

LAPORAN
PRAKTIKUM JARINGAN DAN KOMPUTER
(MODUL 4)
“VIRTUAL LAN DAN TRUNKING”



Disusun oleh :

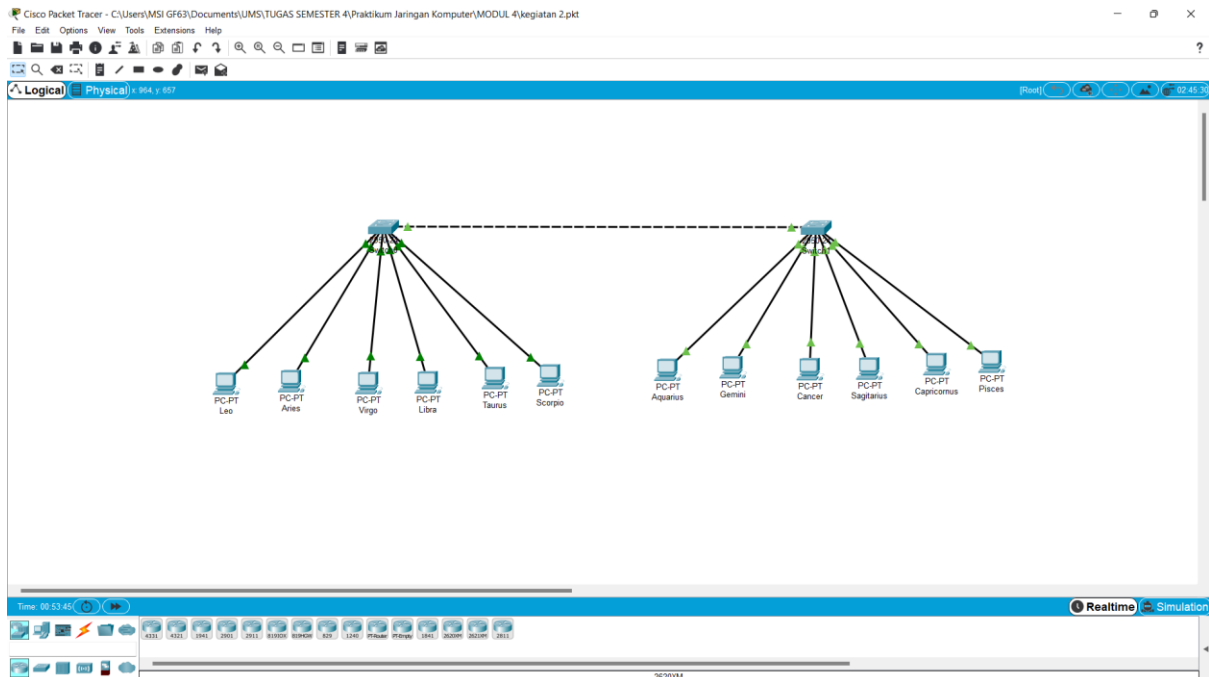
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INFORMATIKA
FAKULTAS KOMUNIKASI DAN INFORMATIKA
UNIVERSITAS MUHAMMADIYAH SURAKARTA
TAHUN 2021/2022

1. Menggunakan cisco packet tracer buat topologi berikut ini dengan menggunakan switch Catalyst 2950
 - a) Menggunakan cisco packet tracer buat topologi berikut ini dengan menggunakan switch Catalyst 2950.
 - b) Beri nama masing-masing perangkat dengan SW1 (switch 1), leo (PC0), aries (PC1), virgo (PC2), libra (PC3), taurus (PC4), dan scorpio (PC5) untuk segmen switch 1.
 - c) Beri nama masing-masing perangkat dengan SW2 (switch 2), aquarius (PC6), gemini (PC7), cancer (PC8), sagitarius (PC9), capricornus (PC10), dan Pisces (PC11) untuk segmen switch 2.



- d) 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
 - Libra = 172.21.2.2/24
 - Taurus = 172.21.3.1/24
 - Scorpio = 172.21.3.2/24 42
 - Aquarius = 172.21.1.3/24
 - Gemini = 172.21.1.4/24
 - Cancer = 172.21.2.3/24
 - Sagitarius = 172.21.2.4/24
 - Capricornus = 172.21.3.3/24
 - Pisces = 172.21.3.4/24

Leo

Physical Config Desktop Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP
☒ Static

IP Address 172.21.1.1

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 FE80:206:2AFF:FE0E:90EC

IPv6 Gateway

IPv6 DNS Server

Top

Aries

Physical Config Desktop Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP
☒ Static

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 Configuration

☐ DHCP
☐ Auto Config
☒ Static

IPv6 Address /

Link Local Address FE80:260:3EFF:FE06:BAC0

IPv6 Gateway

IPv6 DNS Server

Top

Virgo

Physical Config Desktop Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP
☒ 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

☐ DHCP
☐ Auto Config
☒ Static

IPv6 Address /

Link Local Address FE80:2E0:A3FF:FE32:26EA

IPv6 Gateway

IPv6 DNS Server

Top

Libra

Physical Config Desktop Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP
☒ 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

☐ DHCP
☐ Auto Config
☒ Static

IPv6 Address /

Link Local Address FE80:260:47FF:FE30:A2EE

IPv6 Gateway

IPv6 DNS Server

Top

Taurus

Physical Config Desktop Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP
☒ 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

☐ DHCP
☐ Auto Config
☒ Static

IPv6 Address /

Link Local Address FE80:201:63FF:FE0D:80E2

IPv6 Gateway

IPv6 DNS Server

Top

Scorpio

Physical Config Desktop Programming Attributes

IP Configuration

Interface FastEthernet0

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 FE80:203:E4FF:FE18:2E46

IPv6 Gateway

IPv6 DNS Server

Top

Aquarius

Physical Config Desktop Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP
☒ Static

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 FE80:20A:F3FF:FE97:789E

IPv6 Gateway

IPv6 DNS Server

Top

Gemini

Physical Config Desktop Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP
☒ Static

IP Address 172.21.3.4

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP
☐ Auto Config
☒ Static

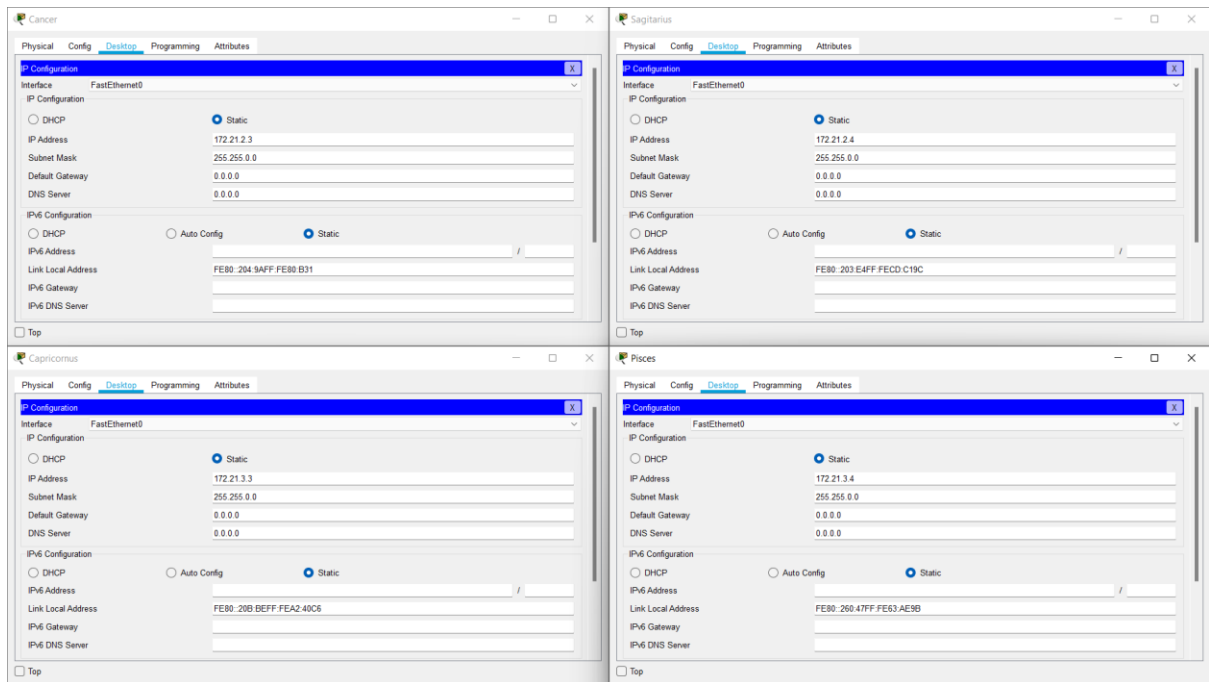
IPv6 Address /

Link Local Address FE80:204:5AFF:FE7A:3880

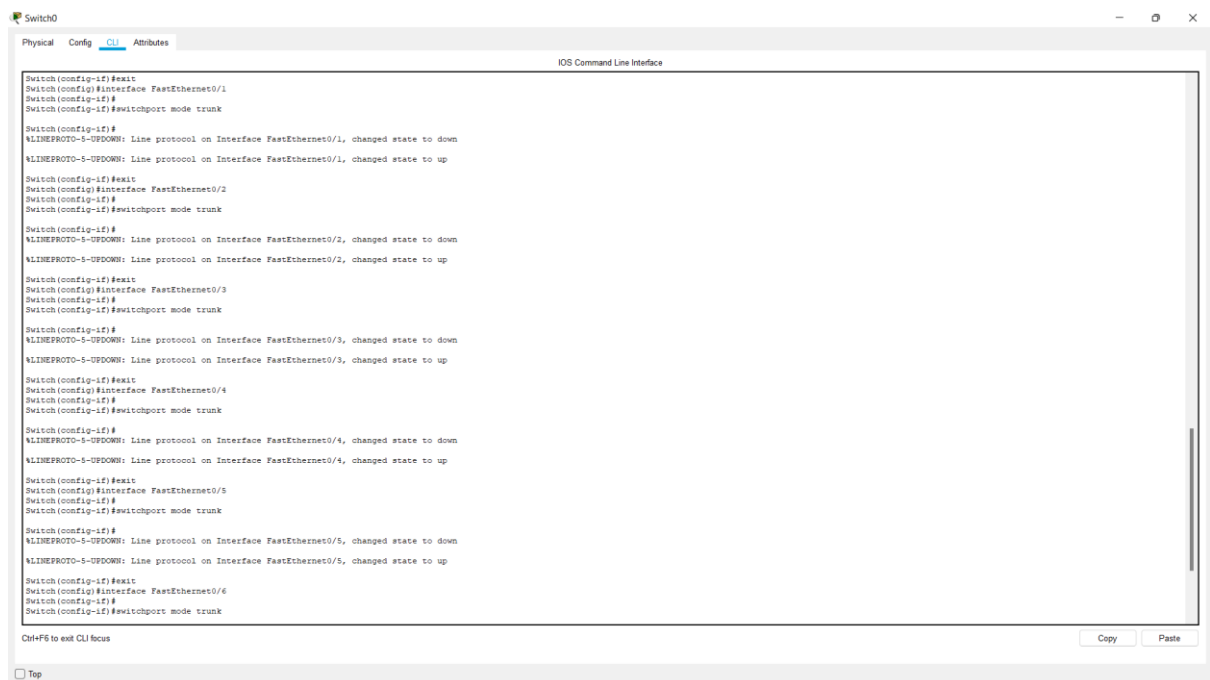
IPv6 Gateway

IPv6 DNS Server

Top



- e) Lakukan langkah 4 dan 5 laboratorium 1 untuk switch 1
- f) Lakukan konfigurasi VLAN trunking pada switch



- g) Pada mode user atau mode privileged, lihat konfigurasi trunking yang telah dibuat. Langkah pengoperasian untuk melihat konfigurasi

The screenshot shows the 'CLI' tab of a Cisco switch configuration window. The command 'show vlan' has been executed, displaying the following information:

VLAN Name	Status	Ports
1 default	active	Fa0/8, Fa0/9, Fa0/10, Fa0/11, Fa0/12, Fa0/13, Fa0/14, Fa0/15, Fa0/16, Fa0/17, Fa0/18, Fa0/19, Fa0/20, Fa0/21, Fa0/22, Fa0/23, Fa0/24
10 zodiak1	active	
20 zodiak2	active	
30 zodiak3	active	
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 tinet-default	active	

Below this, the 'show vlan id 10' command is shown, displaying details for VLAN 10:

VLAN Name	Status	Ports
10 zodiak1	active	

Similarly, 'show vlan id 20' shows details for VLAN 20 (zodiak2) and 'show vlan id 30' shows details for VLAN 30 (zodiak3). All VLANs are in an 'active' state.

Tugas 7A: Jelaskan secara singkat hasil yang anda peroleh dari langkah 7

- Di dalam table terdapat zodiak1 yang memiliki vlan 10, zodiak2 memiliki vlan 20, zodiak3 yang memiliki vlan 30. Untuk status dari masing-masing zodiak sudah active dan terdapat ports

- h) Lakukan ping dari PC leo ke PC pisces.

The screenshot shows a 'Command Prompt' window on a PC named 'Leo'. The command 'ping 172.21.3.4' has been executed, resulting in the following output:

```

Packet Tracer PC Command Line 1.0
C:\>ping 172.21.3.4

Pinging 172.21.3.4 with 32 bytes of data:

Reply from 172.21.3.4: bytes=32 time<1ms TTL=128
Reply from 172.21.3.4: bytes=32 time<1ms TTL=128
Reply from 172.21.3.4: bytes=32 time<1ms TTL=128
Reply from 172.21.3.4: bytes=32 time=5ms TTL=128

Ping statistics for 172.21.3.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 5ms, Average = 1ms

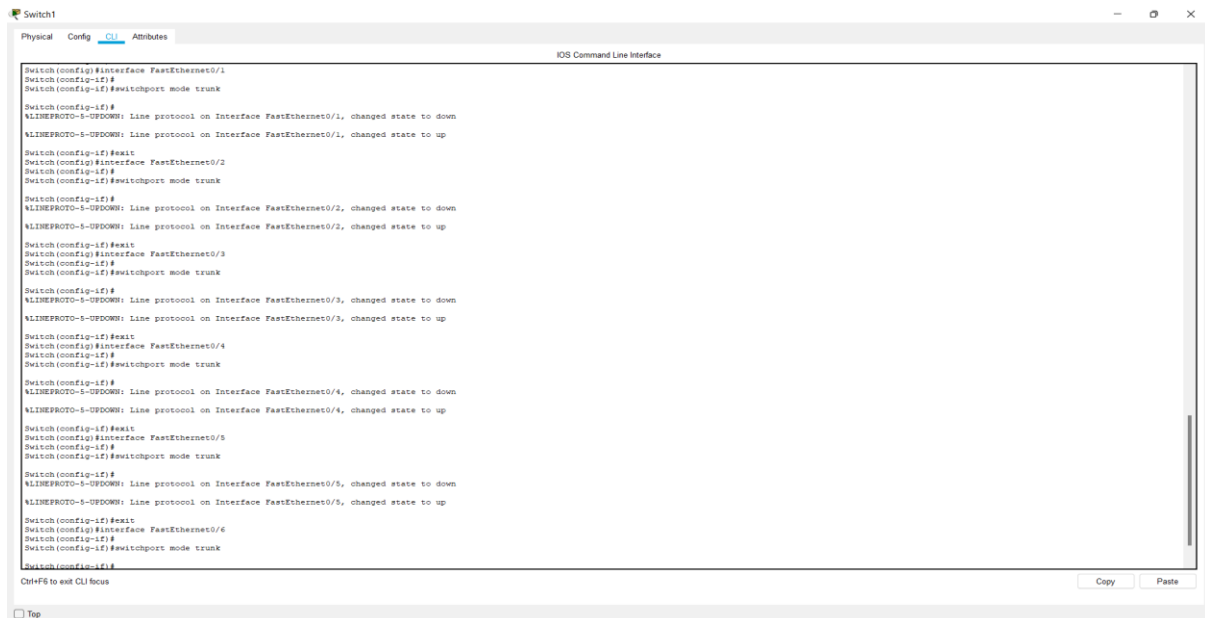
C:\>

```

Tugas 8A: Jelaskan secara singkat mengapa hasil yang anda peroleh dari langkah 8 mendapatkan status “reply”?

- Karena switch1 dan switch2 telah terhubung yaitu fa0/7 yang telah di ubah ke mode trunk sehingga ping dari PC leo ke PC pisces tidak mengalami error atau status reply

i) Lakukan konfigurasi VLAN trunking pada switch 2 seperti lagkah 6.



```
Switch1
Physical Config CLI Attributes
IOS Command Line Interface

Switch(config)#interface FastEthernet0/1
Switch(config-if)#
Switch(config-if)#switchport mode trunk
Switch(config-if)#
LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down
LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

Switch(config-if)#exit
Switch(config)#interface FastEthernet0/2
Switch(config-if)#
Switch(config-if)#switchport mode trunk
Switch(config-if)#
LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down
LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up

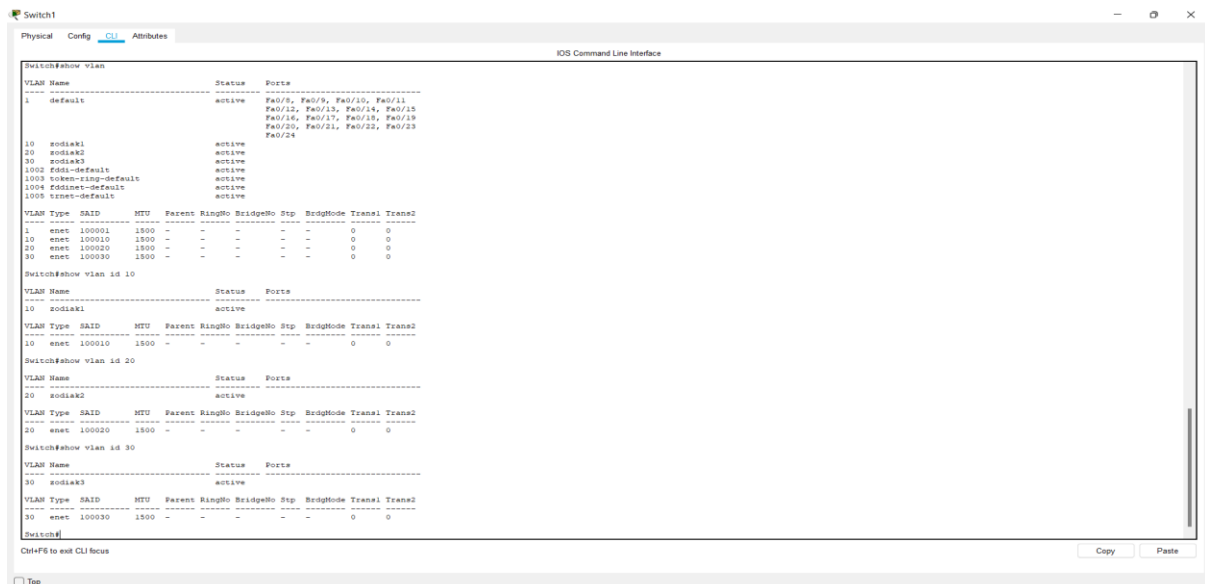
Switch(config-if)#exit
Switch(config)#interface FastEthernet0/3
Switch(config-if)#
Switch(config-if)#switchport mode trunk
Switch(config-if)#
LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to down
LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

Switch(config-if)#exit
Switch(config)#interface FastEthernet0/4
Switch(config-if)#
Switch(config-if)#switchport mode trunk
Switch(config-if)#
LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to down
LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up

Switch(config-if)#exit
Switch(config)#interface FastEthernet0/5
Switch(config-if)#
Switch(config-if)#switchport mode trunk
Switch(config-if)#
LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to down
LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to up

Switch(config-if)#exit
Switch(config)#interface FastEthernet0/6
Switch(config-if)#
Switch(config-if)#switchport mode trunk
Switch(config-if)#
Switch(config-if)#exit
Ctrl-F5 to exit CLI focus
Copy Paste
```

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



```
Switch1
Physical Config CLI Attributes
IOS Command Line Interface

Switch#show vlan
-----
VLAN Name                Status    Ports
-----
1  default                active    Fa0/5, Fa0/9, Fa0/10, Fa0/11
                                   Fa0/12, Fa0/13, Fa0/14, Fa0/15
                                   Fa0/16, Fa0/17, Fa0/18, Fa0/19
                                   Fa0/20, Fa0/21, Fa0/22, Fa0/23
                                   Fa0/24

10  zodiak1                active
20  zodiak2                active
30  zodiak3                active
1002 fddi-default          active
1003 token-ring-default   active
1004 fddinet-default       active
1005 tokenet-default       active

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

Switch#show vlan id 10
-----
VLAN Name                Status    Ports
-----
10  zodiak1                active

VLAN Type  SAID             MTU    Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
-----
10  enet     100010          1500    -    -    -    -    -    0      0

Switch#show vlan id 20
-----
VLAN Name                Status    Ports
-----
20  zodiak2                active

VLAN Type  SAID             MTU    Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
-----
20  enet     100020          1500    -    -    -    -    -    0      0

Switch#show vlan id 30
-----
VLAN Name                Status    Ports
-----
30  zodiak3                active

VLAN Type  SAID             MTU    Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
-----
30  enet     100030          1500    -    -    -    -    -    0      0

Switch#
Ctrl-F5 to exit CLI focus
Copy Paste
```

Tugas 10A: Jelaskan secara singkat hasil yang anda peroleh dari langkah 10.

- Di dalam table terdapat zodiak1 yang memiliki vlan 10, zodiak2 memiliki vlan 20, zodiak3 yang memiliki vlan 30. Untuk status dari masing-masing zodiak sudah active dan terdapat ports

k) Pada mode configuration, konfigurasi port-port switch ke dalam VLAN zodiak1, zodiak2, dan zodiak3 dengan anggota sebagai berikut :

- zodiak1 = aquarius dan gemini
- zodiak2 = cancer dan sagitarius
- zodiak3 = capricornus dan pisces

l) Lakukan ping dari PC leo ke PC aries, PC leo ke PC aquarius, PC leo ke PC pisces



```
Packet Tracer PC Command Line 1.0
C:\>ping 172.21.1.2

Pinging 172.21.1.2 with 32 bytes of data:

Reply from 172.21.1.2: bytes=32 time=1ms TTL=128
Reply from 172.21.1.2: bytes=32 time=1ms TTL=128
Reply from 172.21.1.2: bytes=32 time=1ms TTL=128
Reply from 172.21.1.2: bytes=32 time=1ms TTL=128

Ping statistics for 172.21.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

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=1ms TTL=128
Reply from 172.21.1.3: bytes=32 time=1ms TTL=128
Reply from 172.21.1.3: bytes=32 time=1ms TTL=128
Reply from 172.21.1.3: bytes=32 time=1ms 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 = 1ms, Average = 0ms

C:\>ping 172.21.3.4

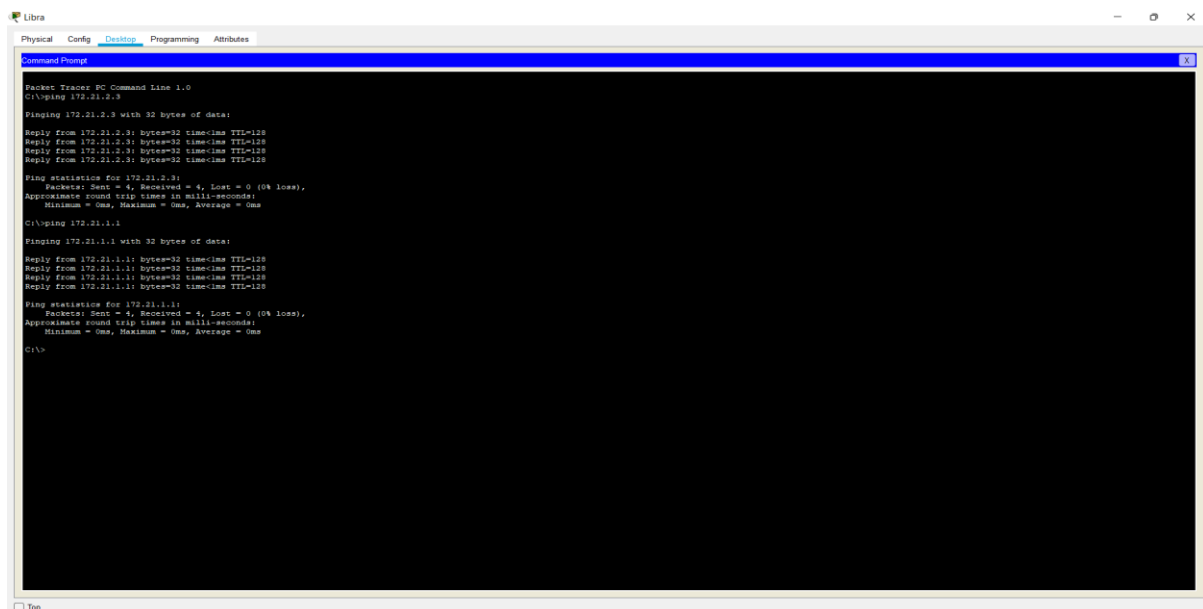
Pinging 172.21.3.4 with 32 bytes of data:

Reply from 172.21.3.4: bytes=32 time=1ms TTL=128
Reply from 172.21.3.4: bytes=32 time=1ms TTL=128
Reply from 172.21.3.4: bytes=32 time=1ms TTL=128
Reply from 172.21.3.4: bytes=32 time=1ms TTL=128

Ping statistics for 172.21.3.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

- PC libra ke cancer, dan PC libra ke leo.



```
Packet Tracer PC Command Line 1.0
C:\>ping 172.21.2.3

Pinging 172.21.2.3 with 32 bytes of data:

Reply from 172.21.2.3: bytes=32 time=1ms TTL=128
Reply from 172.21.2.3: bytes=32 time=1ms TTL=128
Reply from 172.21.2.3: bytes=32 time=1ms TTL=128
Reply from 172.21.2.3: bytes=32 time=1ms TTL=128

Ping statistics for 172.21.2.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

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 = 0ms, Average = 0ms

C:\>
```

Tugas 12A: Jelaskan secara singkat hasil yang anda peroleh dari langkah 12.

- Setelah melakukan ping pada antar pc tidak terjadi error atau request karena telah di ganti mode trunk pada semua fastEthernet serta telah di hubungkan switch dengan benar sehingga tidak terjadi error dan keluar “reply”