

Nama : Nadya Ayu Widya

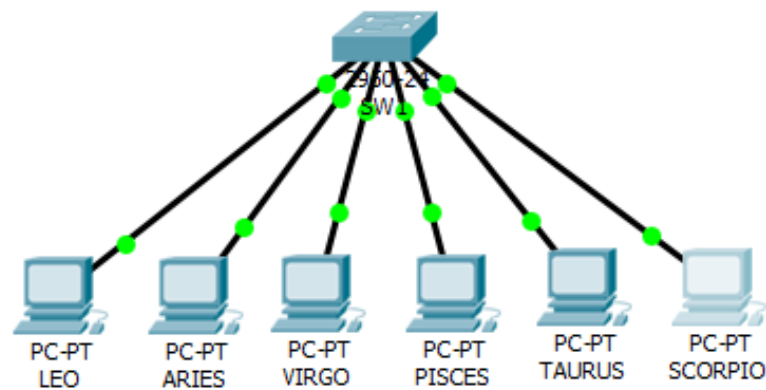
NIM : L200180099

## MODUL 4 Praktikum Jaringan Komputer

### KEGIATAN PRAKTIKUM

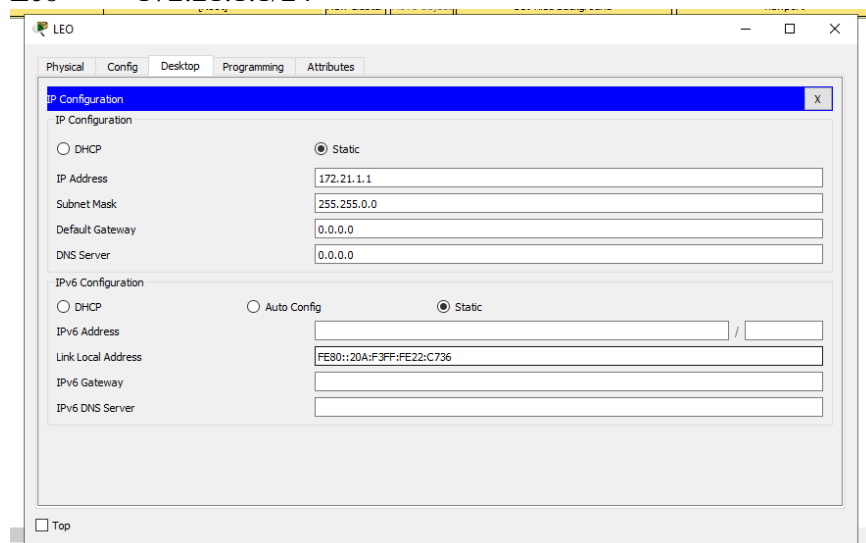
#### 1. Kegiatan 1. TOPOLOGI 1

- Menggunakan packet tracker buat topologi berikut ini dengan menggunakan switch
- Beri nama masing-masing perangkat dengan SW1(switch), Leo(PC0), Aries(PC1), Virgo(PC2), Pisces(PC3), Taurus(PC4), dan scorpio(PC5)



- Konfigurasi masing-masing PC dengan nama dan alamat IP

- Leo = 172.21.1.1/24



- Aries = 172.21.1.2/24

The screenshot shows the ARIES configuration window with the 'Config' tab selected. The 'IP Configuration' section is active, showing 'Static' as the selected option. The IP Address is 172.21.1.2, Subnet Mask is 255.255.0.0, Default Gateway is 0.0.0.0, and DNS Server is 0.0.0.0. The 'IPv6 Configuration' section is also visible, showing 'Static' as the selected option, with an empty IPv6 Address field, Link Local Address FE80::2D0:FFFF:FE03:D420, and empty fields for IPv6 Gateway and IPv6 DNS Server.

Field	Value
IP Address	172.21.1.2
Subnet Mask	255.255.0.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0
IPv6 Address	
Link Local Address	FE80::2D0:FFFF:FE03:D420
IPv6 Gateway	
IPv6 DNS Server	

- Virgo = 172.21.1.3/24

The screenshot shows the VIRGO configuration window with the 'Config' tab selected. The 'IP Configuration' section is active, showing 'Static' as the selected option. The IP Address is 172.21.1.3, Subnet Mask is 255.255.0.0, Default Gateway is 0.0.0.0, and DNS Server is 0.0.0.0. The 'IPv6 Configuration' section is also visible, showing 'Static' as the selected option, with an empty IPv6 Address field, Link Local Address FE80::290:2BFF:FEEC:B4A9, and empty fields for IPv6 Gateway and IPv6 DNS Server.

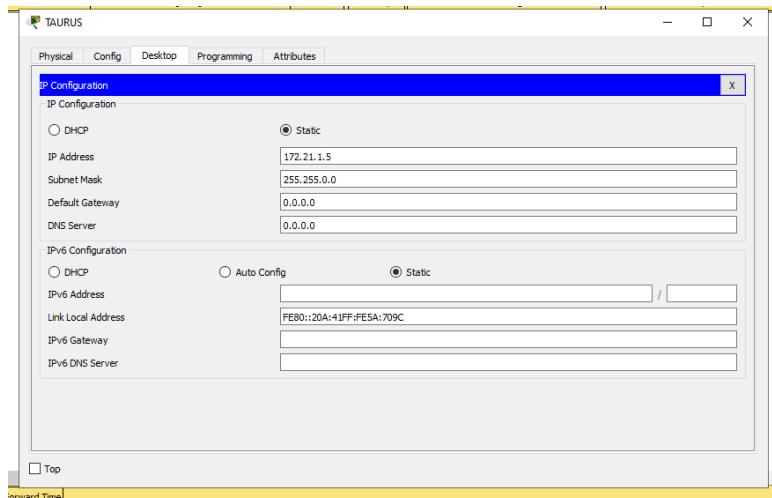
Field	Value
IP Address	172.21.1.3
Subnet Mask	255.255.0.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0
IPv6 Address	
Link Local Address	FE80::290:2BFF:FEEC:B4A9
IPv6 Gateway	
IPv6 DNS Server	

- Libra = 172.21.1.4/24

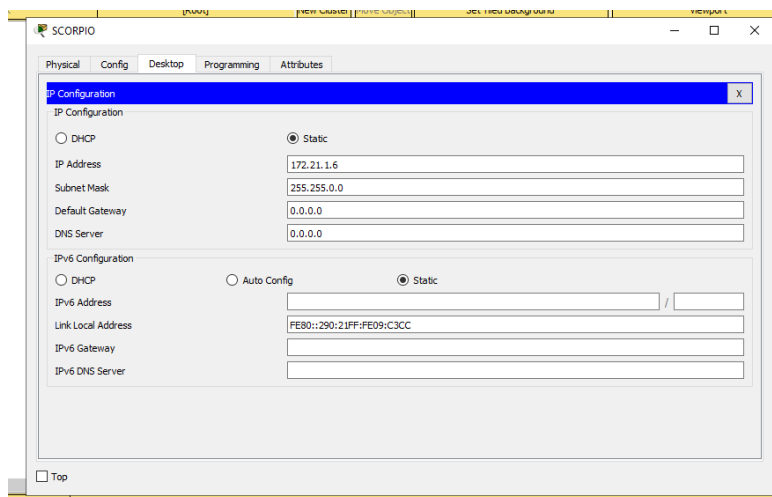
The screenshot shows the PISCES configuration window with the 'Config' tab selected. The 'IP Configuration' section is active, showing 'Static' as the selected option. The IP Address is 172.21.1.4, Subnet Mask is 255.255.0.0, Default Gateway is 0.0.0.0, and DNS Server is 0.0.0.0. The 'IPv6 Configuration' section is also visible, showing 'Static' as the selected option, with an empty IPv6 Address field, Link Local Address FE80::20D:B0FF:FE08:E049, and empty fields for IPv6 Gateway and IPv6 DNS Server.

Field	Value
IP Address	172.21.1.4
Subnet Mask	255.255.0.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0
IPv6 Address	
Link Local Address	FE80::20D:B0FF:FE08:E049
IPv6 Gateway	
IPv6 DNS Server	

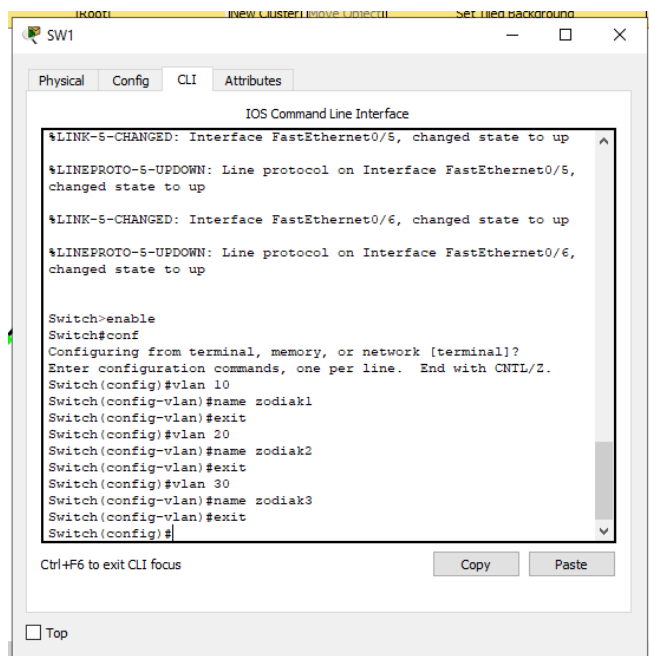
- Taurus = 172.21.1.5/24



- Scorpio = 172.21.1.6/24



- d. Konfigurasi pada switch dengan mode user atau mode privileged, buat 3 VLAN dengan nama zodiak1, zodiak2, dan zodiak3.

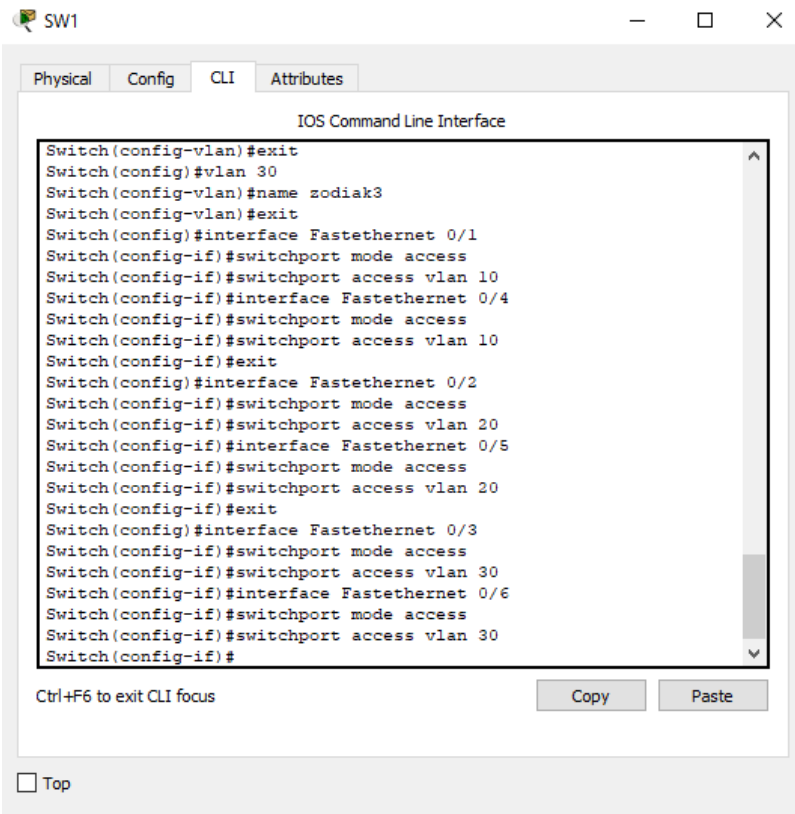


- e. Pada mode configuration, konfigurasi port-port switch ke dalam VLAN zodiak1, zodiak2, dan zodiak3.

Zodiak1 = leo dan libra

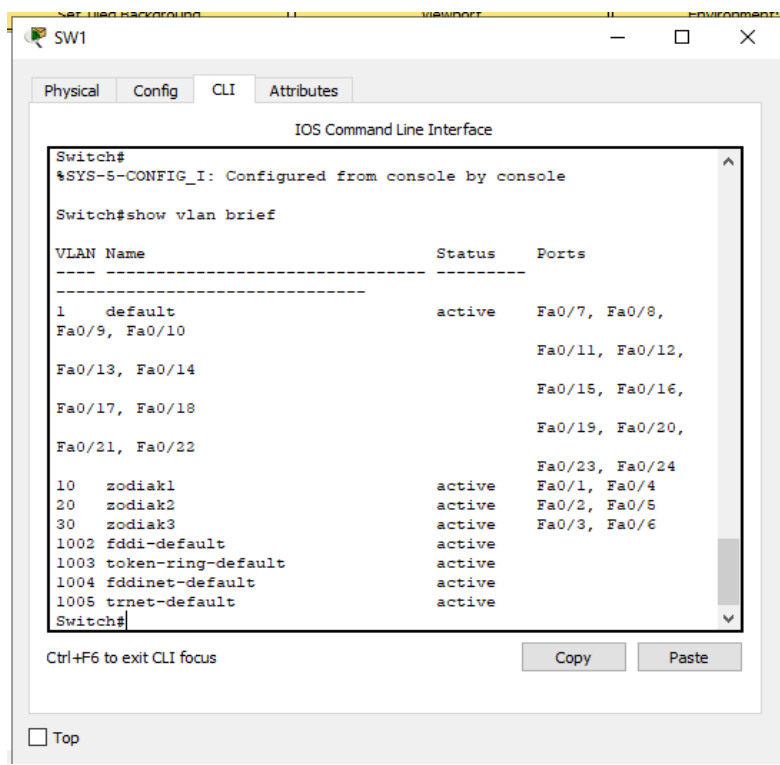
Zodiak2 = aries dan taurus

Zodiak3 = virgo dan scorpio

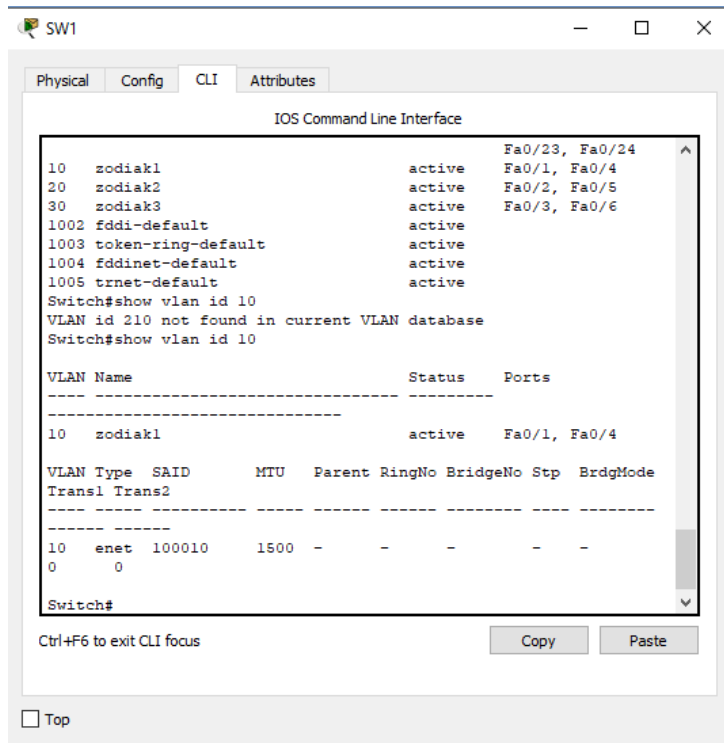


- f. Pada mode user atau mode privileged, lihat konfigurasi VLAN yang telah dibuat. Informasi VLAN keseluruhan

- Show vlan brief



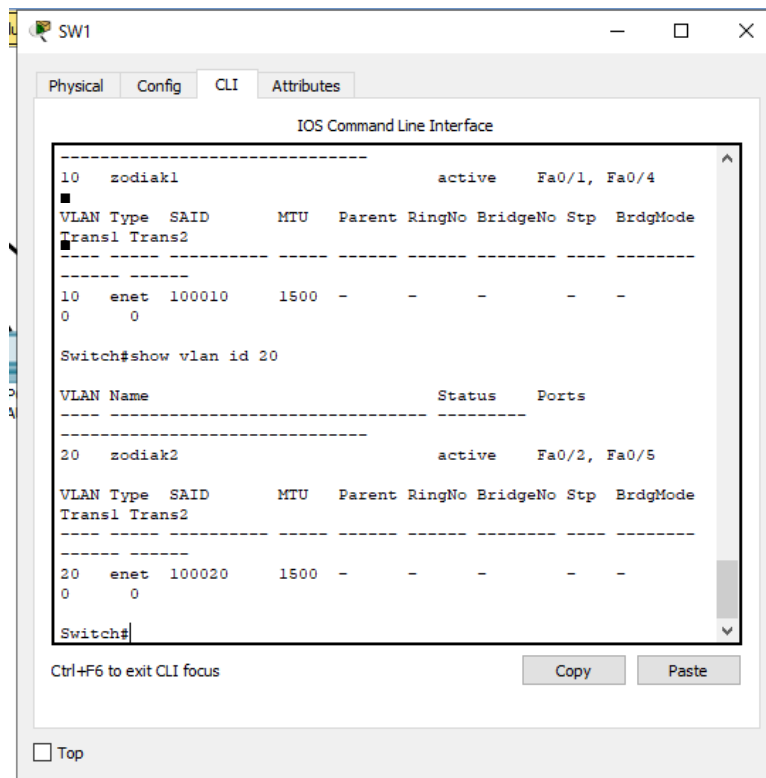
- Show vlan id 10



## Tugas 6A

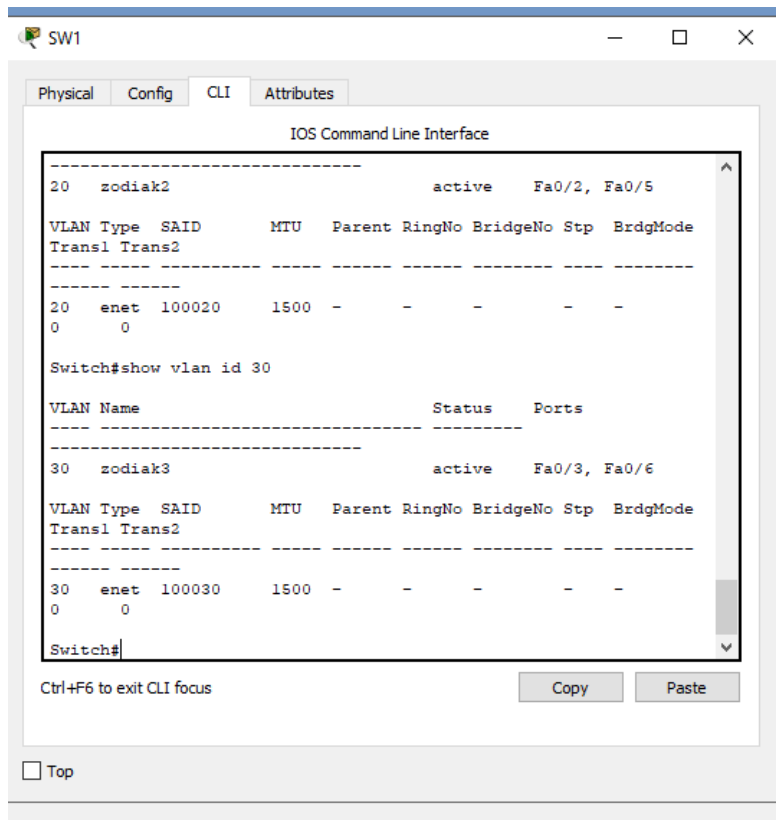
No	Variabel	Nilai
1.	Nomor VLAN	10
2.	Nama VLAN	zodiak1
3.	Port	Fa0/1, Fa0/4
4.	Status	Active

- Show vlan id 20



No	Variabel	Nilai
1.	Nomor VLAN	20
2.	Nama VLAN	zodiak2
3.	Port	Fa0/2, Fa0/5
4.	Status	Active

- Show vlan id 30



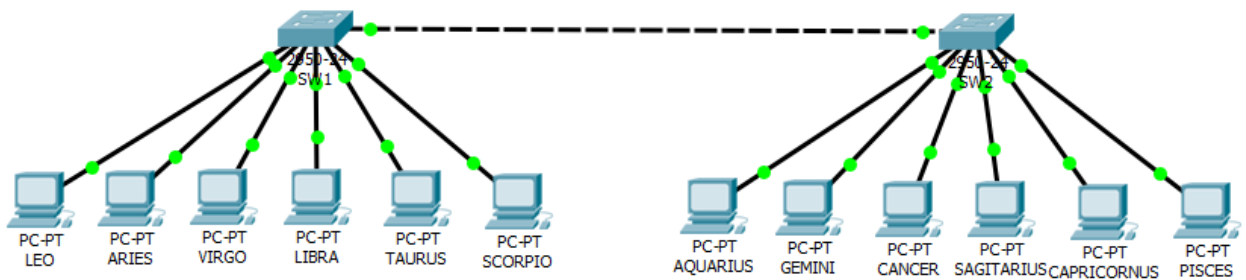
No	Variabel	Nilai
1.	Nomor VLAN	30
2.	Nama VLAN	zodiak3
3.	Port	Fa0/3, Fa0/6
4.	Status	Active

**Tugas 6B:** Jelaskan secara singkat hasil yang anda peroleh dari **tugas 6A**.

- Fa0/1 (Leo) dan Fa0/4 (Libra) berada pada VLAN 10, zodiak 1 dan berstatus active
- Fa0/2 (Aries) dan Fa0/5(Taurus) berada pada VLAN 20, zodiak 2, dan berstatus active
- Fa0/3 (Virgo) dan Fa0/6(Scorpio) berada pada VLAN 30, zodiak 3, dan berstatus active
- Port yang terdaftar dalam VLAN sesuai dengan konfigurasi yang telah dilakukan sebelumnya.

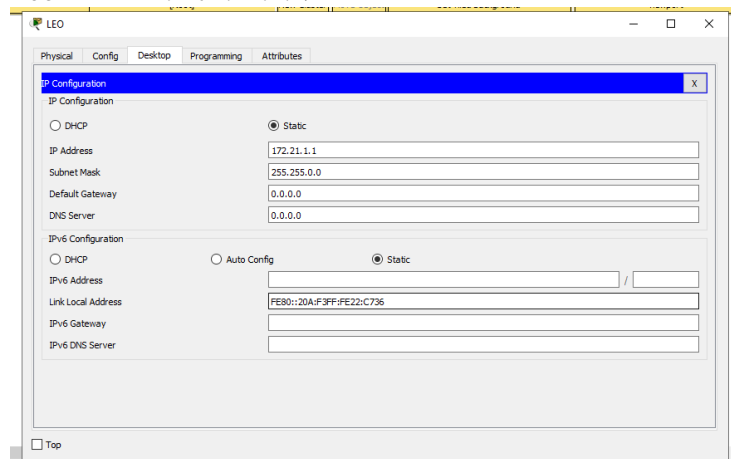
## 2. Kegiatan 2. TOPOLOGI 2

- Menggunakan cisco packet tracer buat topologi
- Buat topologi dengan menggunakan switch catalyst2950. Beri nama masing-masing perangkat dengan SW1(switch 1), Leo(PC0), Aries(PC1), Virgo(PC2), Pisces(PC3), Taurus(PC4), dan scorpio(PC5) untuk segmen switch 1
- Beri nama masing-masing perangkat dengan SW2(switch 2), Aquarius(PC6), Gemini(PC7), Cancer(PC8), Sagitarius(PC9), Carpiconus(PC10), dan Pisces(PC11) untuk segmen switch 2.

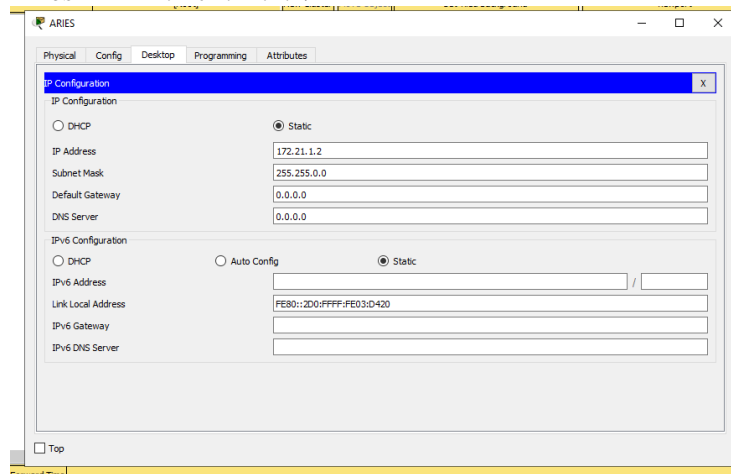


- Konfigurasi masing-masing PC dengan nama dan alamat IP berikut ini.

- Leo : 172.21.1.1/24



- Aries : 172.21.1.2/24



- **Virgo** : 172.21.2.1/24

The screenshot shows the VIRGO network configuration window. The 'Config' tab is active, and the 'IP Configuration' section is expanded. The 'Static' radio button is selected for both IP and IPv6 configurations. The IP Address is set to 172.21.2.1, Subnet Mask to 255.255.0.0, Default Gateway to 0.0.0.0, and DNS Server to 0.0.0.0. The IPv6 Address is empty, Link Local Address is FE80::202:17FF:FE19:20E5, IPv6 Gateway is empty, and IPv6 DNS Server is empty.

IP Configuration	
<input type="radio"/> DHCP	<input checked="" type="radio"/> Static
IP Address	172.21.2.1
Subnet Mask	255.255.0.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

IPv6 Configuration		
<input type="radio"/> DHCP	<input type="radio"/> Auto Config	<input checked="" type="radio"/> Static
IPv6 Address		
Link Local Address	FE80::202:17FF:FE19:20E5	
IPv6 Gateway		
IPv6 DNS Server		

- **Libra** : 172.21.2.2/24

The screenshot shows the LIBRA network configuration window. The 'Config' tab is active, and the 'IP Configuration' section is expanded. The 'Static' radio button is selected for both IP and IPv6 configurations. The IP Address is set to 172.21.2.2, Subnet Mask to 255.255.0.0, Default Gateway to 0.0.0.0, and DNS Server to 0.0.0.0. The IPv6 Address is empty, Link Local Address is FE80::260:70FF:FE96:ACC6, IPv6 Gateway is empty, and IPv6 DNS Server is empty.

IP Configuration	
<input type="radio"/> DHCP	<input checked="" type="radio"/> Static
IP Address	172.21.2.2
Subnet Mask	255.255.0.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

IPv6 Configuration		
<input type="radio"/> DHCP	<input type="radio"/> Auto Config	<input checked="" type="radio"/> Static
IPv6 Address		
Link Local Address	FE80::260:70FF:FE96:ACC6	
IPv6 Gateway		
IPv6 DNS Server		

- **Taurus** : 172.21.3.1/24

The screenshot shows the TAURUS network configuration window. The 'Config' tab is active, and the 'IP Configuration' section is expanded. The 'Static' radio button is selected for both IP and IPv6 configurations. The IP Address is set to 172.21.3.1, Subnet Mask to 255.255.0.0, Default Gateway to 0.0.0.0, and DNS Server to 0.0.0.0. The IPv6 Address is empty, Link Local Address is FE80::20A:F3FF:FE74:E25D, IPv6 Gateway is empty, and IPv6 DNS Server is empty.

IP Configuration	
<input type="radio"/> DHCP	<input checked="" type="radio"/> Static
IP Address	172.21.3.1
Subnet Mask	255.255.0.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

IPv6 Configuration		
<input type="radio"/> DHCP	<input type="radio"/> Auto Config	<input checked="" type="radio"/> Static
IPv6 Address		
Link Local Address	FE80::20A:F3FF:FE74:E25D	
IPv6 Gateway		
IPv6 DNS Server		



- Scorpio : 172.21.3.2/24

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.3.2

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address

Link Local Address FE80::2E0:F7FF:FE29:EB6D

IPv6 Gateway

IPv6 DNS Server

☐ Top

- Aquarius : 172.21.1.3/24

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.1.3

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address

Link Local Address FE80::20A:41FF:FED0:C74

IPv6 Gateway

IPv6 DNS Server

☐ Top

- Gemini : 172.21.1.4/24

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.1.4

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address

Link Local Address FE80::260:5CFF:FEA2:89ED

IPv6 Gateway

IPv6 DNS Server

☐ Top

- Cancer : 172.21.2.3/24

CANCER

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 172.21.2.3

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::20A:F3FF:FE69:49A4

IPv6 Gateway

IPv6 DNS Server

Top

- Sagittarius : 172.21.2.4/24

PC10

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static This address is already used in the network.

IP Address

Subnet Mask

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::202:17FF:FE34:473B

IPv6 Gateway

IPv6 DNS Server

Top

- Capricornus : 172.21.3.3/24

PC10

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static This address is already used in the network.

IP Address 172.21.3.3

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

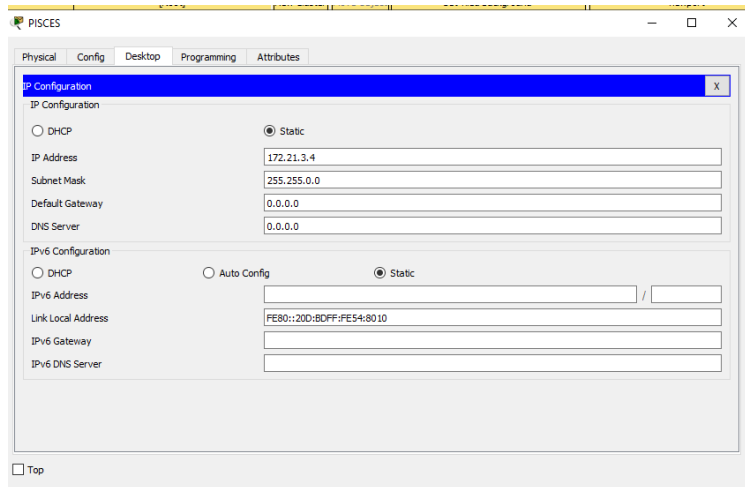
Link Local Address FE80::202:17FF:FE34:473B

IPv6 Gateway

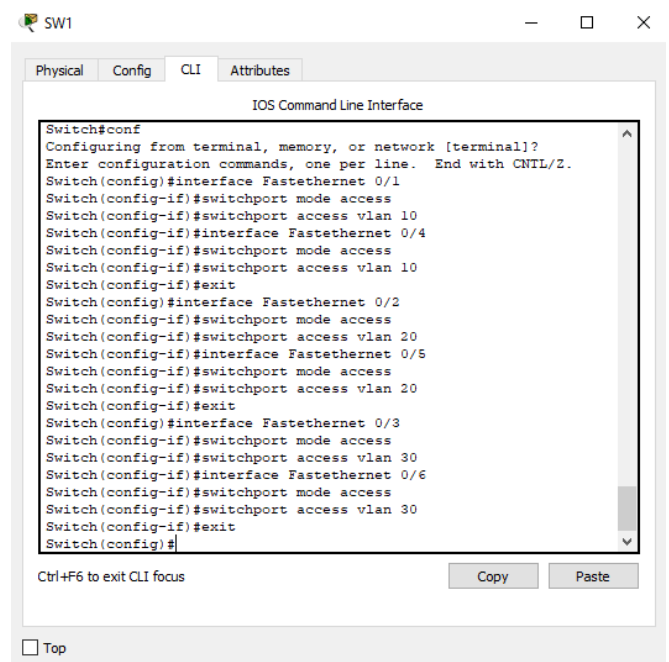
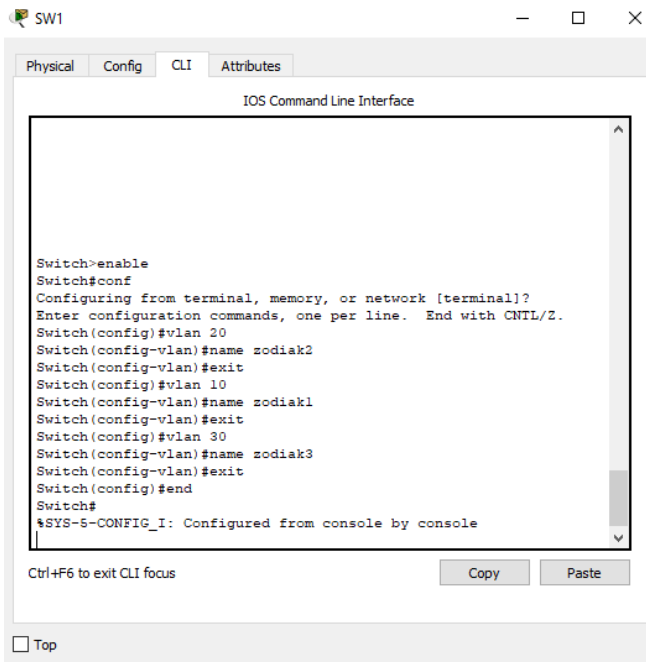
IPv6 DNS Server

Top

- Pisces : 172.21.3.4/24



e. Lakukan langkah 4 dan 5 laboratorium 1 untuk switch 1



f. Lakukan konfigurasi VLAN trunking pada switch 1.

```
Switch>enable
Switch#conf
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface FastEthernet 0/7
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7,
changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7,
changed state to up
exit
```

- g. Pada mode user atau mode privileged, lihat konfigurasi trunking yang telah dibuat.

```
Switch#show interface FastEthernet 0/7 switchport
Name: Fa0/7
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk private VLANs: none
Operational private-vlan: none
Trunking VLANs Enabled: ALL
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
Capture VLANs Allowed: ALL
```

```
Switch#show int trunk

Port      Mode      Encapsulation  Status        Native vlan
Fa0/7     on        802.1q         trunking      1

Port      Vlans allowed on trunk
Fa0/7     1-1005

Port      Vlans allowed and active in management domain
Fa0/7     1,10,20,30

Port      Vlans in spanning tree forwarding state and not pruned
Fa0/7     1,10,20,30
```

SW1

Physical Config CLI Attributes

IOS Command Line Interface

```
pruned
Fa0/7      1,10,20,30

Switch#show vlan

VLAN Name                Status    Ports
-----
1    default                active    Fa0/8, Fa0/9,
Fa0/10, Fa0/11
Fa0/14, Fa0/15
Fa0/18, Fa0/19
Fa0/22, Fa0/23
Fa0/24
10   zodiak1                 active    Fa0/1, Fa0/4
20   zodiak2                 active    Fa0/2, Fa0/5
30   zodiak3                 active    Fa0/3, Fa0/6
1002 fddi-default             act/unsup
1003 token-ring-default    act/unsup
1004 fddinet-default        act/unsup
1005 trnet-default         act/unsup

VLAN Type  SAID      MTU    Parent RingNo BridgeNo Stp    BrdgMode
Trans1 Trans2
-----
1    enet     100001   1500    -      -      -      -      -
0    0
10   enet     100010   1500    -      -      -      -      -
0    0
20   enet     100020   1500    -      -      -      -      -
0    0
30   enet     100030   1500    -      -      -      -      -
0    0
--More--
```

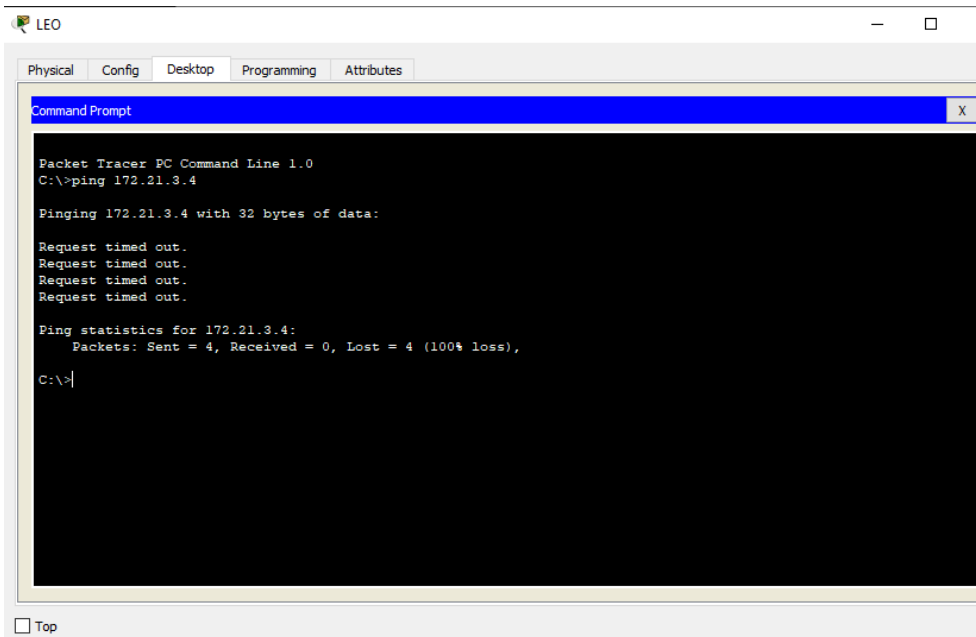
Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

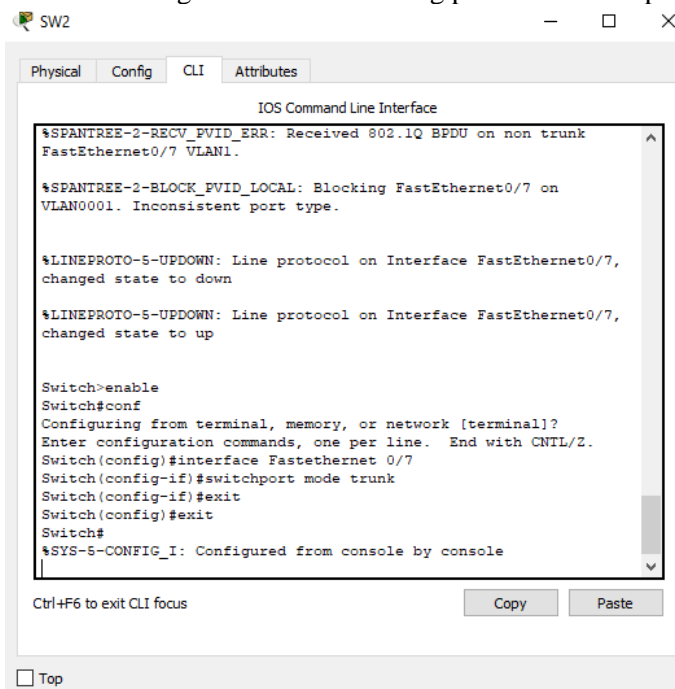
**TUGAS 7A.** Jelaskan secara singkat hasil yng anda peroleh dari langkah 7

- Pada langkah ini port yang sudah tekonfigurasi ke dalam vlan yaitu port 0/1 sampai port 0/6, sedangkan port 0/7 digunakan untuk trunking antar switch.
- h. Lakukan ping dari PC LEO ke PC PISCES

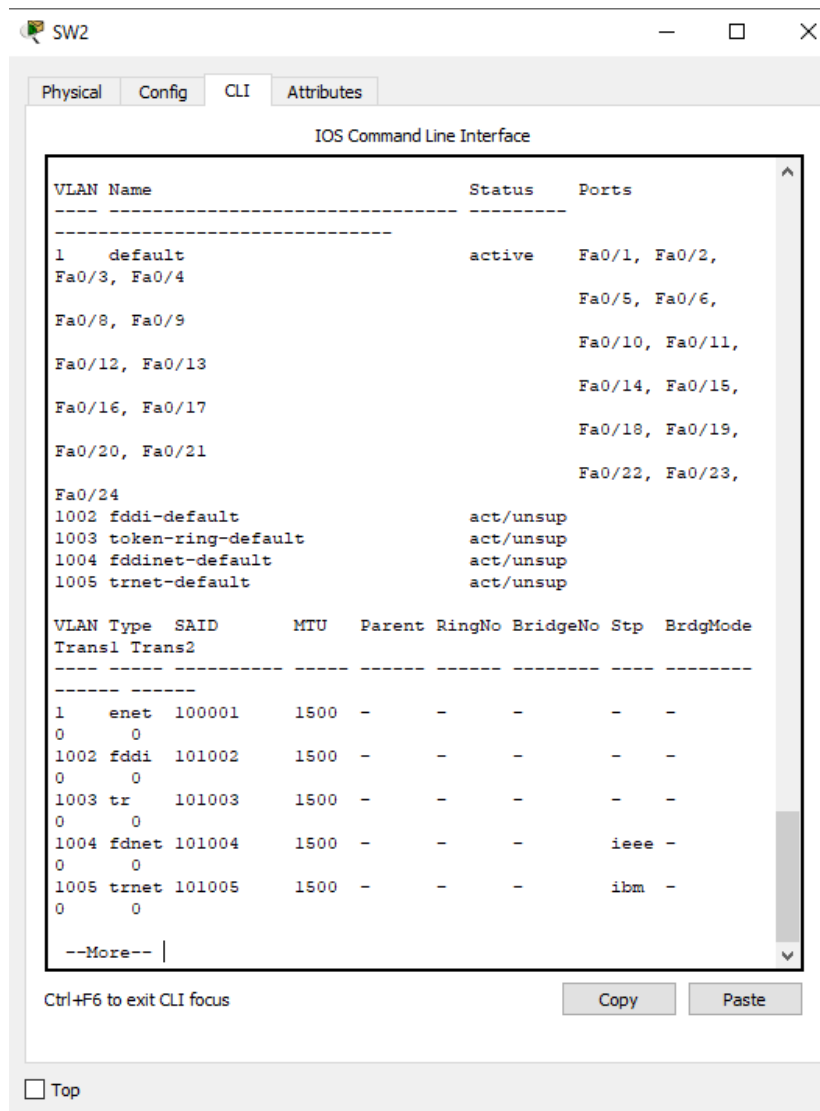


**TUGAS 8A.** Jelaskan secara singkat hasil mengaoa hasil yang anda peroleh dari langkah 8 mendapatkan status “reply”?

- Hasilnya adakah RTO dikarenakan vlan PC Leo tidak berada pada vlan yang sama dengan PC Pisces
- i. Lakukan konfigurasi VLAN trunking pada switch 2 seperti langkah 6

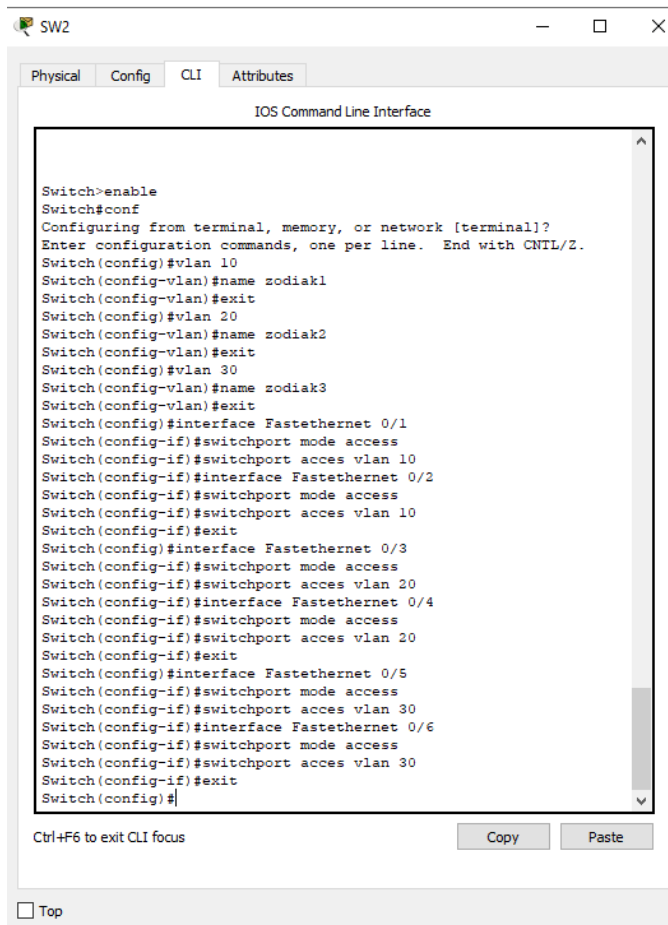


- j. Pada mode user atau mode privileged lihat konfigurasi vlan pada switch 2

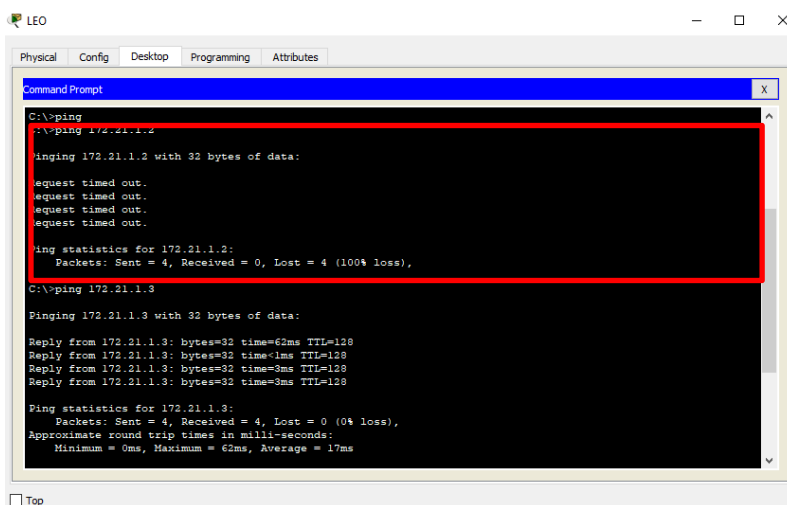


**TUGAS 10A.** Jelaskan secara singkat hasil yang anda peroleh dari langkah 10

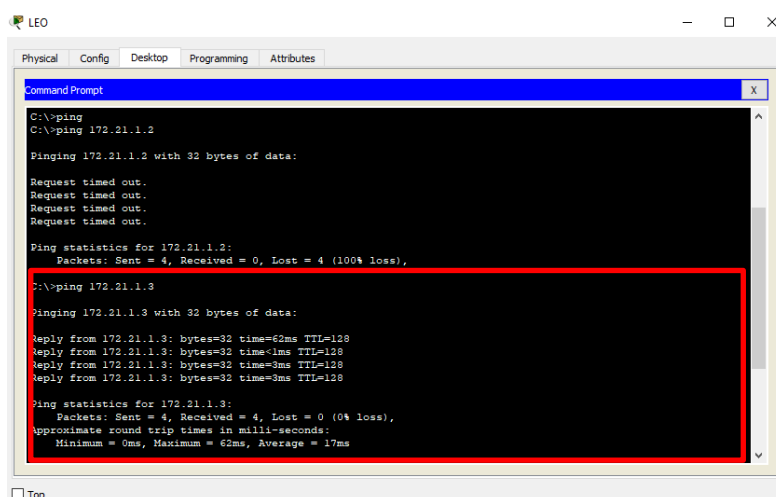
- Pada langkah ini konfigurasi pada port Fastethernet belum terjadi, sehingga belum ada VLAN.
- k. Pada mode configuration, konfigurasi port-port switch ke dalam VLANzodiak1, zodiak2, dan zodiak3.
- Zodiak1 : aquarius dan gemini
  - Zodiak2 : cancer dan sagitarius
  - Zodiak3 : capricornus dan pisce



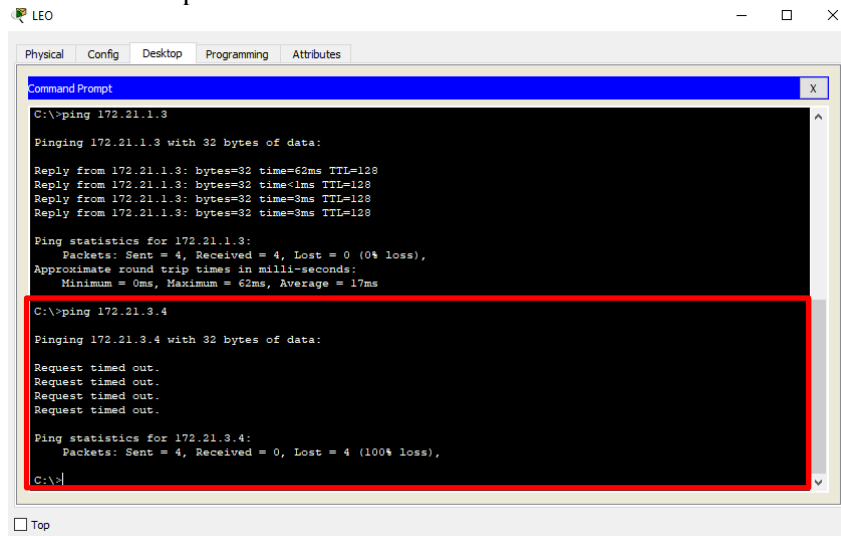
1. Lakukan ping dari PC Leo ke PC aries, PC leo ke PC aquarius, PC Leo ke PC pisces, PC Libra ke PC Cancer, PC libra ke PC Leo
  - PC Leo ke PC aries



- PC leo ke PC aquarius



- PC Leo ke PC pisces



LEO

Physical Config Desktop Programming Attributes

Command Prompt

```
C:\>ping 172.21.1.3

Pinging 172.21.1.3 with 32 bytes of data:

Reply from 172.21.1.3: bytes=32 time=62ms TTL=128
Reply from 172.21.1.3: bytes=32 time<1ms TTL=128
Reply from 172.21.1.3: bytes=32 time=3ms TTL=128
Reply from 172.21.1.3: bytes=32 time=3ms TTL=128

Ping statistics for 172.21.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 62ms, Average = 17ms

C:\>ping 172.21.1.4

Pinging 172.21.1.4 with 32 bytes of data:

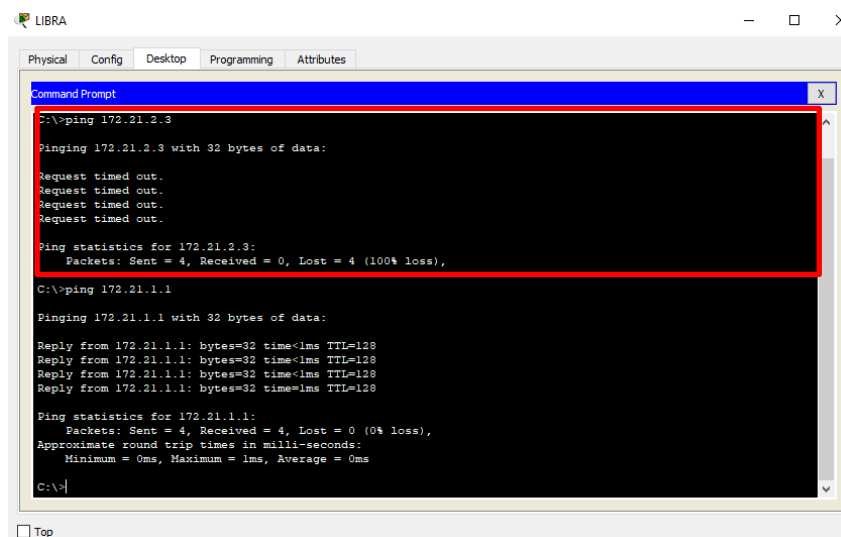
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.1.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

☐ Top

- PC Libra ke PC Cancer



LIBRA

Physical Config Desktop Programming Attributes

Command Prompt

```
C:\>ping 172.21.2.3

Pinging 172.21.2.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.2.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.1.1

Pinging 172.21.1.1 with 32 bytes of data:

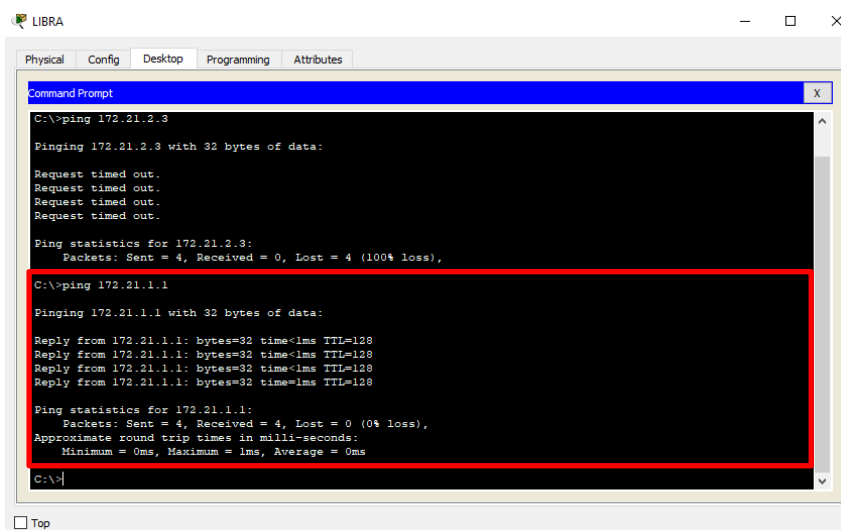
Reply from 172.21.1.1: bytes=32 time<1ms TTL=128
Reply from 172.21.1.1: bytes=32 time<1ms TTL=128
Reply from 172.21.1.1: bytes=32 time<1ms TTL=128
Reply from 172.21.1.1: bytes=32 time<1ms TTL=128

Ping statistics for 172.21.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

☐ Top

- PC libra ke PC Leo



LIBRA

Physical Config Desktop Programming Attributes

Command Prompt

```
C:\>ping 172.21.2.3

Pinging 172.21.2.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.21.2.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.21.1.1

Pinging 172.21.1.1 with 32 bytes of data:

Reply from 172.21.1.1: bytes=32 time<1ms TTL=128
Reply from 172.21.1.1: bytes=32 time<1ms TTL=128
Reply from 172.21.1.1: bytes=32 time<1ms TTL=128
Reply from 172.21.1.1: bytes=32 time<1ms TTL=128

Ping statistics for 172.21.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

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**TUGAS 17A.** Jelaskan secara singkat hasil yang anda peroleh dari langkah 10

- Pada percobaan diatas, disimpulkan bahwa PC berada pada VLAN yang sama, maka akan menghasilkan status Reply pada saat kita melakukan ping. Contohnya PC Leo ke PC Aquarius
- Akan tetapi jika berada pada VLAN yang berbeda maka akan menghasilkan status Request Time Out. Contoh PC Leo ke PC Aries, PC Leo ke PC Pisces dan PC Libra ke PC Cancer