

Experiment No. 1
Explore the internal commands of Linux.
Date of Performance:
Date of Submission:
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Sign:



Vidyavardhini's College of Engineering and Technology Department of Artificial Intelligence & Data Science

Aim: Explore the internal commands of Linux.

Objective:

Execute various internal commands of linux

Theory:

ps - report a snapshot of the current processes. ps displays information about a selection of the active processes.

cal — displays a calendar and the date of Easter

date - print or set the system date and time, Display the current time in the given FORMAT, or set the system date.

rm - remove files or directories

mkdir - make directories, Create the DIRECTORY(ies), if they do not already exist.rmdir - remove empty directories

cat - concatenate files and print on the standard output

wc - print newline, word, and byte counts for each file, Print newline, word, and byte counts for each FILE, and a total line if more than one FILE is specified.

ls - list directory contents

ls [OPTION]... [FILE]...



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List information about the FILEs (the current directory by default). Sort entries alphabetically.

-l:use a long listing format

chmod - change file mode bits

chmod changes the file mode bits of each given file according to mode, which can be either a symbolic representation of changes to make, or an octal number representing the bit pattern for the new mode bits.

chown - change file owner and group

chown changes the user and/or group ownership of each given file. If only an owner (a user name or numeric user ID) is given, that user is made the owner of each given file, and the files' group is not changed. If the owner is followed by a colon and a group name (or numeric group ID), with no spaces between them, the group ownership of the files is changed as well.

pwd - print name of current/working directory.

Print the full filename of the current working directory.

umask - set file mode creation mask , umask() sets the calling process's file mode creation mask (umask) to mask & 0777 (i.e., only the file permission bits of mask are used), and returns the previous value of the mask.

OUTPUT:

```
buntu@ubuntu-HP-Ellte-Tower-688-G9-Besktop-PC: $ pwd
home/ubuntu
buntugubuntu-HP-Elite-Tower-600-G9-Desktop-PC: 5 ls
             ubuntu ubuntu 4096 Mar
                                            2023
drwxr-xr-x 2 ubuntu ubuntu 4096 Mar
                                            2023
drwxr-xr-x 2 ubuntu ubuntu 4096 Mar
                                            2023
drwxr-xr-x 2 ubuntu ubuntu 4896 Mar
                                            2823
drwxr-xr-x 3 ubuntu ubuntu 4896 Sep 25
                                           10:18
frwxr-xr-x 2 ubuntu ubuntu
                                            2023
           4 ubuntu ubuntu
             ubuntu ubuntu 4896 Mar
drwxr-xr-x 2 ubuntu ubuntu 4096 Mar
                         Tower-600-G9-Desktop-PC:-$ 1s -a
    .bash_history
                                                                         .profile
                    .bashrc
                                                                                           .sudo_as_admin_succes
    .bash_logout
buntugubuntu-HP-Elite-Tower-600-G9-Desktop-PC:- $ date
Wednesday 10 January 2024 02:49:21 PM IST
real
        8M8.886s
user
        8m0.000s
ubuntumubuntu-MP-Elite-Tower-600-G9-Desktop-PC: $ cal
Command 'cal' not found, but can be installed with:
sudo apt install ncal
```



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ntugubuntu-HP-Ellte-Tower-806-69-Denktop-PC: $ 1s
    a ubuntugubuntu-HP-Elite-Yower-808-69-Desktop-PC: $ touch abc uhuntugubuntu-HP-Elite-Tower-808-69-Desktop-PC: $ is
  a abc

ubuntugubuntu-HP-Elite-Tower-600-G9-Desktop-RC: $ cat hello.text
cat: hello.text: No such file or directory

ubuntugubuntu-HP-Elite-Tower-800-G9-Desktop-RC: $ touch hello.text
ubuntugubuntu-HP-Elite-Tower-800-G9-Desktop-RC: $ cat hello.text
    ubuntupubunty HP-Etite (ower-mon-Ey-Genetop-PC: 5 touch hello.txt
ubuntupubunty-HP-Elite-Tower-sDO-G9-Denktop-PC: 5 touch hello.txt
ubuntupubunty-HP-Elite-Tower-sDO-G9-Denktop-PC: 5 cat hello.txt
ubuntupubunty-HP-Elite-Tower-sDG-G9-Denktop-PC: 5 ls
ubuntupubunty-HP-Elite-Tower-sDG-G9-Denktop-PC: 5 ls
                                                                                                                                                                                                                                                                                                                              ubuntugubuntu-MP-Elite-Tower-850-G9-Denktop-PC: 5 cat>>hello.txt
     How are you?
     ununtugubontu-HP-Ellte-Tower-808-G9-Desktop-PC: $ TRIAL$cathello.txthl.txt
TRIAL.txtht.txt: command not found
ubuntugubuntu-HP-Ellte-Tower-800-G9-Desktop-PC: $ TRIAL$cathello.txthitxt
     TRIAL txthitxt: command not found
     ubuntumubuntu-mm-Elite-Tower-800-G9-Desktop-PC: $ TRIALS cat hello txt hi txt
TRIALS: command not found
ubuntumubuntu-mm-Elite-Tower-800-G9-Desktop-PC: $ free
    ### Towar - See - General - Gene
                                                                                                                                                                                                                                                                                                                                                             shared buff/cache available
453656 1740240 0000756
  ubuntupubuntu-RP-Elite-Tower-808-69-Deaktop-PC: $ cd TRIAL ubuntupubuntu-HP-Elite-Tower-808-69-Deaktop-PC: /TRIAL $ cat cat: hrllo.txt: No such file or directory cat: hi.txt: No such file or directory ubuntupubuntu-HP-Elite-Tower-808-69-Deaktop-PC: //W.A.S. cd ubuntupubuntu-HP-Elite-Tower-808-69-Deaktop-PC: $ cd TRIAL
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  ubuntumubuntu-HP-Elite-Tower-800-C9-Desktop-PC: $ cd TRIAL
ubuntumubuntu-HP-Elite-Tower-800-C9-Desktop-PC: $ /TRIAL$ touch hello.txt
ubuntumubuntu-HP-Elite-Tower-800-C9-Desktop-PC: $ /TRIAL$ touch hello.txt

Command 'touch' from deb coreutlis (8.32-4.1ubuntu1)

Try: sudo apt install <deb name>
ubuntumubuntu-HP-Elite-Tower-800-C9-Desktop-PC: /TRIAL$ touch hi.txt
ubuntumubuntu-HP-Elite-Tower-800-C9-Desktop-PC: /TRIAL$ cat hello.txt hi.txt
ubuntumubuntu-HP-Elite-Tower-800-C9-Desktop-PC: /TRIAL$ cat hello.txt hi.txt
ubuntumubuntu-HP-Elite-Tower-800-C9-Desktop-PC: /TRIAL$ Cat->hello.txt hi.txt
ubuntumubuntu-HP-Elite-Tower-800-C9-Desktop-PC: /TRIAL$
Ubontumbuntu-NP-Elite-Tower-600-GP-Desking-PC: $ nkdlr nkdfr: missing operand
Try 'nkdlr'-help' for more information.
obuntumbuntu-NP-Elite-Tower-600-GP-Desking-PC: $ nkdlr doc ubontumbuntu-NP-Elite-Tower-600-GP-Desking-PC: $ nkdlr TRIAL ubontumbuntu-NP-Elite-Tower-600-GP-Desking-PC: $ cd TRIAL ubontumbuntu-NP-Elite-Tower-600-GP-Desking-PC: $ cd TRIAL ubontumbuntu-NP-Elite-Tower-600-GP-Desking-PC: ** TRIAL $ cd.: command not found ubontumbuntu-NP-Elite-Tower-600-GP-Desking-PC: ** TRIAL $ cd/
bash: cd/: No such file or directory
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     a ubuntuguluntu-HF-Ellte-Tower-600-69-beaktop-PC: $ touch abc ubuntugubuntu-HF-Ellte-Tower-600-69-beaktop-PC: $ ls
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     How are you?
Where are you?
    ubuntumubuntu-HP-Elite-Tower-808-09-Desktop-PC: $ TRIALScathello.txthl.txt
TRIAL.txthl.txt: command not found
ubuntumubuntu-HP-Elite-Tower-809-69-Desktop-PC: $ TRIALScathello.txthltxt
TRIAL.txthltxt: command not found
ubuntumubuhuntu-HP-Elite-Tower-808-69-Desktop-PC: $ TRIALS cat hello.txt bl.txt
    Ubuntugubuntu-RP-Elite-Tower = 800-G9-Deaktop-PC: $ free total used free shared buff/cache available Men: 7805/00 1092700 4972/00 451050 1740240 0000750 5wap: 2097148 8 2097148 5 cebe
                ountugubuntu-HP-Elite-Tower-600-G9-Desktop-PC: 5
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Conclusion:

What Do you mean by System calls?

System calls are fundamental interfaces between a user application and the operating system. When a program running in user mode requires access to system resources or services that only the operating system can provide, it must make a system call. This allows the program to transition from user mode tokernel mode, where the operating system resides, and request the necessary action.

System calls provide a standardized way for applications to interact with the underlying hardware and operating system functionalities. Examples of operations that typically require system calls include readingfrom or writing to files, creating new processes, allocating memory, managing hardware devices, and performing network communication.

Each operating system has its own set of system calls, and they are usually exposed to user programs through a set of functions provided by the operating system's application programming interface (API). Insummary, system calls are crucial for enabling user applications to utilize the full capabilities of the underlying operating system and hardwar