

Week 1 Assignment-Linux Essentials

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Jul 5 00:59
abishek@ubuntu: ~/devops_project

abishek@ubuntu:~$ cat /etc/os-release
PRETTY_NAME="Ubuntu 25.04"
NAME="Ubuntu"
VERSION_ID="25.04"
VERSION="25.04 (Plucky Puffin)"
VERSION_CODENAME=plucky
ID=ubuntu
ID_LIKE=debian
HOME_URL="https://www.ubuntu.com/"
SUPPORT_URL="https://help.ubuntu.com/"
BUG_REPORT_URL="https://bugs.launchpad.net/ubuntu/"
PRIVACY_POLICY_URL="https://www.ubuntu.com/legal/terms-and-policies/privacy-policy"
UBUNTU_CODENAME=plucky
LOGO=ubuntu-logo

abishek@ubuntu:~$ mkdir devops_project
abishek@ubuntu:~$ cd devops_project
abishek@ubuntu:~/devops_project$ touch plan.txt
abishek@ubuntu:~/devops_project$ touch network_report.txt
abishek@ubuntu:~/devops_project$ pwd
```

```
Jul 5 01:00
abishek@ubuntu: ~/devops_project

abishek@ubuntu:~/devops_project$ touch network_report.txt
abishek@ubuntu:~/devops_project$ pwd
/home/abishek/devops_project
abishek@ubuntu:~/devops_project$ mkdir tmp
abishek@ubuntu:~/devops_project$ ls
network_report.txt  plan.txt  tmp
abishek@ubuntu:~/devops_project$ cd tmp
abishek@ubuntu:~/devops_project/tmp$ pwd
/home/abishek/devops_project/tmp
abishek@ubuntu:~/devops_project/tmp$ ls
abishek@ubuntu:~/devops_project/tmp$ cd ..
abishek@ubuntu:~/devops_project$ cp plan.txt /home/abishek/devops_project/tmp
abishek@ubuntu:~/devops_project$ ls
network_report.txt  plan.txt  tmp
abishek@ubuntu:~/devops_project$ cd tmp
abishek@ubuntu:~/devops_project/tmp$ ls
plan.txt
abishek@ubuntu:~/devops_project/tmp$ cd ..
abishek@ubuntu:~/devops_project$ rm plan.txt
abishek@ubuntu:~/devops_project$ ls
```

```
Jul 5 01:00
abishek@ubuntu: ~/devops_project

abishek@ubuntu:~/devops_project$ mkdir tmp
abishek@ubuntu:~/devops_project$ ls
network_report.txt  plan.txt  tmp
abishek@ubuntu:~/devops_project$ cd tmp
abishek@ubuntu:~/devops_project/tmp$ pwd
/home/abishek/devops_project/tmp
abishek@ubuntu:~/devops_project/tmp$ ls
abishek@ubuntu:~/devops_project/tmp$ cd ..
abishek@ubuntu:~/devops_project$ cp plan.txt /home/abishek/devops_project/tmp
abishek@ubuntu:~/devops_project$ ls
network_report.txt  plan.txt  tmp
abishek@ubuntu:~/devops_project$ cd tmp
abishek@ubuntu:~/devops_project/tmp$ ls
plan.txt
abishek@ubuntu:~/devops_project/tmp$ cd ..
abishek@ubuntu:~/devops_project$ rm plan.txt
abishek@ubuntu:~/devops_project$ ls
network_report.txt  tmp
abishek@ubuntu:~/devops_project$
```

```
Jul 5 01:38
abishek@ubuntu: ~
abishek@ubuntu:~$ sudo adduser devstudent
[sudo] password for abishek:
info: Adding user `devstudent' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `devstudent' (1001) ...
info: Adding new user `devstudent' (1001) with group `devstudent (1001)' ...
warn: The home directory `/home/devstudent' already exists. Not touching this directory.
warn: Warning: The home directory `/home/devstudent' does not belong to the user you are currently creating.
New password:
BAD PASSWORD: The password fails the dictionary check - it is too simplistic/systematic
Retype new password:
passwd: password updated successfully
Changing the user information for devstudent
Enter the new value, or press ENTER for the default
    Full Name []: devstudent
    Room Number []:
    Work Phone []:
```

```
Jul 5 01:38
abishek@ubuntu: ~
Is the information correct? [Y/n]
info: Adding new user `devstudent' to supplemental / extra groups `users' ...
info: Adding user `devstudent' to group `users' ...
abishek@ubuntu:~$ grep devstudent
^C
abishek@ubuntu:~$ grep devstudent /etc/passwd
devstudent:x:1001:1001:devstudent,,,:/home/devstudent:/bin/bash
abishek@ubuntu:~$ sudo addgroup devops_team
fatal: The group `devops_team' already exists.
abishek@ubuntu:~$ sudo usermod -aG devops_team devstudent
abishek@ubuntu:~$ group devops_team
Command 'group' not found, did you mean:
  command 'groups' from deb coreutils (9.5-1ubuntu1)
Try: sudo apt install <deb name>
abishek@ubuntu:~$ groups devops_team
groups: `devops_team': no such user
abishek@ubuntu:~$ ls -l
total 4
drwxrwxr-x 3 abishek abishek 4096 Jul  5 00:57 devops_project
abishek@ubuntu:~$ sudo addgroup devops_team
```

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Jul 5 01:39
abishek@ubuntu: ~
drwxrwxr-x 3 abishek abishek 4096 Jul  5 00:57 devops_project
abishek@ubuntu:~$ sudo addgroup devops_team
fatal: The group `devops_team' already exists.
abishek@ubuntu:~$ grep devops_team /etc/group
devops_team:x:1007:devstudent
abishek@ubuntu:~$ group devstudent
Command 'group' not found, did you mean:
  command 'groups' from deb coreutils (9.5-1ubuntu1)
Try: sudo apt install <deb name>
abishek@ubuntu:~$ groups devstudent
devstudent : devstudent users devops_team
abishek@ubuntu:~$ sudo usermod -aG devops_team devstudent
abishek@ubuntu:~$ groups devstudent
devstudent : devstudent users devops_team
abishek@ubuntu:~$ sudo usermod -aG sudo devstudent
abishek@ubuntu:~$ groups devstudent
devstudent : devstudent sudo users devops_team
abishek@ubuntu:~$ su devstudent
Password:
To run a command as administrator (user "root"), use "sudo <command>"
```



```
Jul 5 01:40
abishek@ubuntu: ~
devstudent@ubuntu:/home$ chmod 600 secrets.txt
chmod: changing permissions of 'secrets.txt': Operation not permitted
devstudent@ubuntu:/home$ sudo chown devstudent:devops_team secrets.txt
devstudent@ubuntu:/home$ chmod 600 secrets.txt
devstudent@ubuntu:/home$ ls -l
total 24
drwxr-x--- 4 abishek abishek 4096 Jul 5 00:48 abishek
drwxr-x--- 2      1002      1002 4096 Jul 4 01:12 amul
drwxr-x--- 16      1005      1005 4096 Jul 4 16:17 devops_project
drwxr-x--- 5      1006      1006 4096 Jul 4 17:55 devstudent
drwxr-x--- 3 devstudent devstudent 4096 Jul 4 06:30 kishore
drwxr-x--- 2      1003      1003 4096 Jul 4 01:13 moni
-rw----- 1 devstudent devops_team 0 Jul 5 01:29 secrets.txt
devstudent@ubuntu:/home$ ls -l /home/amul
ls: cannot open directory '/home/amul': Permission denied
devstudent@ubuntu:/home$ sudo rm -r /home/amul
devstudent@ubuntu:/home$ sudo rm -r /home/kishore
devstudent@ubuntu:/home$ sudo rm -r /home/moni
devstudent@ubuntu:/home$ ls -l
total 12
```

```
Jul 5 01:40
abishek@ubuntu: ~
ls: cannot open directory '/home/amul': Permission denied
devstudent@ubuntu:/home$ sudo rm -r /home/amul
devstudent@ubuntu:/home$ sudo rm -r /home/kishore
devstudent@ubuntu:/home$ sudo rm -r /home/moni
devstudent@ubuntu:/home$ ls -l
total 12
drwxr-x--- 4 abishek abishek 4096 Jul 5 00:48 abishek
drwxr-x--- 16      1005      1005 4096 Jul 4 16:17 devops_project
drwxr-x--- 5      1006      1006 4096 Jul 4 17:55 devstudent
-rw----- 1 devstudent devops_team 0 Jul 5 01:29 secrets.txt
devstudent@ubuntu:/home$ sudo rm -r /home/devops_project
rm: cannot remove '/home/devops_project': No such file or directory
devstudent@ubuntu:/home$ sudo rm -r /home/devops_project
devstudent@ubuntu:/home$ sudo rm -r /home/devstudent
devstudent@ubuntu:/home$ ls -l
total 4
drwxr-x--- 4 abishek abishek 4096 Jul 5 00:48 abishek
-rw----- 1 devstudent devops_team 0 Jul 5 01:29 secrets.txt
devstudent@ubuntu:/home$
```

```
Jul 5 07:51
Terminal
abishek@ubuntu:~$ echo "this is a dummy log file " > sample.log
abishek@ubuntu:~$ cat sample.log
this is a dummy log file
abishek@ubuntu:~$ gzip sample.log
abishek@ubuntu:~$ ls
devops_project sample.log.gz
abishek@ubuntu:~$ tar -cvf log.tar.gz sample.log
tar: sample.log: Cannot stat: No such file or directory
tar: Exiting with failure status due to previous errors
abishek@ubuntu:~$ tar -czvf log.tar.gz sample.log.gz
sample.log.gz
abishek@ubuntu:~$
```

```
Jul 5 08:03
Terminal
Files
abishek@ubuntu:~$ ifconfig
enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fd17:625c:f037:2:fa86:6857:c5b3:28f2 prefixlen 64 scopeid 0x0
<global>
    inet6 fd17:625c:f037:2:a00:27ff:fe05:fab1 prefixlen 64 scopeid 0x0<
global>
    inet6 fe80::a00:27ff:fe05:fab1 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:05:fa:b1 txqueuelen 1000 (Ethernet)
    RX packets 46382 bytes 64258474 (64.2 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 5111 bytes 387349 (387.3 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 1046 bytes 111256 (111.2 KB)
```

```
Jul 5 08:09
Terminal
abishek@ubuntu:~$
abishek@ubuntu:~$ sudo apt update
[sudo] password for abishek:
Hit:1 http://ports.ubuntu.com/ubuntu-ports plucky InRelease
Get:2 http://ports.ubuntu.com/ubuntu-ports plucky-updates InRelease [126 kB]
Get:3 http://ports.ubuntu.com/ubuntu-ports plucky-backports InRelease [126 kB]
]
Get:4 http://ports.ubuntu.com/ubuntu-ports plucky-security InRelease [126 kB]
Get:5 http://ports.ubuntu.com/ubuntu-ports plucky-updates/main arm64 Packages [195 kB]
Get:6 http://ports.ubuntu.com/ubuntu-ports plucky-updates/main Translation-en [55.1 kB]
Get:7 http://ports.ubuntu.com/ubuntu-ports plucky-updates/main arm64 Components [27.3 kB]
Get:8 http://ports.ubuntu.com/ubuntu-ports plucky-updates/restricted arm64 Packages [120 kB]
Get:9 http://ports.ubuntu.com/ubuntu-ports plucky-updates/restricted Translation-en [18.3 kB]
Get:10 http://ports.ubuntu.com/ubuntu-ports plucky-updates/restricted arm64 Components [212 B]
```

```
Jul 5 08:10
Terminal
Get:8 http://ports.ubuntu.com/ubuntu-ports plucky-updates/restricted arm64 Packages [120 kB]
Get:9 http://ports.ubuntu.com/ubuntu-ports plucky-updates/restricted Translation-en [18.3 kB]
Get:10 http://ports.ubuntu.com/ubuntu-ports plucky-updates/restricted arm64 Components [212 B]
Get:11 http://ports.ubuntu.com/ubuntu-ports plucky-updates/universe arm64 Packages [143 kB]
Get:12 http://ports.ubuntu.com/ubuntu-ports plucky-updates/universe arm64 Components [8,800 B]
Get:13 http://ports.ubuntu.com/ubuntu-ports plucky-updates/multiverse arm64 Components [212 B]
Get:14 http://ports.ubuntu.com/ubuntu-ports plucky-backports/main arm64 Components [212 B]
Get:15 http://ports.ubuntu.com/ubuntu-ports plucky-backports/restricted arm64 Components [216 B]
Get:16 http://ports.ubuntu.com/ubuntu-ports plucky-backports/universe arm64 Components [216 B]
Get:17 http://ports.ubuntu.com/ubuntu-ports plucky-backports/multiverse arm64 Components [216 B]
```



```
Jul 5 08:10
Terminal
Get:18 http://ports.ubuntu.com/ubuntu-ports plucky-security/main arm64 Packages [116 kB]
Get:19 http://ports.ubuntu.com/ubuntu-ports plucky-security/main Translation-en [35.5 kB]
Get:20 http://ports.ubuntu.com/ubuntu-ports plucky-security/main arm64 Components [14.7 kB]
Get:21 http://ports.ubuntu.com/ubuntu-ports plucky-security/restricted arm64 Components [212 B]
Get:22 http://ports.ubuntu.com/ubuntu-ports plucky-security/universe arm64 Components [1,352 B]
Get:23 http://ports.ubuntu.com/ubuntu-ports plucky-security/multiverse arm64 Components [212 B]
Fetched 1,115 kB in 7s (165 kB/s)
66 packages can be upgraded. Run 'apt list --upgradable' to see them.
abishek@ubuntu:~$ sudo apt install curl htop net-tools -y
curl is already the newest version (8.12.1-3ubuntu1).
htop is already the newest version (3.4.0-2).
net-tools is already the newest version (2.10-1.1ubuntu1.25.04.4).
The following packages were automatically installed and are no longer required:
```

```
Jul 5 08:11
Terminal
The following packages were automatically installed and are no longer required:
  git-man liberror-perl
Use 'sudo apt autoremove' to remove them.

Summary:
  Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 66
abishek@ubuntu:~$ which curl
/usr/bin/curl
abishek@ubuntu:~$ curl --version
curl 8.12.1 (aarch64-unknown-linux-gnu) libcurl/8.12.1 OpenSSL/3.4.1 zlib/1.3
.1 brotli/1.1.0 zstd/1.5.6 libidn2/2.3.8 libpsl/0.21.2 libssh2/1.11.1 nghttp2
/1.64.0 librtmp/2.3 OpenLDAP/2.6.9
Release-Date: 2025-02-13, security patched: 8.12.1-3ubuntu1
Protocols: dict file ftp ftps gopher gophers http https imap imaps ipfs ipns
ldap ldaps mqtt pop3 pop3s rtmp rtsp scp sftp smb smbs smtp smtps telnet tftp
ws wss
Features: alt-svc AsynchDNS brotli GSS-API HSTS HTTP2 HTTPS-proxy IDN IPv6 Kerberos Largefile libz NTLM PSL SPNEGO SSL threadsafe TLS-SRP UnixSockets zstd
abishek@ubuntu:~$ which htop
```

```
Jul 5 08:19
Terminal
abishek@ubuntu:~$ ifconfig
enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fd17:625c:f037:2:fa86:6857:c5b3:28f2 prefixlen 64 scopeid 0x0<global>
    inet6 fd17:625c:f037:2:a00:27ff:fe05:fab1 prefixlen 64 scopeid 0x0<global>
    inet6 fe80::a00:27ff:fe05:fab1 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:05:fa:b1 txqueuelen 1000 (Ethernet)
    RX packets 47482 bytes 65453011 (65.4 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 5612 bytes 431113 (431.1 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 1136 bytes 126010 (126.0 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
```

```
Jul 5 08:21
Terminal
sudo apt install traceroute # version 1:2.1.6-1
abishek@ubuntu:~$ sudo apt install inetutils-traceroute
The following packages were automatically installed and are no longer required:
  git-man liberror-perl
Use 'sudo apt autoremove' to remove them.

Installing:
  inetutils-traceroute

Summary:
  Upgrading: 0, Installing: 1, Removing: 0, Not Upgrading: 66
  Download size: 41.9 kB
  Space needed: 125 kB / 3,951 MB available

Ign:1 http://ports.ubuntu.com/ubuntu-ports plucky/universe arm64 inetutils-traceroute arm64 2:2.5-6ubuntu1
Get:1 http://ports.ubuntu.com/ubuntu-ports plucky/universe arm64 inetutils-traceroute arm64 2:2.5-6ubuntu1 [41.9 kB]
Fetched 41.9 kB in 52s (802 B/s)
```

```
Jul 5 08:21
Terminal
Ign:1 http://ports.ubuntu.com/ubuntu-ports plucky/universe arm64 inetutils-traceroute arm64 2:2.5-6ubuntu1
Get:1 http://ports.ubuntu.com/ubuntu-ports plucky/universe arm64 inetutils-traceroute arm64 2:2.5-6ubuntu1 [41.9 kB]
Fetched 41.9 kB in 52s (802 B/s)
Selecting previously unselected package inetutils-traceroute.
(Reading database ... 211045 files and directories currently installed.)
Preparing to unpack ../inetutils-traceroute_2%3a2.5-6ubuntu1_arm64.deb ...
Unpacking inetutils-traceroute (2:2.5-6ubuntu1) ...
Setting up inetutils-traceroute (2:2.5-6ubuntu1) ...
update-alternatives: using /usr/bin/inetutils-traceroute to provide /usr/bin/traceroute (traceroute) in auto mode
Processing triggers for man-db (2.13.0-1) ...
Scanning processes...
Scanning processor microcode...
Scanning linux images...

Running kernel seems to be up-to-date.
```

```
Jul 5 08:22
Terminal
Summary:
  Upgrading: 0, Installing: 1, Removing: 0, Not Upgrading: 66
  Download size: 52.9 kB
  Space needed: 220 kB / 3,951 MB available

Get:1 http://ports.ubuntu.com/ubuntu-ports plucky/universe arm64 traceroute arm64 1:2.1.6-1 [52.9 kB]
Fetched 52.9 kB in 2s (25.7 kB/s)
Selecting previously unselected package traceroute.
(Reading database ... 211054 files and directories currently installed.)
Preparing to unpack ../traceroute_1%3a2.1.6-1_arm64.deb ...
Unpacking traceroute (1:2.1.6-1) ...
Setting up traceroute (1:2.1.6-1) ...
update-alternatives: using /usr/bin/traceroute6.db to provide /usr/bin/traceroute6 (traceroute6) in auto mode
update-alternatives: using /usr/bin/lft.db to provide /usr/bin/lft (lft) in auto mode
update-alternatives: using /usr/bin/traceproto.db to provide /usr/bin/traceproto (traceproto) in auto mode
update-alternatives: using /usr/sbin/tcptraceroute.db to provide /usr/sbin/tcptraceroute (tcptraceroute) in auto mode
```

```
Jul 5 08:23
Terminal
Running kernel seems to be up-to-date.
Failed to check for processor microcode upgrades.
No services need to be restarted.
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
abishek@ubuntu:~$ traceroute google.com
traceroute to google.com (142.250.192.14), 64 hops max
 1  10.0.2.2  0.079ms  1.720ms  0.051ms
 2  * * *
 3  * * *
 4  * * *
 5  * * *
 6  * * *
```

```
Jul 5 08:23
Terminal
abishek@ubuntu:~$ nslookup google.com
Server:      127.0.0.53
Address:     127.0.0.53#53

Non-authoritative answer:
Name:   google.com
Address: 142.250.192.14
Name:   google.com
Address: 2404:6800:4009:808::200e

abishek@ubuntu:~$ netstat -tuln
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 127.0.0.1:33060         0.0.0.0:*               LISTEN
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN
tcp        0      0 127.0.0.1:631          0.0.0.0:*               LISTEN
```

```
Jul 5 08:24
Terminal
tcp6       0      0 :::1:631                :::*                     LISTEN
tcp6       0      0 :::22                   :::*                     LISTEN
udp        0      0 127.0.0.54:53           0.0.0.0:*               *
udp        0      0 127.0.0.53:53           0.0.0.0:*               *
udp        0      0 0.0.0.0:49869           0.0.0.0:*               *
udp        0      0 0.0.0.0:5353            0.0.0.0:*               *
udp6       0      0 :::42043                :::*                     *
udp6       0      0 :::5353                 :::*                     *

abishek@ubuntu:~$ curl ifconfig.me
157.51.92.159abishek@ubuntu:~$
```