

# Practical 01.

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Aim: Install linux on standalone machine.

Theory :

- **LINUX -**

Linux is the foundation of thousands of open source operating system. Linux is typically packaged in a Linux distribution.

Distribution include the linux kernel and supporting system software and libraries, a large many of which are provided by the GNU project. Many linux distribution use the word linux in their name. The Free software foundation uses the name GNU/Linux to emphasize that most linux distributions are just the linux kernel, but also numerous utilities and libraries, a large proportion of which are from the GNU project.

- **Advantages of Unix.**

- Low cost.
- Stability
- Performance
- Network friendless
- Flexibility.

- compatibility
- Fast and easy installation
- Full use Hardisk.
- Multitasking
- security.

#### \* STEPS TO INSTALL LINUX :-

##### 1. Download the linux Distribution of your choice :

If you are new to linux, consider trying a light-weight and easy to use distribution, such as ubuntu or linux mint. Distros are typically available for free to download in ISO format. You can find the ISO for the distribution of your choice.

##### 2. Boot into the live CD or USB :

Most computer are set to boot into the hard drive first, which means you will need to change some setting to boot from your newly burned CD or USB. Start by rebooting your computer.

##### 3. Try out the linux distribution before installing : Most live CDs and USBs can launch a "live environment", giving you the ability to test

it out before making the switch. You won't be able to create files, but you can navigate around the interface and decide if its right for you.

#### 4. Start the installation process :

If you are trying out the distro you can launch the installation from the application on the desktop. If you decided not to try out the distribution, you can start the installation from the boot menu.

#### 5. Create a username and password :

You will need to create login information to install linux. A password will be required to log into your account and perform administration tasks.

#### 6. Set up the partition.

~~Linux needs to be installed on a seperate partition from any other operating system on your computer if you intend dual booting linux with another os.~~ A partition is the portion of the hardrive that is formatted specifically for that os.

7. Boot into Linux.

Once the installation is finished your computer will reboot. You will see a new screen when your computer boots up called GRUB. This will boot a loader that handles linux installations. Pick your new linux distro from the list. The screen may not show up if you only have one OS on your computer.

8. Check your hardware :

Most hardware should work out of the box with your linux distro, though. You may need to download some additional drivers to get everything working. Some hardware requires proper proprietary drivers to work correctly in linux. In Ubuntu you can download proprietary drivers through the system setting menu. Select the additional drivers option, and then select the graphics drivers from the list. Other distros have specific methods for obtaining extra drivers.

9. Start using linux :

Once your installation is complete and you've verified that your hardware is working. You're ready to start using linux. Most distros come with several popular program installed and you can download many more from their respective file repositories.

Conclusion: Hence, I successfully installed linux on standalone machine.

Aim : Perform logging / logout via terminal and network.

### Theory :

The login program is used to establish a new session within the system. It is normally invoked automatically by responding to the "login": prompt on the user's terminal. login may be special to the shell and may not be invoked as a sub-process. When called from a shell, login should be executed as exec login which will cause the user to exit from the current shell and thus will prevent the new logged in user to return to the session of the caller. The user is then prompted for a password, where appropriate Echoing is disabled to prevent revealing the password. Only a small number of password failures are permitted before login exists and the communication link is severed.

If password aging has been enabled for your account, you may be prompted for a new password before proceeding. You will be forced to provide your old password and new password before continuing.

- Login via the network.  
It might however, be good enough to understand the important reason why network logins are somewhat different from normal logins. The natural virtual connections are established when there are two program logins. It is in principle possible to login from any computer there is a huge number of potential virtual communication. Because of this it is not practical to start a getty for each potential login.
- Login via terminal  
Init makes sure there is a getty program for the terminal connections. Getty listener at the terminal and waits for the user must, type something when it notices the user, getty outputs a welcome message (stored in /etc/issue) and prompts for the username and finally run the 'program'. Login gets the username as a parameter and prompts the user for password. Init notices that the process terminated and starts the new getty for the terminal syntax:

\$ login <username>

- Login via terminal  
Use the command "logout" to exit a given session. If you have logged in, then type 'su' to become superuser or another user. You may need to type 'exit' until your SHVI environment value is 1. Then you can type "logout" to exit your session.

Conclusion : Hence, I performed logging in and logging out via terminal successfully

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Aim : Perform general purpose utility commands in linux.

Theory :

(i) echo :-

To print the message. This command is used to display or print message on the terminal.

(ii) type :-

To show the type of

(iii) ls :-

To obtain a list of all filename in the current directory also used to check the file existence.

(iv) mv :-

This command has 2 function : (1) It renames the file. (2) It moves group of files to a different directory 'mv' doesn't create a copy of a file it renames it.

(v) rm :-

To remove or delete one or more files. Once deleted cannot be recovered.

Air

(vi) cat -  
\$ cat <file> OR  
\$ cat > <filename> OR  
\$ cat <file1> <file2>.

(vii)

if useradd is used with -c option at terminal  
no space useradd <username>@terminal

(viii) who :-

\$ who

(ix) man :-  
\$ man <command name>

(x) info :-  
\$ info <command name>

(xi) cal :-

tomorrow + \$ cal : [month] [year] | cal command will  
display a calendar at a time

(xii) date :-  
\$ date + [%format]

(vi) cat :-

It is used to create, concate and display the contents of file.

(vii) useradd :-

To add a new user.

(viii) who :-

The who command display an information of all the users who are logged onto the system.

(ix) man :-

This command is used to see the manual of any command.

(x) info :-

Detailed information of any command.

(xi) cal :-

To display the calender of any month or year.

(xii) date :-

This command is used to display the system date and time. You can display the current date with this command which shows the date and time to the nearest second.

A (xiii) banner :-

(xiv) logname :-

\$ logname was a bba

ls -l /var/www/html | comm : -at beau si branca  
\$comm <file1> <file2> remova

~~(x) diff : pro p mitausgabe  
\$ diff <file1> <file2>~~

(xiii) banner :-

Is used to print the ASCII character string in large letter to standard output.

(xiv) logname :-

name of the command let you know the login user.

(xv) bc :-

It is used for command line calculator. It is similar to basic calculator by using which we can do mathematical calculation.

(xvi) comm:-

When we run 'comm' command it display three column output : ① contains lines unique in 1<sup>st</sup> file. ② shows lines unique to the 2<sup>nd</sup> file. ③ shows command lines in both files. The 'comm' command compares two sorted files line by line.

(xvii) diff:-

This command converts one file to other. It is used for displaying the file different. It also tells you that which line in files have to change to make file identical.

(vX) (cd.) -  
- not be a byname > not be all w. fl

Conclusion: Hence I performed this practical successfully.

viii) tar :-

The 'tar' command is used to create a archive file as well as to extract the archive file.

ix) pwd:-

To print the full system path of the current working directory.

x) cd:-

The 'cd' command is used to change the directory.

Conclusion : Hence I performed this practical successfully.

Aim: Use VI Editor

Theory :

### . vi Editor

VI is a screen oriented text editor originally for the unix operating system. This portable subset of the behaviour of vi & program based on it and the ex editor language support within this programming describe by the single unix specification and posix.

### . Using VI editor :-

1. To launch the VI editor open the terminal and type :

\$ vi [filename. extension] OR  
vi [filename existing].

VI editor opens in command mode.

2. Press I2 insert into enter insert mode.
3. Enter add constraint into Insert mode.
4. After writing content ex to command.
5. Press :wq to save and quit.
6. Click the contents by CAT [filename].

## \* commands.

### 1. Editing files.

- i : insert at cursor.
- a : write after cursor.
- A : write at the end.
- esc : terminate insert.
- u : undo last change.
- uu : undo all change of entire line.
- o : creates a new line for entry below the cursor location.
- O :

### 2. Deleting Characters.

- x : Deletes the character under cursor location.
- X : Deletes the character before the cursor location.
- dw : Deletes from the current cursor location to the next word.
- d^ : Deletes from the current cursor position to the begining of the line.
- d\$ : Deletes from the current cursor position to the end of the line.
- D : Delete from the cursor position to the end of the current line.
- dd : Deletes the line the cursor is on.

### 3. Change commands.

- cc : Removes the content of the line, leaving you in insert mode.
- cw : Changes the word the cursor is on from the cursor to the lowercase . w end of the word.
- s: Replace the characters under the cursor . vi return to the command mode after the replacement is entered.

### 4. Position commands.

- { : Moves a paragraph back.
- } : Moves a paragraph forward.
- [[ : Moves a section back.
- ]] : Moves a section forward.
- M : Moves to the middle of screen.
- L : Moves to the bottom of screen.

Conclusion: Hence we have used vi editor successfully.

Aim : Write any two shell script programs in VI editor.

Theory :

What is shell program?

A shell program is a text file that contains standard UNIX and shell commands. Each line in a shell program contains a single UNIX command exactly as if you have typed them in yourself. The difference is that you can execute all the command in a shell program.

Shell programs are interpreted and not compiled program. This means when you run a shell program a child shell is started. This child shell reads each lines in the script.

Using VI editor

Step 1 : To launch the VI editor open the terminal and type -

~~VI [filename] OR~~

~~VI [filename existing]~~

Step 2 : Press i to enter into insert mode.

Aim:

o/p:- chmod 755 evod.sh  
• /evod.sh

Enter a number

Number is even but largest [largest] IV  
[smallest] IV

Conclusion: Hence we executed shell programs successfully.

step 3 : Enter add constraint into insert mode.

Step 4 : After writing content ex to commands.

Step 5 : Press wq to save and quit.

Step 6 : Check the contents by CAT [filename].

Program 1 :

```
echo "enter first number"
read a
echo "enter second number"
read b
c = `expr $a + $b'
echo "result is = $c".
```

Program 2 :

```
echo "Enter a number"
read n
rem = $((n % 2))
if [ $rem -eq 0 ]
then
    echo "Number is even"
else
    echo "Number is odd"
fi
```

Conclusion : Hence we successfully executed shell programs

Aim : Write

any 2 C programs in vi editor.

Theory :

vi editor

Vi is originally a screen oriented text editor portable subset created for the unix os. The and programs based on it, and the ex editor language supported within these programs is described by the single unix specification & posix.

The original code for vi was written by Bill Joy in 1976, as the visual mode for a line editor called ex that Joy wrote with Chuck Haley.

The name "vi" derived from the shortest unambiguous abbreviation for the ex command visual, which switches the ex line editor to visual mode. Vi is a open sourced software with various non-free proprietary implementations distributed of unix.

Command for entering in vi editor :-

Program 1 :-

```
vi ASCII.c
#include <stdio.h>
int main()
{
    char c;
    printf("Enter a character ");
    scanf("%c", &c);
    printf("ASCII value of %c = %d", c, c);
}
:wq
```

Program 2 :-

```
vi sum.c
#include <stdio.h>
int main()
{
    int n1, n2, sum;
    printf("Enter Two integer : ");
    scanf("%d %d", &n1, &n2);
    sum = n1 + n2;
    printf("%d + %d = %d", n1, n2, sum);
    return 0;
}
```

## Practical No : 08

Ques : Create a new user.

Theory :

GUI method

Step 1 : You will see the upper right hand corner you need to click on the setting icon the click system setting and display the system setting window and click on user accounts, a window will pop up.

Step 2 : Open the user account settings, then on the upper right hand corner you need to click on unlock and enter password to allow access in modifying the user accounts.

Step 3 : At the lower left hand corner of the window click on the little plus sign. In small window that opens fill the various field and choose between standard and admin and then click add.

Step 4 : Your new user account is added but its recommended that you add a password before logging into it.

## Using terminal

step 1 : open the terminal application.

step 2 : To add a new user in linux run  
\$ sudo adduser [username].

step 3 : Enter password and other needed information to create a user account on linux server.

step 4 : New username would be added to /etc/passwdfile , and encrypted password stored in the /etc/shadowfile.

Conclusion : Hence in this practical I created a user using GUI method and by terminal.