### Working with a Vi Editor

#### 1. Create a file using vi and 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.

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

bash

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vi file.txt

:%s/Netware/Novell Netware/2

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

Navigate to the line in vi and enter insert mode. After "share resources," type:

csharp

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(such as hard disks and printers)

#### 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."

Move to the end of the file in command mode:  
bash  
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$

Append the text in insert mode.

### Working with Shell

#### 1. Type some text on the shell separated by space.

Perform the following:

Move cursor one word back:  
bash  
CopyEdit  
Ctrl + b

Move cursor one word forward:  
bash  
CopyEdit  
Ctrl + f

Move cursor to the first character:  
bash  
CopyEdit  
Ctrl + a

Move cursor to the end:  
bash  
CopyEdit  
Ctrl + e

Delete text from the second word to the last character:  
Use Ctrl + w repeatedly.

Delete the current line:  
bash  
CopyEdit  
Ctrl + u

#### 2. In lab 4, display errorlog.txt using cat with command completion.

bash

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cat errorlog.txt

#### 3. Display the history of commands used so far.

bash

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history

#### 4. Search ls command in the history file.

bash

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history | grep ls

#### 5. Repeat the last command.

bash

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!!

#### 6. Execute 3 commands from the history file.

bash

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!<command\_number>

#### 7. What are the different shells available?

bash

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cat /etc/shells

### Understanding Access Permissions

#### 1. Create an empty file “demofile” and perform the following instructions:

bash

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touch demofile

a. Revoke read permission from owner and use cat:  
bash chmod u-r demofile cat demofile # Gives permission error b. Revoke write permission from owner and open using vi:  
bash chmod u-w demofile vi demofile # Cannot save changes c. Add read and write permission to owner:  
bash chmod u+rw demofile d. Revoke write and execute permissions from others and group:  
bash chmod go-wx demofile e. Add write permission to group only:  
bash chmod g+w demofile f. Assign read permission to all:  
bash chmod a+r demofile g. Revoke read permission from others:  
bash chmod o-r demofile

#### 2. Additional tasks:

Give the execute permission for the user for a file chap1:  
bash  
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chmod u+x chap1

Give execute permission for user, group, and others for a file add.c:  
bash  
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chmod a+x add.c

Remove execute permission from user and give read permission to group and others for a file aa.c:  
bash  
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chmod u-x,go+r aa.c

Give execute permission for users for a.c, kk.c, nato, and myfile using a single command:  
bash  
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chmod u+x a.c kk.c nato myfile

#### 3. Create a directory “demo” and copy /etc/passwd file in it.

Create the directory and copy the file:  
bash  
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mkdir demo

cp /etc/passwd demo

Display contents of demo:  
bash  
CopyEdit  
ls demo

Revoke read permission from the demo directory and use ls:  
bash  
CopyEdit  
chmod u-r demo

ls demo # Gives permission error

Revoke write permission from the demo directory and try to copy /etc/profile into it:  
bash  
CopyEdit  
chmod u-w demo

cp /etc/profile demo # Permission denied

Delete passwd file from the demo directory:  
bash  
CopyEdit  
rm demo/passwd

Revoke execute permission from the demo directory and try cd command on it:  
bash  
CopyEdit  
chmod u-x demo

cd demo # Permission denied

### Using Process-Related Commands

#### 1. Find out the PID of the processes activated by you.

bash

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ps -u $USER

#### 2. Find information about all processes currently active.

bash

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ps -aux

#### 3. Start a process in the background and find its PID.

bash

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sleep 300 &

jobs -l

#### 4. Run a job in the background.

bash

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sleep 100 &

#### 5. Bring the last background job to the foreground.

bash

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fg

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

bash

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sleep 100 &

sleep 200 &

sleep 300 &

fg %1

#### 7. Stop the current job.

bash

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Ctrl + z

#### 8. Start a stopped job.

bash

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bg

#### 9. Run a job.

bash

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sleep 500

#### 10. Kill the last job.

bash

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kill %%

#### 11. Kill your shell using the process ID.

bash

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kill -9 $$

#### 12. Execute an ls command by setting priority as -10 using nice.

bash

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nice -n -10 ls

#### 13. Display a date every hour using cron.

Edit the crontab file:  
bash  
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crontab -e

* Add the following line to execute date every hour:  
  bash  
  CopyEdit  
  0 \* \* \* \* date