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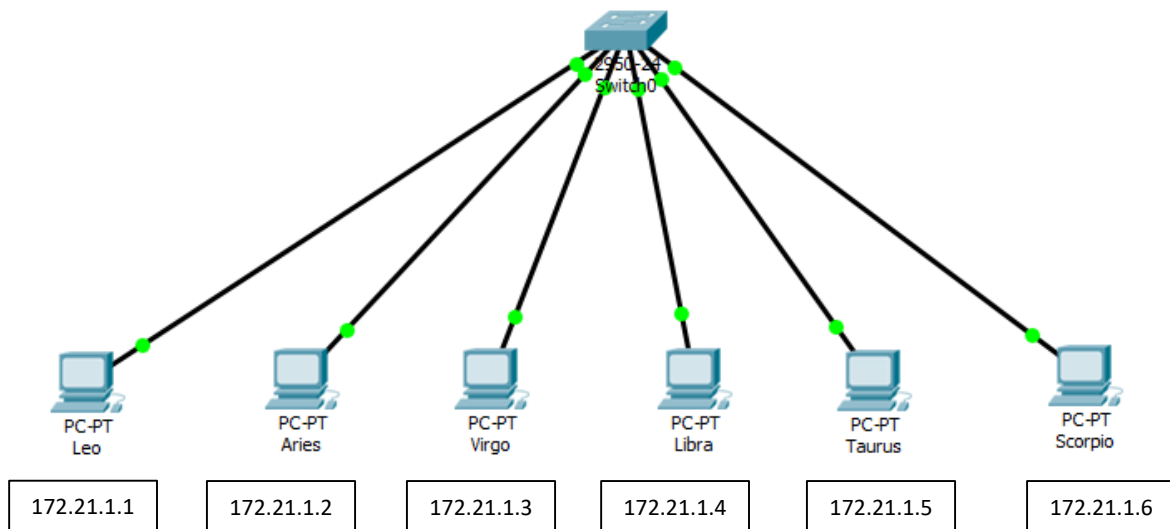
MODUL 4

VIRTUAL LAN DAN TRUNKING

C. Kegiatan Praktikum

1. Kegiatan 1 Topologi 1

- Menggunakan packet tracer membuat topologi dengan menggunakan switch.
- Beri nama masing-masing perangkat dengan Leo (PC0), Aries (PC1), Virgo (PC2), Pisces (PC3), Taurus (PC4), dan Scorpio (PC5).
- Konfigurasi masing-masing PC dengan alamat IP yang tertera di modul



- Konfigurasi pada switch, membuat 3 vlan dengan nama zodiak1, zodiak2, zodiak3.

```
Switch>enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name zodiak1
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name zodiak2
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name zodiak3
Switch(config-vlan)#exit
Switch(config)#
```

- e. Konfigurasi port-port switch ke dalam VLAN zodiak1, zodiak2, zodiak3

- Zodiak1 = Leo dan Libra

```
Switch(config)#
Switch(config)#interface FastEthernet0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#interface FastEthernet0/4
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#
```

- Zodiak2 = Aries dan Taurus

```
Switch(config)#int fa 0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport vlan 20
Switch(config-if)#switchport access vlan 20
Switch(config-if)#interface FastEthernet0/5
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
```

- Zodiak3 = Virgo dan Scorpio

```
Switch(config-if)#interface FastEthernet0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
Switch(config-if)#interface FastEthernet0/6
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
Switch(config-if)#exit
```

- f. Melihat konfigurasi VLAN yang telah dibuat

- Melihat informasi VLAN secara keseluruhan

```
Switch#show vlan brief
```

VLAN	Name	Status	Ports
1	default	active	Fa0/7, 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	Fa0/1, Fa0/4
20	zodiak2	active	Fa0/2, Fa0/5
30	zodiak3	active	Fa0/3, Fa0/6
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

```
Switch#
```

- Melihat informasi VLAN id 10

```
Switch#show vlan id 10
```

VLAN Name					Status	Ports				
-----					-----	-----				
10	zodiak1				active	Fa0/1, Fa0/4				
VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2

10	enet	100010	1500	-	-	-	-	-	0	0

- Melihat informasi VLAN id 20

```
Switch#show vlan id 20
```

VLAN Name					Status	Ports				
-----					-----	-----				
20	zodiak2				active	Fa0/2, Fa0/5				
VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2

20	enet	100020	1500	-	-	-	-	-	0	0

- Melihat informasi VLAN id 30

```
Switch#show vlan id 30
```

VLAN Name					Status	Ports					
-----					-----	-----					
30	zodiak3				active	Fa0/3, Fa0/6					
VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2	

30	enet	100030	1500	-	-	-	-	-	0	0	

Tugas 6A

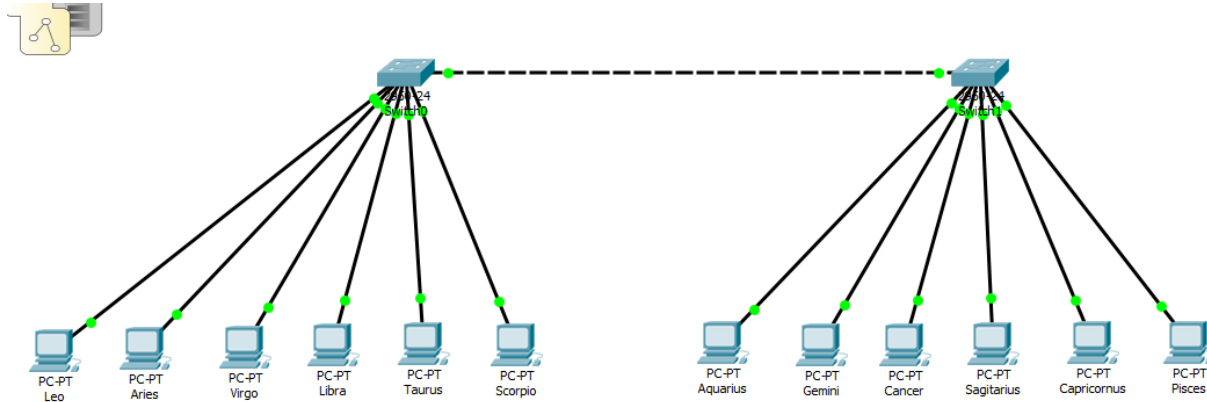
No.	Variabel	Nilai		
		VLAN id 10	VLAN id 20	VLAN id 30
1.	Nomor VLAN	10	20	30
2.	Nama VLAN	Zodiak1	Zodiak2	Zodiak3
3.	Port	Fa0/1, Fa0/4	Fa0/2, Fa0/5	Fa0/3, Fa0/6
4.	Status	Active	Active	Active

Tugas 6B

- Pada VLAN dengan nomor 10, memiliki nama Zodiak1 yang terdiri dari Leo (Fa0/1) dan Libra (Fa0/4), dengan status aktif.
- Pada VLAN dengan nomor 20, memiliki nama Zodiak2 yang terdiri dari Aries (Fa0/2) dan Taurus (Fa0/5), dengan status aktif.
- Pada VLAN dengan nomor 30, memiliki nama Zodiak3 yang terdiri dari Virgo (Fa0/3) dan Scorpio (Fa0/6), dengan status aktif.

2. Kegiatan 2 Topologi 2

- Menggunakan cisco packet tracer membuat topologi menggunakan switch Catalyst 2950.
- Beri nama masing-masing perangkat dengan Leo (PC0), Aries (PC1), Virgo (PC2), Libra (PC3), Taurus (PC4), Scorpio (PC5), Aquarius (PC6), Gemini (PC7), Cancer (PC8), Sagittarius (PC9), Capricornius (PC10), Pisces (PC11).
- Konfigurasi masing-masing PC dengan nama dan alamat IP yang tertera di modul.



- Konfigurasi pada switch, membuat 3 vlan dengan nama zodiak1, zodiak2, zodiak3.

```
Switch>enable
Switch#conf term
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name zodiak1
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name zodiak2
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name zodiak3
Switch(config-vlan)#exit
```

- Konfigurasi port-port switch ke dalam VLAN zodiak1, zodiak2, zodiak3

➤ Zodiak1 = Leo dan Libra

```
Switch(config)#
Switch(config)#interface FastEthernet0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#interface FastEthernet0/4
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#
```

- Zodiak2 = Aries dan Taurus

```
Switch(config)#int fa 0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport vlan 20
Switch(config-if)#switchport access vlan 20
Switch(config-if)#interface FastEthernet0/5
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
```

- Zodiak3 = Virgo dan Scorpio

```
Switch(config-if)#interface FastEthernet0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
Switch(config-if)#interface FastEthernet0/6
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
Switch(config-if)#exit
```

- f. Melakukan konfigurasi VLAN trunking pada port 0/7

```
Switch(config)#int fa 0/7
Switch(config-if)#switchport mode trunk
Switch(config-if)#exit
```

Hasilnya :

```
Switch#show int fa 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
Protected: false
Appliance trust: none
```

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

Port	Vlans in spanning tree forwarding state and not pruned
Fa0/7	1

Switch#show vlan

VLAN	Name	Status	Ports
1	default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, 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
1002	fddi-default	act/unsup	
1003	token-ring-default	act/unsup	
1004	fddinet-default	act/unsup	
1005	trnet-default	act/unsup	

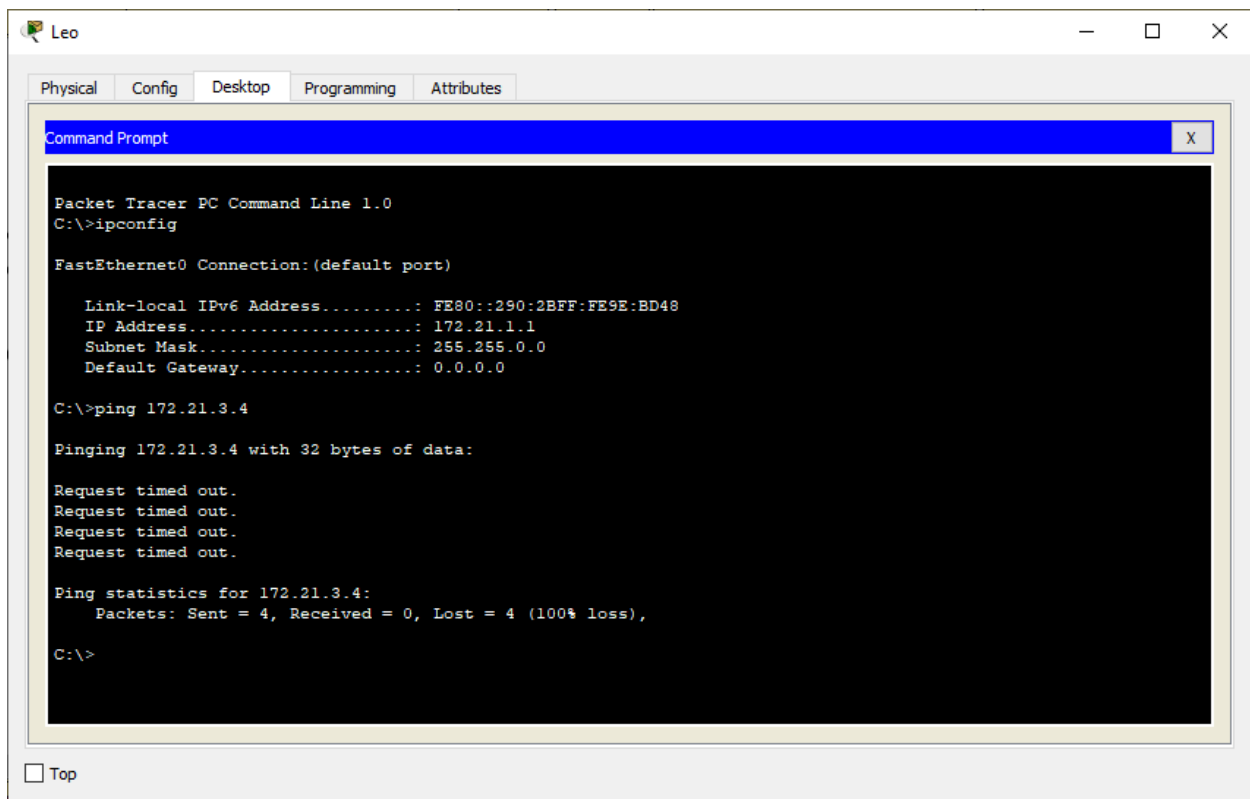
VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Transl	Trans2
1	enet	100001	1500	-	-	-	-	-	0	0
1002	fddi	101002	1500	-	-	-	-	-	0	0
1003	tr	101003	1500	-	-	-	-	-	0	0
1004	fdnet	101004	1500	-	-	-	ieee	-	0	0
1005	trnet	101005	1500	-	-	-	ibm	-	0	0

--More--

Tugas 7A

Untuk port 0/7 pada switch 0 telah di setting untuk trunk dan berhasil, sehingga port 0/7 tidak tersedia untuk VLAN.

g. Melakukan ping dari PC Leo ke PC Pisces



Tugas 8A

Hasilnya 'Request timed out' karena berada pada jaringan yang berbeda dan pada switch 1 belum di setting trunk.

h. Melakukan konfigurasi VLAN trunking pada switch 1

```
Switch(config)#int fa 0/7
Switch(config-if)#switchport mode trunk
Switch(config-if)#exit
```

- i. Melihat konfigurasi pada switch 1

```
Switch#show vlan
```

VLAN	Name	Status	Ports
1	default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, 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
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
1002	fddi	101002	1500	-	-	-	-	-	0	0
1003	tr	101003	1500	-	-	-	-	-	0	0
1004	fdnet	101004	1500	-	-	-	ieee	-	0	0
1005	trnet	101005	1500	-	-	-	ibm	-	0	0

VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2
------	------	------	-----	--------	--------	----------	-----	----------	--------	--------

```
Remote SPAN VLANs
```

```
Primary Secondary Type Ports
```

Tugas 10A

Semua port dari port Fa0/1 sampai Fa0/24, kecuali Fa0/7 berstatus aktif.

- j. Konfigurasi port-port switch ke dalam VLAN zodiak1, zodiak2, zodiak3

➤ Zodiak1

```
Switch(config-if)#int fa 0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#int fa 0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
```

➤ Zodiak2

```
Switch(config)#int fa 0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
% Access VLAN does not exist. Creating vlan 20
Switch(config-if)#int fa 0/4
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
```


➤ Zodiak3

```
Switch(config)#int fa 0/5
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
% Access VLAN does not exist. Creating vlan 30
Switch(config-if)#int fa 0/6
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
Switch(config-if)#exit
```

k. Melakukan ping

- PC Leo ke PC Aries

```
C:\>ping 172.21.1.2

Pinging 172.21.1.2 with 32 bytes of data:

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

Ping statistics for 172.21.1.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

- PC Leo ke PC Aquarius

```
C:\>ping 172.21.1.3

Pinging 172.21.1.3 with 32 bytes of data:

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

Ping statistics for 172.21.1.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

- PC Leo ke PC Pisces

```
C:\>ping 172.21.3.4

Pinging 172.21.3.4 with 32 bytes of data:

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

Ping statistics for 172.21.3.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

- PC Libra ke PC Cancer

```
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),
```

- PC Libra ke PC Leo

```
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=3ms 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 = 3ms, Average = 1ms
```

Tugas 12A

Dari hasil yang diperoleh, bahwa akan mendapatkan hasil reply apabila PC berada pada jaringan dan VLAN yang sama. Apabila hanya sama dari satu VLAN atau jaringan maka hasilnya akan 'request timed out'.