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Ex No. 1.a**  
 **Installation/Configuration Steps:**

Aim:

To install and configure Linux operating system in a Virtual Machine.

Install the required packages for virtualization:

dnf install xen virt-manager qemu libvirt

Configure xend to start up on boot:

systemctl enable virt-manager.service

Reboot the machine:

reboot

Create Virtual Machine by first running:

virt-manager &

In Virtual Machine Manager, click on File → Add Connection → Connect to localhost.

In the main menu, right-click on localhost (QEMU) and select New to create a new VM.

Choose to install from Linux ISO image.

Browse and select puppy-linux.iso, and choose the appropriate kernel version.

Assign CPU cores and set RAM according to your system's capacity.

Create a default disk image of 8 GB for the VM.

Click Finish to complete the VM creation and install Puppy Linux.

Output:  
Successful installation of Puppy Linux in a Virtual Machine.

Able to boot and operate Puppy Linux inside the Virtual Machine environment.  
  
Result:

The Linux operating system (Puppy Linux) was successfully installed and configured inside a Virtual Machine using virt-manager. The Virtual Machine was created with the specified CPU, RAM, and disk settings, and the system booted properly, confirming a successful installation and configuration.  
  
**Ex No.1b:  
 Basic linux Commands**1.1 GENERAL PURPOSE COMMANDS

1. date

Aim:

To display the current system date and time.

Command:

date

Output:

Sat Apr 26 12:45:32 IST 2025

Result:

The current date and time are displayed.

Different formats:

Command:

date +%m

Output:

04

Result:

Displays the current month in MM format.

Command:

date +%h

Output:

Apr

Result:

Displays the current month in short text format.

Command:

date +%d

Output:

26

Result:

Displays the current day of the month.

Command:

date +%y

Output:

25

Result:

Displays the current year in two-digit format.

Command:

date +%H

Output:

12

Result:

Displays the current hour in 24-hour format.

Command:

date +%M

Output:

45

Result:

Displays the current minute.

Command:

date +%S

Output:

32

Result:

Displays the current second.

2. echo

Aim:

To display a message on the screen.

Command:

echo "God is Great"

Output:

God is Great

Result:

The given text is printed on the terminal.

3. cal

Aim:

To display the calendar of a given month and year.

Command:

cal Jan 2012

Output:

January 2012

Su Mo Tu We Th Fr Sa

1 2 3 4 5 6 7

8 9 10 11 12 13 14

15 16 17 18 19 20 21

22 23 24 25 26 27 28

29 30 31

Result:

The calendar of January 2012 is displayed.

4. bc

Aim:

To perform calculations.

Command:

bc -l

(Input inside bc)

16/4

5/2

Output:

4

2

Result:

The basic arithmetic operations are calculated.

5. who

Aim:

To display the users currently logged into the system.

Command:

who

Output:

user1 tty7 2025-04-26 09:32 (:0)

user2 pts/0 2025-04-26 10:01 (192.168.1.2)

Result:

List of users currently logged in is displayed.

6. who am i

Aim:

To display information about the current user.

Command:

who am i

Output:

user1 tty7 2025-04-26 09:32 (:0)

Result:

Current user's session information is shown.

7. id

Aim:

To display user identity (UID, GID, and groups).

Command:

id

Output:

uid=1000(user1) gid=1000(user1) groups=1000(user1),24(cdrom),25(floppy)

Result:

User’s UID, GID, and groups are displayed.

8. tty

Aim:

To display the terminal name.

Command:

tty

Output:

/dev/pts/0

Result:

The terminal device file name is displayed.

9. clear

Aim:

To clear the screen.

Command:

clear

Output:

(Screen clears — no visible output)

Result:

The terminal screen is cleared.

10. man

Aim:

To read the manual page of a command.

Command:

man date

Output:

(Manual page for the date command opens)

Result:

The manual/documentation of the command is displayed.

11. ps

Aim:

To display information about active processes.

Command:

ps

Output:

PID TTY TIME CMD

1430 pts/0 00:00:00 bash

1475 pts/0 00:00:00 ps

Result:

The list of currently running processes is shown.

Extended command:

Command:

ps -e

Output:

PID TTY TIME CMD

1 ? 00:00:01 systemd

2 ? 00:00:00 kthreadd

...

Result:

Displays all running processes.

Command:

bash

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ps aux

Output:

USER PID %CPU %MEM VSZ RSS TTY STAT START TIME COMMAND

root 1 0.0 0.1 167744 1352 ? Ss 09:30 0:01 systemd

user1 1475 0.0 0.0 11500 900 pts/0 R+ 12:46 0:00 ps aux

Result:

Displays detailed information about all running processes.

12. uname

Aim:

To display system information.

Command:

uname -a

Output:

Linux localhost 5.15.0-84-generic #93-Ubuntu SMP Fri Sep 2 15:36:34 UTC 2024 x86\_64 x86\_64 x86\_64 GNU/Linux

Result:

Full system information is displayed.

1.2 DIRECTORY COMMANDS

1. pwd

Aim:

To display the present working directory.

Command:

pwd

Output:

arduino

/home/user1

Result:

Shows the current directory path.