

Program Keahlian: TKJ	Konfigurasi Manageable Switch melalui Menu	Nama: Bambang H. Gifari Azka D. Revan Faredha A.
Exp.: Diagnosa WAN		Kelas: XI TKJ-B
No. Exp.:		Instruktur: Neti Amalia,S.Pd Nusirwan Hakim, S.Pd

I. TUJUAN

- Siswa dapat membedakan dummy switch dengan manageable switch
- Siswa dapat melakukan konfigurasi manageable switch menggunakan berbagai macam merk switch (D-Link, cisco catalyst, dan Level One)
- Siswa dapat melakukan konfigurasi menggunakan CLI, web based, menu, dan juga di packet tracer.

II. PENDAHULUAN

Manageable Switch adalah jenis switch ‘pintar’ berkemampuan tinggi yang memiliki fitur -fitur serta konfigurasi-konfigurasi yang dibutuhkan dalam jaringan berkebutuhan tinggi. Tidak seperti saudaranya yang bernama Unmanageable Switch , dimana unmanageable switch ini tidak bisa diatur lebih lanjut dan hanya bisa melakukan tugas dasarnya sebagai switch.

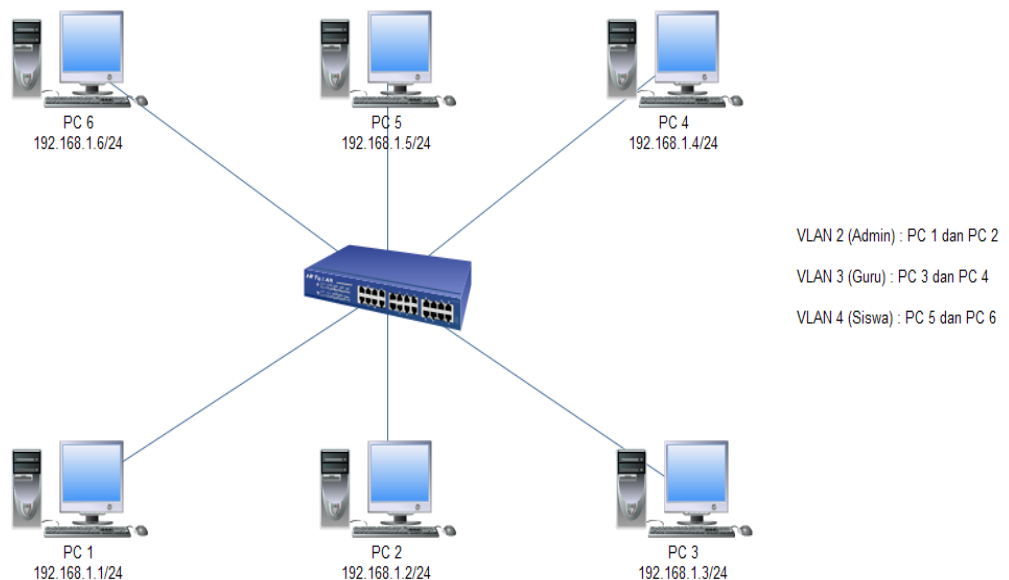
Dari sekian fitur yang ditawarkan, satu yang dalam laporan ini akan kita bahas pada saat ini adalah fitur VLAN, dimana LAN dapat diatur terlihat seperti satu jaringan secara fisik, tetapi secara logika tidak terhubung (berbeda jaringan secara virtual).

III. ALAT & BAHAN

- a. Manageable Switch D-Link
- b. Manageable Switch Level One
- c. 2 buah PC
- d. Kabel UTP (Straight)
- e. Kabel Serial
- f. Software Network Simulator (ex. Packet Tracer)

IV. LANGKAH KERJA

- a. Siapkan Alat dan Bahan yang dibutuhkan.
- b. Siapkan topologi jaringan dan rencana vlan. Dalam pengujian kali ini hanya menggunakan 2 PC yang kabelnya dipindah-pindahkan pada saat pengujian berdasarkan port karena keterbatasan waktu dan keterbatasan media.



- c. Sambungkan kabel serial switch dengan PC.
- d. Masuk ke manageable switch menggunakan hyper terminal (windows xp) atau gtkterm untuk pengguna Linux Ubuntu.
- e. Setelah berhasil masuk ke manageable switch tadi, langkah selanjutnya yaitu login dengan user root dan password root.



The screenshot shows a terminal window with a black background and white text. At the top, it says "LevelOne GSW-2472TGX". Below this is a menu titled "Switch Main Menu" with a list of options: 1. Port Status, 2. Port Configuration, 3. Trunk Configuration, 4. VLAN Configuration, 5. Port Monitoring Configuration, 6. QoS Configuration, 7. Bandwidth Control, 8. Misc Operation, and 0. Logout. The first option, "1. Port Status", is highlighted with a white cursor. At the bottom of the terminal window, there is a status bar with various keyboard shortcuts and hardware status indicators.

```
LevelOne GSW-2472TGX

File Configuration Control signals View Help

Switch Main Menu
=====
1. Port Status
2. Port Configuration
3. Trunk Configuration
4. VLAN Configuration
5. Port Monitoring Configuration
6. QoS Configuration
7. Bandwidth Control
8. Misc Operation
0. Logout

ArrowKey/TAB/BACK=Move SPACE=Toggle ENTER=Select ESC=Back
/dev/ttyS0: 9600,8,N,1 DTR RTS CTS CD DSR RI
```

- f. Setelah login, dilanjutkan dengan mengecek port yang ada pada switch untuk memastikan bahwa switch belum terkonfigurasi sebelumnya.

```
File Configuration Control signals View Help

Port Status
=====

Port      Enable  Link  Spd  Flow
Dpx      Ctrl

Port.01 Enable  Down  -----
Port.02 Enable  Down  -----
Port.03 Enable  Down  -----
Port.04 Enable  Down  -----
Port.05 Enable  Down  -----
Port.06 Enable  Down  -----
Port.07 Enable  Down  -----
Port.08 Enable  Down  -----
Port.09 Enable  Down  -----
Port.10 Enable  Down  -----
Port.11 Enable  Down  -----
Port.12 Enable  Down  -----
Port.13 Enable  Down  -----
Port.14 Enable  Down  -----
Port.15 Enable  Down  -----
Port.16 Enable  Down  -----
Port.17 Enable  Down  -----
Port.18 Enable  Down  -----
Port.19 Enable  Down  -----
Port.20 Enable  Down  -----
Port.21 Enable  Down  -----
Port.22 Enable  Down  -----
Port.23 Enable  Down  -----
Port.24 Enable  Down  -----
Port.25 Enable  Down  -----
Port.26 Enable  Down  -----

Actions-> <Quit> <Refresh>

ArrowKey/TAB/BACK=Move SPACE=Toggle ENTER=Select ESC=Back
/dev/ttyS0 : 9600,8,N,1 DTR RTS CTS CD DSR RI
```

- g. Setelah dicek, kembali ke menu utama dan pilih vlan configuration lalu pilih kembali vlan configuration dan lakukan konfigurasi vlan. Mulai dengan mengubah mode vlan menjadi port based yang berfungsi untuk mengklasifikasikan vlan berdasarkan port.

```
File Configuration Control signals View Help

VLAN Configuration
=====

VLAN Mode : PortBased

VLAN Group List :
-----

Actions-> <Quit> <Edit> <Add> <Delete>

Press SPACE to select and ENTER to set mode
ArrowKey/TAB/BACK=Move SPACE=Toggle ENTER=Select ESC=Back
/dev/ttyS0 : 9600,8,N,1 DTR RTS CTS CD DSR RI
```

- h. Lakukan konfigurasi vlan dengan vlan id 2 dan port 1 dan 2 menjadi anggotanya.

```
File Configuration Control signals View Help
Add a PortBased VLAN Group
=====

File Configuration Control signals View Help
Add a PortBased VLAN Group
=====

Group ID : [3 ] (1~255 )

VLAN Group Member :
-----
Port.01----- Port.10----- Port.19-----
Port.02----- Port.11----- Port.20-----
Port.03Member  Port.12----- Port.21-----
Port.04Member  Port.13----- Port.22-----
Port.05----- Port.14----- Port.23-----
Port.06----- Port.15----- Port.24-----
Port.07----- Port.16----- Port.25-----
Port.08----- Port.17----- Port.26-----
Port.09----- Port.18-----

Actions-> <Quit> <Edit> <Save>
ArrowKey/TAB/BACK=Move SPACE=Toggle ENTER=Select ESC=Back
/dev/ttyS0 : 9600,8,N,1 DTR RTS CTS CD DSR RI
```

- i. Selanjutnya konfigurasi untuk vlan id 3 dengan port 3 dan 4 sebagai anggotanya.
- j. Dan terakhir konfigurasi vlan id 4 dengan port 5 dan 6 sebagai anggotanya.

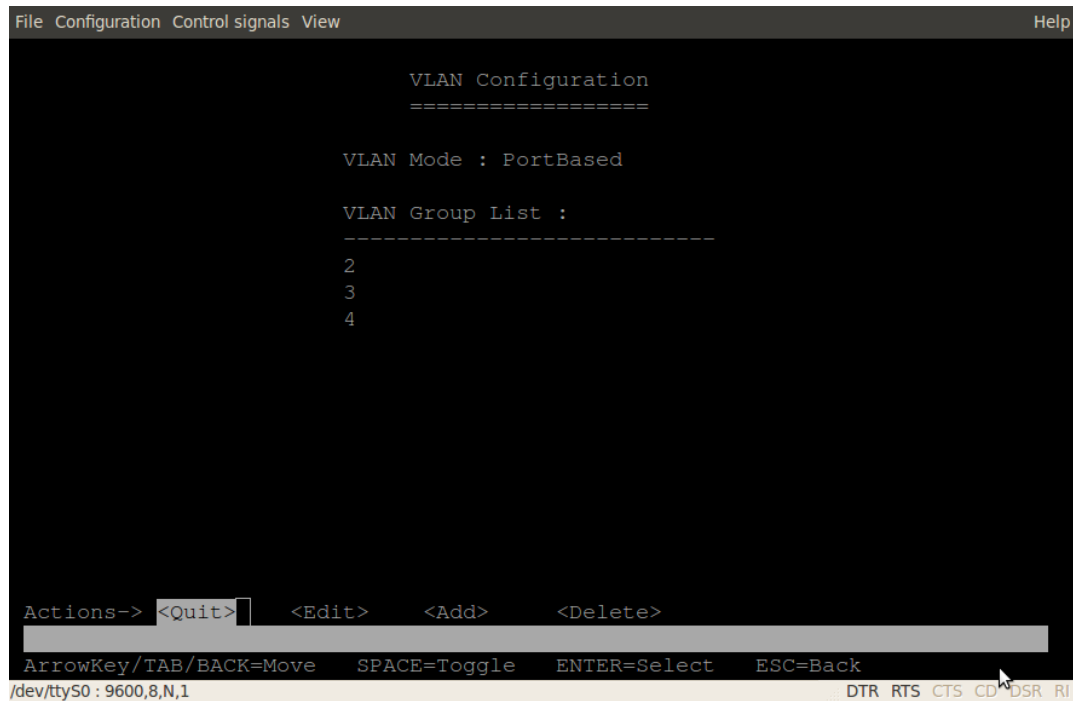
```
File Configuration Control signals View Help
Edit a PortBased VLAN Group
=====

Group ID : [4 ]

VLAN Group Member :
-----
Port.01----- Port.10----- Port.19-----
Port.02----- Port.11----- Port.20-----
Port.03----- Port.12----- Port.21-----
Port.04----- Port.13----- Port.22-----
Port.05Member  Port.14----- Port.23-----
Port.06Member  Port.15----- Port.24-----
Port.07----- Port.16----- Port.25-----
Port.08----- Port.17----- Port.26-----
Port.09----- Port.18-----

Actions-> <Quit> <Edit> <Save>
```

- k. Setelah selesai dan menyimpan konfigurasinya. Kembali ke menu sebelumnya dan cek apakah vlan id yang tadi kita buat sudah tersimpan.



```
File Configuration Control signals View Help

VLAN Configuration
=====

VLAN Mode : PortBased

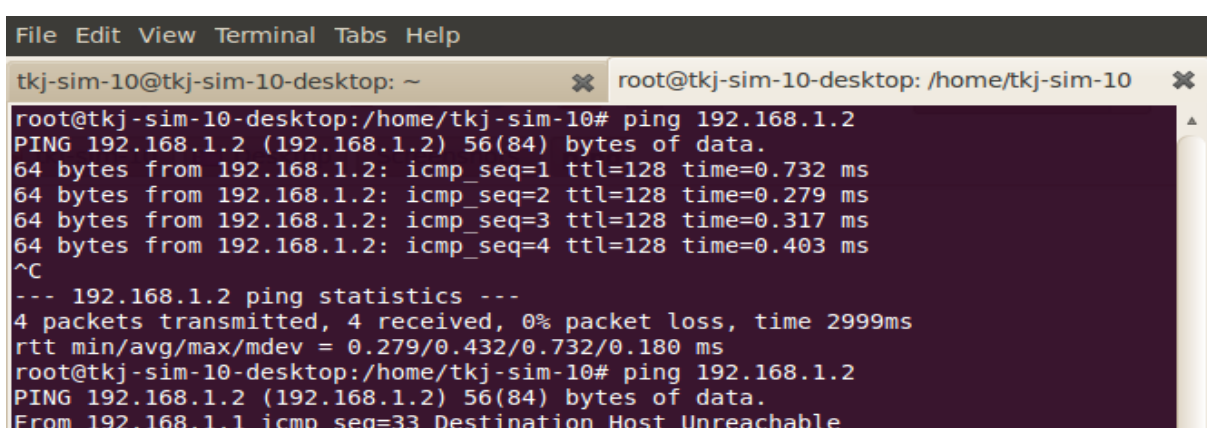
VLAN Group List :
-----
2
3
4

Actions-> <Quit> <Edit> <Add> <Delete>
ArrowKey/TAB/BACK=Move SPACE=Toggle ENTER=Select ESC=Back
/dev/ttyS0 : 9600,8,N,1 DTR RTS CTS CD DSR RI
```

- l. Setelah selesai dan konfigurasi vlan yang tadi kita buat berhasil, lanjutkan dengan pengujian antar port.
- m. Pengujian dilakukan dengan cara 2 buah PC yang terhubung melalui switch itu dipindah pindah portnya yaitu antara port 1 dengan port 2,4,6 begitu juga dengan port 3 dan port 5.
- n. Buatlah Laporannya

v. HASIL PENGAMATAN

- a. Hasil ping PC 1 ke PC 2 (PC 1 berada di port 1 dan PC 2 di port 2 lalu ke port 4 dan ke port 6).



```
File Edit View Terminal Tabs Help

tkj-sim-10@tkj-sim-10-desktop: ~ root@tkj-sim-10-desktop: /home/tkj-sim-10

root@tkj-sim-10-desktop:/home/tkj-sim-10# ping 192.168.1.2
PING 192.168.1.2 (192.168.1.2) 56(84) bytes of data.
64 bytes from 192.168.1.2: icmp_seq=1 ttl=128 time=0.732 ms
64 bytes from 192.168.1.2: icmp_seq=2 ttl=128 time=0.279 ms
64 bytes from 192.168.1.2: icmp_seq=3 ttl=128 time=0.317 ms
64 bytes from 192.168.1.2: icmp_seq=4 ttl=128 time=0.403 ms
^C
--- 192.168.1.2 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 2999ms
rtt min/avg/max/mdev = 0.279/0.432/0.732/0.180 ms
root@tkj-sim-10-desktop:/home/tkj-sim-10# ping 192.168.1.2
PING 192.168.1.2 (192.168.1.2) 56(84) bytes of data.
From 192.168.1.1 icmp_seq=33 Destination Host Unreachable
```

- b. Hasil ping PC 2 ke PC 1 (PC 1 berada di port 1 dan PC 2 di port 2 lalu ke port 4 dan ke port 6).

```
Administrator: C:\Windows\system32\cmd.exe

C:\Users\Revanfar>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Revanfar>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:
Request timed out.
Reply from 192.168.1.2: Destination host unreachable.
Request timed out.
Request timed out.

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 1, Lost = 3 (75% loss),

C:\Users\Revanfar>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.2: Destination host unreachable.
Request timed out.
Reply from 10.13.92.6: Destination host unreachable.
Reply from 10.13.92.6: Destination host unreachable.

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),

C:\Users\Revanfar>
```

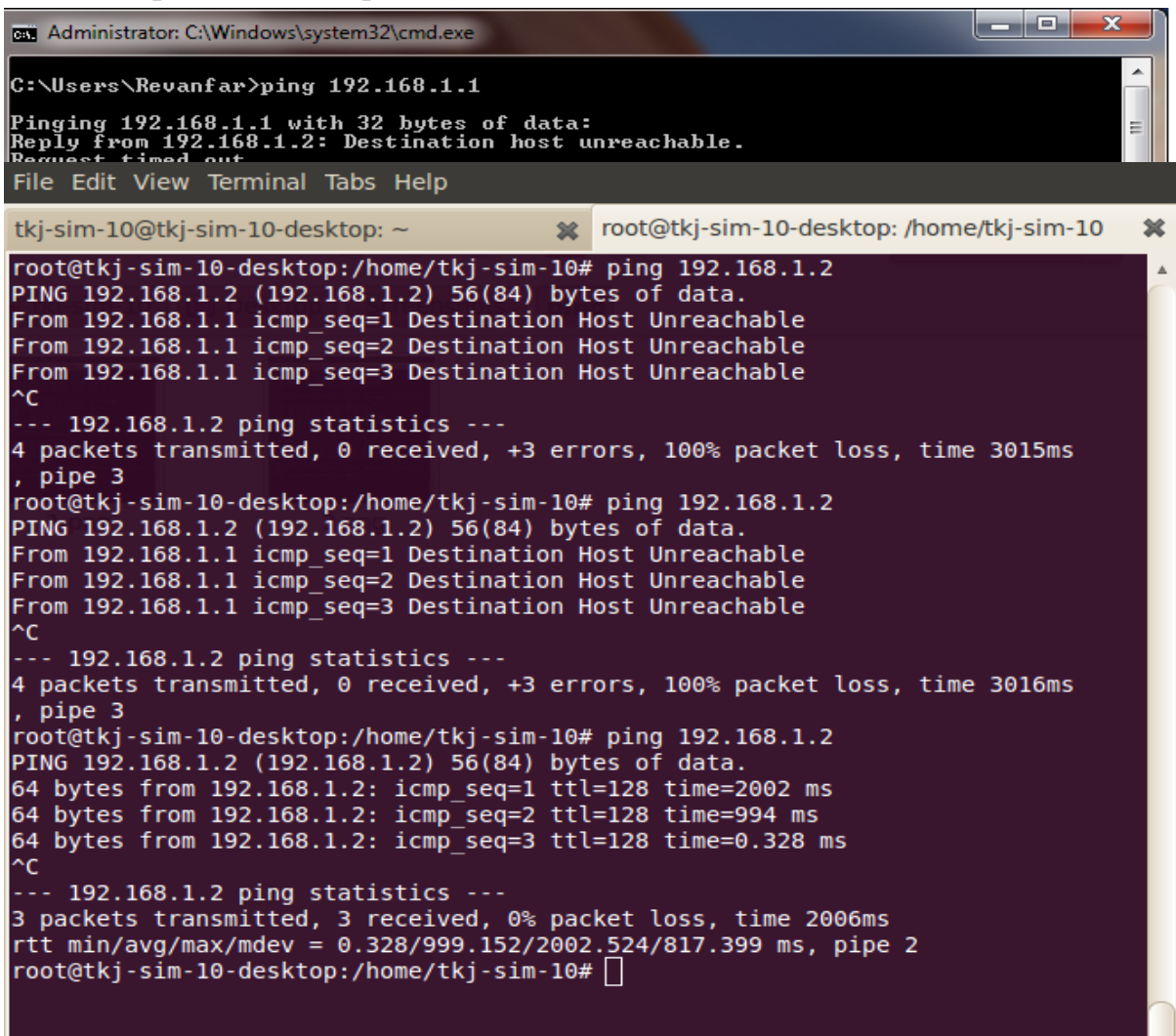
- c. Hasil ping PC 1 ke PC 2 (PC 1 berada di port 3 dan PC 2 di port 2 lalu ke port 4 dan ke port 6).

```
File Edit View Terminal Tabs Help

tkj-sim-10@tkj-sim-10-desktop: ~ root@tkj-sim-10-desktop: /home/tkj-sim-10

root@tkj-sim-10-desktop:/home/tkj-sim-10# ping 192.168.1.2
PING 192.168.1.2 (192.168.1.2) 56(84) bytes of data.
From 192.168.1.1 icmp_seq=23 Destination Host Unreachable
From 192.168.1.1 icmp_seq=24 Destination Host Unreachable
From 192.168.1.1 icmp_seq=25 Destination Host Unreachable
^C
--- 192.168.1.2 ping statistics ---
26 packets transmitted, 0 received, +3 errors, 100% packet loss, time 25192ms
, pipe 3
root@tkj-sim-10-desktop:/home/tkj-sim-10# ping 192.168.1.2
PING 192.168.1.2 (192.168.1.2) 56(84) bytes of data.
64 bytes from 192.168.1.2: icmp_seq=1 ttl=128 time=2.74 ms
64 bytes from 192.168.1.2: icmp_seq=2 ttl=128 time=0.458 ms
64 bytes from 192.168.1.2: icmp_seq=3 ttl=128 time=0.406 ms
64 bytes from 192.168.1.2: icmp_seq=4 ttl=128 time=0.376 ms
^C
--- 192.168.1.2 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3002ms
rtt min/avg/max/mdev = 0.376/0.996/2.747/1.011 ms
root@tkj-sim-10-desktop:/home/tkj-sim-10# ping 192.168.1.2
PING 192.168.1.2 (192.168.1.2) 56(84) bytes of data.
From 192.168.1.1 icmp_seq=33 Destination Host Unreachable
From 192.168.1.1 icmp_seq=34 Destination Host Unreachable
From 192.168.1.1 icmp_seq=35 Destination Host Unreachable
^C
--- 192.168.1.2 ping statistics ---
36 packets transmitted, 0 received, +3 errors, 100% packet loss, time 35271ms
, pipe 3
root@tkj-sim-10-desktop:/home/tkj-sim-10#
```

- d. Hasil ping PC 2 ke PC 1 (PC 1 berada di port 3 dan PC 2 di port 2 lalu ke port 4 dan ke port 6).



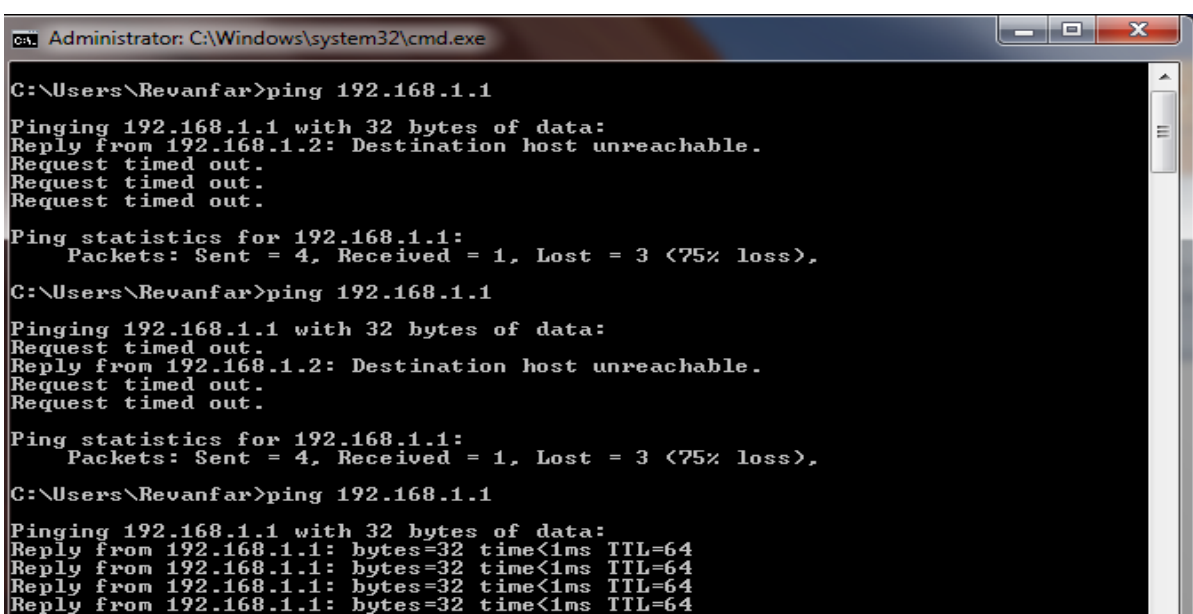
The image shows two overlapping terminal windows. The top window is a Windows command prompt titled 'Administrator: C:\Windows\system32\cmd.exe' with the user 'C:\Users\Revanfar'. It shows a failed ping to 192.168.1.1. The bottom window is a Linux terminal titled 'tkj-sim-10@tkj-sim-10-desktop: ~' with the user 'root@tkj-sim-10-desktop: /home/tkj-sim-10'. It shows three successful ping attempts to 192.168.1.2, each with detailed statistics including packet loss and round-trip times.

```
Administrator: C:\Windows\system32\cmd.exe
C:\Users\Revanfar>ping 192.168.1.1
Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.2: Destination host unreachable.
Request timed out.
File Edit View Terminal Tabs Help

tkj-sim-10@tkj-sim-10-desktop: ~ root@tkj-sim-10-desktop: /home/tkj-sim-10
root@tkj-sim-10-desktop:/home/tkj-sim-10# ping 192.168.1.2
PING 192.168.1.2 (192.168.1.2) 56(84) bytes of data.
From 192.168.1.1 icmp_seq=1 Destination Host Unreachable
From 192.168.1.1 icmp_seq=2 Destination Host Unreachable
From 192.168.1.1 icmp_seq=3 Destination Host Unreachable
^C
--- 192.168.1.2 ping statistics ---
4 packets transmitted, 0 received, +3 errors, 100% packet loss, time 3015ms
, pipe 3
root@tkj-sim-10-desktop:/home/tkj-sim-10# ping 192.168.1.2
PING 192.168.1.2 (192.168.1.2) 56(84) bytes of data.
From 192.168.1.1 icmp_seq=1 Destination Host Unreachable
From 192.168.1.1 icmp_seq=2 Destination Host Unreachable
From 192.168.1.1 icmp_seq=3 Destination Host Unreachable
^C
--- 192.168.1.2 ping statistics ---
4 packets transmitted, 0 received, +3 errors, 100% packet loss, time 3016ms
, pipe 3
root@tkj-sim-10-desktop:/home/tkj-sim-10# ping 192.168.1.2
PING 192.168.1.2 (192.168.1.2) 56(84) bytes of data.
64 bytes from 192.168.1.2: icmp_seq=1 ttl=128 time=2002 ms
64 bytes from 192.168.1.2: icmp_seq=2 ttl=128 time=994 ms
64 bytes from 192.168.1.2: icmp_seq=3 ttl=128 time=0.328 ms
^C
--- 192.168.1.2 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2006ms
rtt min/avg/max/mdev = 0.328/999.152/2002.524/817.399 ms, pipe 2
root@tkj-sim-10-desktop:/home/tkj-sim-10#
```

- e. Hasil ping PC 1 ke PC 2 (PC 1 berada di port 5 dan PC 2 di port 2 lalu ke port 4 dan ke port 6).

- f. Hasil ping PC 2 ke PC 1 (PC 1 berada di port 3 dan PC 2 di port 2 lalu ke port 4 dan ke port 6).



The image shows a Windows command prompt titled 'Administrator: C:\Windows\system32\cmd.exe' with the user 'C:\Users\Revanfar'. It shows two failed ping attempts to 192.168.1.1, each with detailed statistics showing 75% packet loss. The third attempt is partially visible at the bottom.

```
Administrator: C:\Windows\system32\cmd.exe
C:\Users\Revanfar>ping 192.168.1.1
Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.2: Destination host unreachable.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 1, Lost = 3 (75% loss),
C:\Users\Revanfar>ping 192.168.1.1
Pinging 192.168.1.1 with 32 bytes of data:
Request timed out.
Reply from 192.168.1.2: Destination host unreachable.
Request timed out.
Request timed out.
Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 1, Lost = 3 (75% loss),
C:\Users\Revanfar>ping 192.168.1.1
Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
```

VI. KESIMPULAN

- a. Konfigurasi vlan di manageable switch menggunakan cara menu lebih mudah dilakukan dibanding dengan cara command line interface.
- b. Hampir semua manageable switch dapat dikonfigurasi dengan mode menu ini.