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EXPERIMENT 1

AIM

TO STUDY INTRODUCTION OF UNIX AND DO THE INSTALLATION

[WHAT IS UNIX]

- UNIX IS A POWERFUL, MULTI-USER, MULTI-TASKING OPERATING SYSTEM DEVELOPED IN THE 1970s AT BEUS.
- IT IS WIDELY USED FOR SERVERS, WORKSTATIONS AND MOBILE DEVICES.
- ITS DESIGN PRINCIPLES EMPHASIZES SIMPLICITY, PORTABILITY AND A STRONG COMMAND-LINE INTERFACE.

[FEATURES OF UNIX]

- STRONG USER AUTHENTICATION
- ROBUST NETWORKING CAPABILITIES
- HIGHLY PORTABLE
- MULTI-USER ENVIRONMENT
- POWERFUL COMMAND LINE INTERFACE
- HIERARCHICAL FILE SYSTEM

[POPULAR VARIANTS]

- LINUX
- MACOS
- SOLARIS
- AIX

STEPS TO INSTALL

- 1 CHOOSE UNIX DISTRIBUTION
- 2 ENSURE YOUR SYSTEM MEETS REQUIREMENT OF CHOSEN DISTRIBUTION
- 3 DOWNLOAD THE ".iso" FILE OF DISTRIBUTION
- 4 CREATE A BOOTABLE USB DRIVE VIA "RUFUS" OR "BALENAETCHER"
- 5 INSERT THE BOOTABLE DRIVE AND RESTART YOUR SYSTEM
- 6 OPEN THE BOOT MENU DURING STARTUP
- 7 SELECT THE BOOTABLE DEVICE
- 8 START THE INSTALLATION.
- 9 SELECT LANGUAGE AND REGION
- 10 CHOOSE INSTALLATION TYPE EITHER, "INSTALL ALONGSIDE EXISTING OS" OR "ERASE DISK AND INSTALL"
- 11 PARTITION THE DISKS
- 12 SET UP YOUR USER DETAILS
- 13 THE INSTALLER WILL COPY FILES AND CONFIGURE THE SYSTEM
- 14 ONCE COMPLETED, REMOVE INSTALLATION MEDIA AND REBOOT
- 15 AFTER REBOOTING, LOG IN TO YOUR NEW SYSTEM AND ENJOY

EXPERIMENT 2

GENERAL PURPOSE COMMANDS IN UNIX

[BASIC]

- ① echo
— DISPLAYS TEXT
.. echo "Hello world"
⇒ Hello world
- ② clear
— CLEARS THE TERMINAL SCREEN
.. clear
- ③ exit
— EXITS THE CURRENT SHELL SESSION
.. exit
- ④ date
— DISPLAYS OR SETS SYSTEM DATE AND TIME
PARAMETERS:
- +%Y ⇒ DISPLAY YEAR
- +%T ⇒ DISPLAY TIME IN "HH:MM:SS"
- +%A ⇒ DISPLAY FULL WEEKDAY
.. date "+%Y-%m-%d %T"
⇒ 2025-01-19 13:45:30

NXI Pg
→

[DATE AND TIME]

uptime

- SHOWS SYSTEM UPTIME AND LOAD AVERAGES
PARAMETERS:

-p ⇒ PRETTY FORMAT UPTIME

-s ⇒ DISPLAY SYSTEM BOOT TIME

j. uptime -p

⇒ up 3 days, 4 hours, 12 minutes

cal

- DISPLAYS A CALENDAR

PARAMETER:

-3 ⇒ DISPLAY CURRENT 3 MONTHS

-y ⇒ DISPLAYS WHOLE YEAR

-m <month> ⇒ DISPLAYS SPECIFIC MONTH

j. cal -y

⇒ DISPLAYS MONTHS OF WHOLE YEAR

[FILE AND DIRECTORY]

cat

CONCATENATES AND DISPLAYS FILE CONTENT

PARAMETER:

-n ⇒ NUMBERS ALL O/P LINES

-b ⇒ NUMBERS ONLY NON-BLANK

-s ⇒ SUPPRESSED REPEATED EMPTY LINES

j. cat -n file.txt

⇒ 1. FIRST LINE

2. SECOND LINE

3. THIRD LINE

pwd

DISPLAYS THE CURRENT WORKING DIRECTORY

pwd

/home/user/Documents

whoami

DISPLAYS CURRENT USER

whoami

user

id

DISPLAYS (UID) AND (GID)

id -v

1000

PARAMETERS:

-v ⇒ DISPLAY USER ID

-g ⇒ DISPLAY GROUP ID

-n ⇒ DISPLAY NUMERIC ID

[NETWORK]

ping

SENDS ICMP PACKETS TO TEST CONNECTIVITY

PARAMETERS:

-c <count> ⇒ SPECIFIC NUMBER

-i <interval> ⇒ INTERVALS

-t <ttl> ⇒ TIME TO LIVE

ping google.com

Pinging google.com [142.250.192.110] with 32 bytes

Reply from 142.250.192.110: bytes=32 time=5ms

ipconfig

CONFIGURES NETWORK INTERFACES
PARAMETERS:

up \Rightarrow ACTIVATES

down \Rightarrow DEACTIVATES

interface \Rightarrow SPECIFY NETWORK INTERFACE

ifconfig etho

etho: flags = 4163 <UP, BROADCAST, RUNNING,
MULTICAST> inet 192.168.1.10 netmask

255.255.255.0 broadcast 192.168.1.125

[PRINTING COMMANDS]

lpstat

DISPLAYS PRINTER STATUS

lpstat

printer HP-LaserJet is idle. enabled since
Fri 19 Jan 2025 10:00:00 am

lpq

DISPLAYS PRINT QUEUE

lpq

Rank	Owner	Job	File(s)	Total Size
active	user	1	dec.txt	1024 bytes

lprm

REMOVES A PRINT JOB FROM QUEUE

lprm 1

Job 1 removed

man

- DISPLAYS MANUAL FOR COMMAND

man ls

⇒ OPENS MANUAL PAGE FOR "ls"

history

DISPLAYS COMMAND HISTORY

history

1 pwd

2 ls

3 echo "Hello"

mail

SENDS OR READS EMAILS

PARAMETERS :

<user> ⇒ SPECIFY USER

-s ⇒ SPECIFY SUBJECT

-f ⇒ ATTACH A FILE

g. mail -s "Test Email" user@example.com

⇒ MAIL sent to user@example.com

tty

- DISPLAY THE TERMINAL FILE NAME

PARAMETERS :

-s ⇒ OUTPUT SUPPRESS

-help ⇒ DISPLAY "help" FOR "tty"

tty

⇒ /dev/pts/0

5) `uname`

- DISPLAYS SYSTEM "info"

. `uname`

⇒ Linux

6) `which`

- LOCATES EXECUTABLE FILE OF A COMMAND

3. PARAMETERS:

→ `-a` ⇒ ALL MATCHING

→ `-h` ⇒ DISPLAY "help" INFO.

→ `-v` ⇒ DISPLAY VERSION INFO.

7. `which ls`

⇒ /bin/ls