 ? 00:00:02 migration/3

39 ? 00:00:00 ksoftirqd/3

51 ? 00:00:00 kdevtmpfs

52 ? 00:00:00 kworker/R-inet\_

53 ? 00:00:00 kauditd

54 ? 00:00:00 khungtaskd

55 ? 00:00:00 oom\_reaper

56 ? 00:00:00 kworker/R-write

57 ? 00:00:01 kcompactd0

3. Start a different process in the background. Find out the status of the background

process using the PID of the same.

admin@hostname01 ~]$ sleep 600 &

[1] 9680

[admin@hostname01 ~]$ ps -p 9680

PID TTY TIME CMD

9680 pts/1 00:00:00 sleep

1. Run a job in background

admin@hostname01 ~]$ sleep 200 &

[2] 9702

5. Bring a last background job in fore ground

[admin@hostname01 ~]$ fg

bash: fg: job has terminated

[2]+ Done sleep 20

6. Run 3 jobs in background and bring first job in foreground

[admin@hostname01 ~]$ sleep 10 &

[2] 11142

[1] Exit 127 slee 10

[admin@hostname01 ~]$ sleep 15 &

[3] 11147

[admin@hostname01 ~]$ sleep 35 &

[4] 11152

[2] Done sleep 10

[admin@hostname01 ~]$ fg 1

bash: fg: 1: no such job

[3]- Done sleep 15

[4]+ Done sleep 35

7. Stop current job

Ctrl+z

8. Start stopped job

bg

1. Run a job

[admin@hostname01 ~]$ sleep 90 &

[1] 11191

1. Kill last job

[admin@hostname01 ~]$ kill 11191

[1]+ Terminated sleep 90

1. Kill your shell using process id

Echo $$

8220

Kill 8220

1. Execute a ls command by setting priority as -10 using nice command

[admin@hostname01 ~]$ sudo nice -n -10 ls

[sudo] password for admin:

aa.c add.c demo Desktop Downloads lsdoc network\_services.txt Pictures Templates Videos

add chap1 demofile Documents errorlog.txt Music newfriend Public users working\_shell.sh

1. Display a date on every hour using cron tab

[admin@hostname01 ~]$ crontab -e

0 \*\*\*\* date >> /path/to/logfile