

## **Lab 1.2.2 - Review Linux**

### **Tujuan :**

Bagian 1 : Jalankan DEVASC VM

Bagian 2 : Review sintaks dan perintah di linux

Bagian 3 : Review Management File di linux

Bagian 4 : Review perintah umum di linux

Bagian 5 : review Administrasi system linux

### **Resource yang dibutuhkan :**

PC/Laptop dengan RAM Min. 4 GB

Virtual Box / VMWare

DEVASC Virtual Machine

### **Langkah -Langkah :**

#### **Bagian 1 : Jalankan DEVASC VM**

Bagian 2 : Review sintaks dan perintah di linux

Langkah 1 : Buka Terminal di DEVASC-LABVM

- Double klik icon terminal yang ada di DEVASC-LABVM. Terminal terletak di desktop.

Langkah 2 : Arahkan ke Direktori

- Gunakan perintah **ls** untuk melihat daftar direktori saat ini. Hati-hati karena Perintah/komen di linux ini case sensitive.

```
devasc@labvm:~$ ls
Desktop Downloads Music Public Templates
Documents labs Pictures snap Videos
devasc@labvm:~$
```

- Gunakan perintah **ls** ditambahkan dengan argument **labs** untuk melihat isi dari direktori **labs**.

```
devasc@labvm:~$ ls labs
devnet-src
devasc@labvm:~$
```

- Gunakan perintah **ls** dengan ditambah **-l** , untuk menampilkan isi dari directory lengkap dengan jumlah direktori, kredensial directory, waktu.

```
devasc@labvm:~$ ls -l
total 40
drwxr-xr-x 2 devasc devasc 4096 Mar 30 21:25 Desktop
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Documents
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Downloads
drwxr-xr-x 5 devasc devasc 4096 Mar 30 21:21 labs
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Music
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Pictures
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Public
```

```
drwxr-xr-x 5 devasc devasc 4096 Mar 30 21:24 snap
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Templates
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Videos
devasc@labvm:~$
```

- d. Gunakan perintah **ls** ditambah dengan -r , untuk menampilkan isi dari directory saat ini  
devasc@labvm:~\$ **ls -r**

```
Videos snap Pictures labs Documents
Templates Public Music Downloads Desktop
devasc@labvm:~$
```

- e. Jalankan perintah **ls -lr**

```
total 40
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Videos
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Templates
drwxr-xr-x 5 devasc devasc 4096 Mar 30 21:24 snap
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Public
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Pictures
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Music
drwxr-xr-x 5 devasc devasc 4096 Mar 30 21:21 labs
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Downloads
drwxr-xr-x 2 devasc devasc 4096 Apr 15 19:09 Documents
drwxr-xr-x 2 devasc devasc 4096 Mar 30 21:25 Desktop
devasc@labvm:~$
```

- f. Jalankan perintah : **man ls**

(The command line disappears and the manual page for ls opens.)  
LS(1) User Commands LS(1)

## NAME

**ls** - list directory contents

## SYNOPSIS

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

## DESCRIPTION

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

Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

Mandatory arguments to long options are mandatory for short options too.

**-a, --all**

do not ignore entries starting with .

**-A, --almost-all**

do not list implied . and ..

**--author**

Manual page ls(1) line 1 (press h for help or q to quit)

- g. Jalankan perintah **ls - -help**

```
devasc@labvm:~$ ls --help
Usage: ls [OPTION]... [FILE]...
List information about the FILEs (the current directory by default).
Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.
```

Mandatory arguments to long options are mandatory for short options too.

-a, --all do not ignore entries starting with .

-A, --almost-all do not list implied . and ..

(Output Omitted)

```
devasc@labvm:~$
```

- h. Ketikkan perintah : **pwd**

```
devasc@labvm:~$ pwd
```

```
/home/devasc
```

```
devasc@labvm:~$
```

- i. Gunakan perintah **cd** untuk pindah ke direktori /home/devasc/Documents

```
devasc@labvm:~$ cd Documents
```

```
devasc@labvm:~/Documents$
```

- j. Gunakan perintah **cd /** , untuk Kembali ke directory root.

```
devasc@labvm:~/Documents$ cd /
```

```
devasc@labvm:$ pwd
```

```
/
```

```
devasc@labvm:$
```

- k. Jalankan perintah : **cd /home/devasc/Documents/**

```
devasc@labvm:$ cd /home/devasc/Documents/
```

```
devasc@labvm:~/Documents$
```

- l. Jalankan perintah : **cd ..**

```
devasc@labvm:~/Documents$ cd ..
```

```
devasc@labvm:~$ pwd
```

```
/home/devasc
```

```
devasc@labvm:~$
```

Langkah 3 : Gunakan perintah super user untuk akses administrative

- a. Jalankan perintah **sudo apt-get update**

Perintah ini digunakan untuk melakukan update terhadap package yang telah terinstall di system operasi VM (linux)

```
devasc@labvm:~$ sudo apt-get update
```

```
Get:1 http://security.ubuntu.com/ubuntu focal-security InRelease [97.9 kB]
```

```
Get:2 http://us.archive.ubuntu.com/ubuntu focal InRelease [265 kB]
```

```
Get:3 http://us.archive.ubuntu.com/ubuntu focal-updates InRelease [89.1 kB]
```

```
Get:4 http://us.archive.ubuntu.com/ubuntu focal-backports InRelease [89.2 kB]
```

```
Get:5 http://us.archive.ubuntu.com/ubuntu focal/main i386 Packages [723 kB]
```

```
Get:6 http://us.archive.ubuntu.com/ubuntu focal/main amd64 Packages [981 kB]
```

(Output Omitted)

```
Fetched 677 kB in 2s (346 kB/s)
```

```
Reading package lists... Done
```

```
devasc@labvm:~$
```

## Bagian 3 : Review File Management

### Langkah 1 : Riview File Permission

- a. Gunakan perintah **ls Desktop -l**

```
devasc@labvm:~$ ls Desktop -l
total 28
-rwxr-xr-x 1 devasc devasc 1095 Mar 30 21:24 chromium_chromium.desktop
-rwxr-xr-x 1 devasc devasc 401 Mar 30 21:25 cisco-packet-tracer_cisco-pacet-tracer.desktop
-rwxr-xr-x 1 devasc devasc 776 Mar 30 21:23 code.desktop
-rwxr-xr-x 1 devasc devasc 373 Mar 30 21:25 drawio_drawio.desktop
-rwxr-xr-x 1 devasc devasc 250 Mar 30 21:21 exo-terminal-emulator.desktop
-rwxr-xr-x 1 devasc devasc 99 Mar 30 21:21 labs.desktop
-rwxr-xr-x 1 devasc devasc 334 Mar 30 21:24 postman_postman.desktop
devasc@labvm:~$
```

- b. Setelah menjalankan perintah pada option a, jelaskan di video anda arti dari tipe permission "r", "w" dan "x".

### Langkah 2 : Ubah file permission dan ownership

- a. Gunakan perintah **cd** untuk pindah ke directory Documents

```
devasc@labvm:~$ cd Documents/
devasc@labvm:~/Documents$
```

- b. Jalankan perintah : **echo "ls ../Desktop" > myfile.sh**

```
devasc@labvm:~/Documents$ echo "ls ../Desktop" > myfile.sh
devasc@labvm:~/Documents$
```

- c. Jalankan perintah : **cat myfile.sh**

```
devasc@labvm:~/Documents$ cat myfile.sh
ls ../Desktop
devasc@labvm:~/Documents$
```

- d. Jalankan perintah : **./myfile.sh**

```
devasc@labvm:~/Documents$ ./myfile.sh
bash: ./myfile.sh: Permission denied
```

- e. Gunakan perintah **ls -l myfile.sh** untuk melihat permission file saat ini.

```
devasc@labvm:~/Documents$ ls -l myfile.sh
-rw-rw-r-- 1 devasc devasc 14 Apr 16 12:46 myfile.sh
```

- f. Gunakan perintah **chmod +x myfile.sh** , digunakan untuk mengeksecure file

```
devasc@labvm:~/Documents$ chmod +x myfile.sh
devasc@labvm:~/Documents$
```

- g. Jalankan perintah **./myfile.sh**

```
devasc@labvm:~/Documents$ ./myfile.sh
chromium_chromium.desktop          exo-terminal-emulator.desktop
cisco-packet-tracer_cisco-pacet-tracer.desktop  labs.desktop
code.desktop                         postman_postman.desktop
drawio_drawio.desktop
devasc@labvm:~/Documents$
```

- h. Jalankan perintah **sudo chown root myfile.sh** untuk mengubah ownership file

```
devasc@labvm:~/Documents$ sudo chown root myfile.sh
devasc@labvm:~/Documents$
```

- i. Jalankan perintah **ls -l**

```
devasc@labvm:~/Documents$ ls -l  
total 4  
-rwxrwxr-x 1 root devasc 14 Apr 16 21:28 myfile.sh  
devasc@labvm:~/Documents$
```

Langkah 3 : Gunakan perintah untuk memintaikan/move file.

- a. Gunakan perintah mv untuk memindahkan file myfile.sh ke desktop, caranya :  
devasc@labvm:~/Documents\$ mv myfile.sh /home/devasc/Desktop/  
devasc@labvm:~/Documents\$
- b. Display isi dari folder Desktop, caranya :  
devasc@labvm:~/Documents\$ ls ./Desktop/  
chromium\_chromium.desktop exo-terminal-emulator.desktop  
cisco-packet-tracer\_cisco-pacet-tracer.desktop labs.desktop  
code.desktop myfile.sh  
drawio\_drawio.desktop postman\_postman.desktop  
devasc@labvm:~/Documents\$
- c. Kembalikan file ke folder Documents, caranya : jalankan perintah :  
devasc@labvm:~/Documents\$ mv ./Desktop/myfile.sh myfile.sh  
devasc@labvm:~/Documents\$
- d. Gunakan perintah mv untuk mengganti nama file , caranya jalnkan perintah :  
devasc@labvm:~/Documents\$ mv myfile.sh myfile\_renamed.sh  
devasc@labvm:~/Documents\$ ls  
myfile\_renamed.sh  
devasc@labvm:~/Documents\$

Langkah 5 : Gunakan perintah untuk melakukan copy file.

- a. Gunakan perintah cp,  
devasc@labvm:~/Documents\$ cp myfile\_renamed.sh myfile\_renamed\_and\_copied.sh  
devasc@labvm:~/Documents\$ ls  
myfile\_renamed\_and\_copied.sh myfile\_renamed.sh  
devasc@labvm:~/Documents\$
- b. Gunakan perintah rm untuk membuang/meremove/menghapus file.  
devasc@labvm:~/Documents\$ rm myfile\_renamed\_and\_copied.sh  
devasc@labvm:~/Documents\$ ls  
mbr.img myfile\_renamed.sh  
devasc@labvm:~/Documents\$

Langkah 6 : Gunakan standard output : perintah echo >

- a. Gunakan perintah > untuk meredirect , caranya :  
devasc@labvm:~\$ echo "Linux is AWESOME!" > linux.txt  
devasc@labvm:~\$  
perintah diatas adalah untuk menuliskan kalimat "Linux is AWESOME!" ke dalam file linux.txt
- b. Gunakan perintah cat > , untuk menyalin isi linux.txt ke linux2.txt  
devasc@labvm:~\$ cat linux.txt > linux2.txt  
devasc@labvm:~\$
- c. Jalakan perintah : car linux2.txt : untuk menampilkan isi file linux2.txt  
devasc@labvm:~\$ cat linux2.txt

- Linux is AWESOME!  
devasc@labvm:~\$
- d. Jalankan perintah :  
devasc@labvm:~\$ **echo "I LOVE Linux!" >> linux2.txt**  
devasc@labvm:~\$
- e. Jalankan perintah :  
devasc@labvm:~\$ **cat linux2.txt**  
Linux is AWESOME!  
I LOVE Linux!  
devasc@labvm:~\$  
**jelaskan di video kalian apa yang terjadi dari Langkah ke-e.**
- f. Jalankan perintah :  
devasc@labvm:~\$ **echo "Linux is POWERFUL!" > linux.txt**  
devasc@labvm:~\$
- g. Jalankan perintah :  
devasc@labvm:~\$ **cat linux.txt**  
Linux is POWERFUL!  
devasc@labvm:~\$

#### Langkah 7 : Menggunakan vi text editor

- a. Jalankan perintah :  
devasc@labvm:~\$ **vi linux2.txt**  
The following content is shown in the editor window:  
Linux is AWESOME!  
I LOVE Linux!
- b. Ubah tulisan menjadi  
Linux is Linux  
I am AWESOME!  
Caranya, masuk ke edit mode, dengan tekan : i (pada keyboard) , lalu edit.  
Kemudian "Esc" dan ketikkan di keyboard anda ":wq" (artinya perubahan anda akan disimpan dan setelah itu keluar dari vi editor).
- c. Jalankan perintah :  
devasc@labvm:~\$ **cat linux3.txt**  
Linux is Linux  
I am AWESOME!  
devasc@labvm:~\$

#### Bagian 4 : SKIP

#### Bagian 5 : Review Sistem administrasi

#### Langkah 1 : melakukan shutdown computer, perintahnya :

- a. Jalankan perintah **shutdown now**  
devasc@labvm:~\$ **shutdown now**
- b. Gunakan perintah **date** untuk cek tanggal,  
devasc@labvm:~\$ **date**  
Fri 17 Apr 2020 08:53:20 PM UTC  
devasc@labvm:~\$

- c. Jalankan perintah :

```
devasc@labvbm:~$ shutdown +1 "Come back soon!"  
Shutdown scheduled for Fri 2020-04-17 20:57:13 UTC, use 'shutdown -c' to cancel.  
devasc@labvbm:~$ shutdown -c  
devasc@labvbm:~$
```

Langkah 2 : melihat network configuration

- a. devasc@labvbm:~\$ **ip address**

```
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default  
qlen 1000  
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00  
    inet 127.0.0.1/8 scope host lo  
        valid_lft forever preferred_lft forever  
    inet6 ::1/128 scope host  
        valid_lft forever preferred_lft forever  
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP  
group default qlen 1000  
    link/ether 08:00:27:ce:2b:8b brd ff:ff:ff:ff:ff:ff  
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic enp0s3  
        valid_lft 75746sec preferred_lft 75746sec  
    inet6 fe80::a00:27ff:fece:2b8b/64 scope link  
        valid_lft forever preferred_lft forever  
3: dummy0: <BROADCAST,NOARP,UP,LOWER_UP> mtu 1500 qdisc noqueue state UNKNOWN group default qlen 1000  
    link/ether 46:8b:41:b5:de:aa brd ff:ff:ff:ff:ff:ff  
    inet 192.0.2.1/32 scope global dummy0  
        valid_lft forever preferred_lft forever  
    inet 192.0.2.2/32 scope global dummy0  
        valid_lft forever preferred_lft forever  
    inet 192.0.2.3/32 scope global dummy0  
        valid_lft forever preferred_lft forever  
    inet 192.0.2.4/32 scope global dummy0  
        valid_lft forever preferred_lft forever  
    inet 192.0.2.5/32 scope global dummy0  
        valid_lft forever preferred_lft forever  
    inet6 fe80::448b:41ff:feb5:deaa/64 scope link  
        valid_lft forever preferred_lft forever  
devasc@labvbm:~$
```

- b. jalankan **ping**

```
devasc@labvbm:~$ ping -c 4 192.168.1.1  
PING 192.168.1.1 (192.168.1.1) 56(84) bytes of data.  
64 bytes from 192.168.1.1: icmp_seq=1 ttl=63 time=1.13 ms  
64 bytes from 192.168.1.1: icmp_seq=2 ttl=63 time=2.30 ms  
64 bytes from 192.168.1.1: icmp_seq=3 ttl=63 time=1.31 ms  
64 bytes from 192.168.1.1: icmp_seq=4 ttl=63 time=2.49 ms
```

--- 192.168.1.1 ping statistics ---

4 packets transmitted, 4 received, 0% packet loss, time 3005ms

```
rtt min/avg/max/mdev = 1.130/1.809/2.492/0.594 ms
```

```
devasc@labvm:~$
```

- c. jalankan perintah :

```
devasc@labvm:~$ ping -c 4 www.cisco.com
```

```
PING e2867.dsca.akamaiedge.net (23.204.11.200) 56(84) bytes of data.
```

```
64 bytes from a23-204-11-200.deploy.static.akamaitechnologies.com (23.204.11.200):
```

```
icmp_seq=1 ttl=58 time=185 ms
```

```
64 bytes from a23-204-11-200.deploy.static.akamaitechnologies.com (23.204.11.200):
```

```
icmp_seq=2 ttl=58 time=28.8 ms
```

```
64 bytes from a23-204-11-200.deploy.static.akamaitechnologies.com (23.204.11.200):
```

```
icmp_seq=3 ttl=58 time=28.8 ms
```

```
64 bytes from a23-204-11-200.deploy.static.akamaitechnologies.com (23.204.11.200):
```

```
icmp_seq=4 ttl=58 time=26.4 ms
```

```
--- e2867.dsca.akamaiedge.net ping statistics ---
```

```
4 packets transmitted, 4 received, 0% packet loss, time 3007ms
```

```
rtt min/avg/max/mdev = 26.443/67.339/185.363/68.147 ms
```

```
devasc@labvm:~$
```

### Langkah 3 : View Proses

- a. gunakan perintah **ps**.

```
devasc@labvm:~$ ps
```

PID	TTY	TIME	CMD
1416	pts/0	00:00:00	bash
1453	pts/0	00:00:00	ps

- b. gunakan perintah **ps -e**

```
devasc@labvm:~$ ps -e
```

PID	TTY	TIME	CMD
1 ?		00:00:01	systemd
2 ?		00:00:00	kthreadd
3 ?		00:00:00	rcu_gp
4 ?		00:00:00	rcu_par_gp
6 ?		00:00:00	kworker/0:0H-kblockd
7 ?		00:00:00	kworker/0:1-events
9 ?		00:00:00	mm_percpu_wq

(output omitted)

- c. jalankan perintah : **ps -e | more**

```
devasc@labvm:~$ ps -e | more
```

PID	TTY	TIME	CMD
1 ?		00:00:01	systemd
2 ?		00:00:00	kthreadd
3 ?		00:00:00	rcu_gp
4 ?		00:00:00	rcu_par_gp
6 ?		00:00:00	kworker/0:0H-kblockd
9 ?		00:00:00	mm_percpu_wq
10 ?		00:00:00	ksoftirqd/0

--More--

- d. Jalankan perintah **ps -ef**

```

devasc@labvm:~$ ps -ef
UID      PID  PPID C STIME TTY      TIME CMD
root      1    0 20:57 ?    00:00:01 /sbin/init
root      2    0 20:57 ?    00:00:00 [kthreadd]
root      3    2 20:57 ?    00:00:00 [rcu_gp]
root      4    2 20:57 ?    00:00:00 [rcu_par_gp]
root      6    2 20:57 ?    00:00:00 [kworker/0:0H-kblockd]
root      9    2 20:57 ?    00:00:00 [mm_percpu_wq]
root     10    2 20:57 ?    00:00:00 [ksoftirqd/0]
root     11    2 20:57 ?    00:00:01 [rcu_sched]
(output omitted)

```

#### Langkah 4 : manage package

- a. Gunakan perintah **sudo apt-get update**

```

devasc@labvm:~$ sudo apt-get update
Hit:1 http://security.ubuntu.com/ubuntu focal-security InRelease
Get:2 http://us.archive.ubuntu.com/ubuntu focal InRelease [265 kB]
Hit:3 http://us.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:4 http://us.archive.ubuntu.com/ubuntu focal-backports InRelease
Get:5 http://us.archive.ubuntu.com/ubuntu focal/main i386 Packages [721 kB]
Get:6 http://us.archive.ubuntu.com/ubuntu focal/main amd64 Packages [974 kB]
Get:7 http://us.archive.ubuntu.com/ubuntu focal/main Translation-en [506 kB]
(output omitted)

```

- b. Jalankan perintah ini :

```

devasc@labvm:~$ apt-cache search speed test
(output omitted)
smalt-examples - Sequence Mapping and Alignment Tool (examples)
speedtest-cli - Command line interface for testing internet bandwidth using speedtest.net
sup - Software Upgrade Protocol implementation
sysbench - multi-threaded benchmark tool for database systems
tcpreplay - Tool to replay saved tcpdump files at arbitrary speeds (output omitted)

```

- c. Jalankan perintah ini :

```

devasc@labvm:~$ sudo apt-get install speedtest-cli
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  speedtest-cli
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 23.9 kB of archives.
After this operation, 106 kB of additional disk space will be used.

```

```

Get:1 http://archive.ubuntu.com/ubuntu focal/universe amd64 speedtest-cli all 2.1.2-2
[23.9 kB]
Fetched 23.9 kB in 1s (43.9 kB/s)
Selecting previously unselected package speedtest-cli.
(output omitted)

```

- d. Jalankan perintah ini :

```

devasc@labvm:~$ speedtest-cli

```

```
Retrieving speedtest.net configuration...
Testing from Cable Company (192.168.100.21)...
Retrieving speedtest.net server list...
Selecting best server based on ping...
Hosted by Comcast (Albuquerque, NM) [494.76 km]: 48.636 ms
Testing download
speed.....Download: 90.87 Mbit/s
Testing upload speed.....Upload: 17.87 Mbit/s
devasc@labvm:~$e. Jalankan perintah :
devasc@labvm:~$ sudo apt-get upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following packages have been kept back:
  libnss-systemd libpam-systemd libsystemd0 libyelp0 linux-generic linux-headers-generic
  (output omitted)
f. Jalankan perintah sudo apt-get purge
devasc@labvm:~$ sudo apt-get purge speedtest-cli
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages will be REMOVED:
  speedtest-cli*
0 upgraded, 0 newly installed, 1 to remove and 0 not upgraded.
After this operation, 106 kB disk space will be freed.
Do you want to continue? [Y/n]
(Reading database ... 211937 files and directories currently installed.)
Removing speedtest-cli (2.1.2-2) ...
  (output omitted)
```

#### Langkah 5 : update password

- a. Jalankan perintah :  
devasc@labvm:~\$ **passwd**  
Changing password for devasc.  
Current password:  
New password:  
Retype new password:  
passwd: password updated successfully  
devasc@labvm:~\$
- b. Gunakan perintah passwd,  
devasc@labvm:~\$ **passwd -S**  
devasc P 04/17/2020 0 99999 7 -1  
devasc@labvm:~\$
- c. Jelaskan melalui video anda Langkah 5 dan 6.