

Kharismawan

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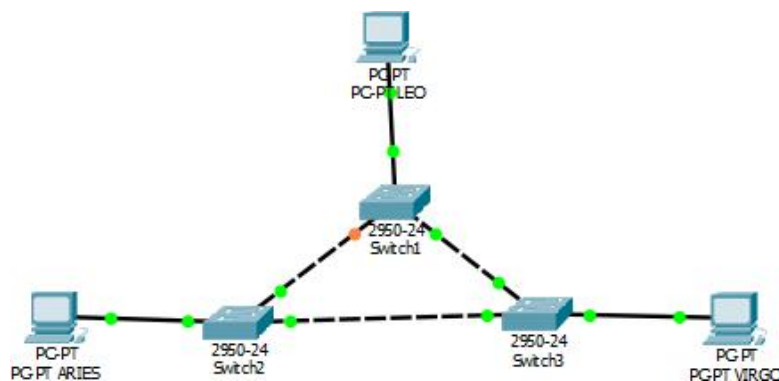
Kelas : C

Prak-Jarkom

Modul 6

Kegiatan 1. Topologi 1

1. Menggunakan Packet Tracer buat topologi berikut ini dengan menggunakan switch Catalyst 2950
Tulis langkah pembuatan topologi.
 - Masuk Cisco Packet Tracer
 - Lalu masuk ke tab “Switches”
 - Pilih switch catalyst 2950 dan drag ke dalam cisco sebanyak 3 kali
 - Masuk ke tab “End Device”
 - Lalu pilih PC, setelah itu drag ke dalam cisco sebanyak 3 kali
 - Mengganti nama sesuai keinginan dan mengisi IP Address tiap PC
 - Terakhir hubungkan dengan kabel



2. Beri nama masing - masing switch dengan SW1,SW2,dan SW3

GLOBAL

Settings

Algorithm Settings

SWITCHING

VLAN Database

INTERFACE

GLOBAL

Settings

Algorithm Settings

SWITCHING

VLAN Database

INTERFACE

GLOBAL

Settings

Algorithm Settings

SWITCHING

VLAN Database

INTERFACE

Global Settings

Display Name

Switch1

Hostname

Switch

Serial Number

No Serial Number

Global Settings

Display Name

Switch2

Hostname

Switch

Serial Number

No Serial Number

Global Settings

Display Name

Switch3

Hostname

Switch

Serial Number

No Serial Number

Tulis langkah pemberian nama switch mulai dari mode user.

Sw1

```
Switch#
*SYS-5-CONFIG_I: Configured from console by console
conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname SW1
SW1(config)#end
SW1#
*SYS-5-CONFIG_I: Configured from console by console
```

Sw2

```
Switch(vlan)#exit
APPLY completed.
Exiting....
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname SW2
SW2(config)#end
SW2#
*SYS-5-CONFIG_I: Configured from console by console
```

Sw3

```
Switch(vlan)#exit
APPLY completed.
Exiting....
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname SW3
SW3(config)#end
SW3#
*SYS-5-CONFIG_I: Configured from console by console
```

3. Tulis langkah pemberian nama switch mulai dari mode user.
4. Konfigurasi masing-masing PC dengan IP :

- Leo = 172.21.1.1/24

Physical Config Desktop Programming Attributes

IP Configuration

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

- Aries = 172.21.1.2/24

Physical Config Desktop Programming Attributes

IP Configuration

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

- Virgo = 172.21.1.3/24

Physical Config Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address: 171.21.1.3

Subnet Mask: 255.255.0.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

5. Pada mode user atau mode privileged, lihat status STP pada masing - masing switch. Langkah pengoperasian

- Tekan Enter
- Masuk mode privileged (Optional)

- Sw1

```
SW1>enable
SW1#
SW1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
SW1(config)#interface FastEthernet0/1
SW1(config-if)#
SW1(config-if)#exit
SW1(config)#interface FastEthernet0/1
SW1(config-if)#exit
SW1(config)#exit
SW1#
%SYS-5-CONFIG_I: Configured from console by console
show spanning-tree
VLAN0001
    Spanning tree enabled protocol ieee
    Root ID          Priority      32769
                Address        000C.857D.DC34
                Cost         19
                Port        3(FastEthernet0/3)
                Hello Time   2 sec Max Age 20 sec Forward Delay 15 sec

    Bridge ID        Priority      32769 (priority 32768 sys-id-ext 1)
                Address        0040.0B4E.278C
                Hello Time   2 sec Max Age 20 sec Forward Delay 15 sec
                Aging Time   20

Interface              Role Sts Cost               Prio.Nbr Type
-----
Fa0/2                  Altn BLK 19           128.2   F2p
Fa0/3                  Root FWD 19           128.3   F2p
Fa0/1                  Desg FWD 19           128.1   F2p

SW1#
```

```
SW2>enable
SW2#
SW2>vlan database
* Warning: It is recommended to configure VLAN from config mode,
as VLAN database mode is being deprecated. Please consult user
documentation for configuring VTP/VLAN in config mode.

SW2(vlan)#exit
APPLY completed.
Exiting....
SW2#show spanning-tree
VLAN0001
    Spanning tree enabled protocol ieee
    Root ID    Priority    32769
               Address     000C.857D.DC34
               Cost        19
               Port        3(FastEthernet0/3)
               Hello Time   2 sec    Max Age 20 sec    Forward Delay 15 sec

    Bridge ID   Priority    32769   (priority 32768 sys-id-ext 1)
               Address     0010.11B8.5078
               Hello Time   2 sec    Max Age 20 sec    Forward Delay 15 sec
               Aging Time   20

Interface      Role  Sts Cost      Prio.Nbr Type
-----
Fa0/1          Desg FWD 19        128.1   F2p
Fa0/3          Root FWD 19        128.3   F2p
Fa0/2          Desg FWD 19        128.2   F2p

SW2#
```

```
SW3#enable
SW3#
SW3#vlan database
% Warning: It is recommended to configure VLAN from config mode,
as VLAN database mode is being deprecated. Please consult user
documentation for configuring VTP/VLAN in config mode.

SW3(vlan)#exit
APPLY completed.
Exiting....
SW3#write
Building configuration...
[OK]
SW3#show spanning-tree
VLAN0001
Spanning tree enabled protocol ieee
Root ID      Priority    32769
Address      000C.857D.DC34
This bridge is the root
Hello Time   2 sec    Max Age 20 sec    Forward Delay 15 sec

Bridge ID     Priority    32769   (priority 32768 sys-id-ext 1)
Address       000C.857D.DC34
Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec
Aging Time    20

Interface          Role Sts Cost           Prio.Nbr Type
-----
Fa0/1              Desg FWD 15         128.1   F2p
Fa0/3              Desg FWD 15         128.3   F2p
Fa0/2              Desg FWD 15         128.2   F2p
```

6. Untuk tiap switch isikan tabel berikut:

Sw 1

| No | Variable | Nilai |
|----|------------------------------|----------------------------------------|
| 1 | Root ID | 32769 : 000C.857D.DC34 |
| 2 | Priority | 32769 |
| 3 | MAC Address | 0040.0B4E.278C |
| 4 | Bridge ID | 32769 :0040.0B4E.278C |
| 5 | Cost (0 / 1 ; 0 / 2 ; 0 / 3) | Fa0/1 --> 19, Fa0/2 --> 19, Fa03--> 19 |
| 6 | Hello Time | 2 Sec |
| 7 | MaxAge | 20 Sec |
| 8 | Forward Delay | 15 Sec |

Sw 2

| No | Variable | Nilai |
|----|------------------------------|----------------------------------------|
| 1 | Root ID | 32769 : 000C.857D.DC34 |
| 2 | Priority | 32769 |
| 3 | MAC Address | 0010.11B8.5078 |
| 4 | Bridge ID | 32769 : 0010.11B8.5078 |
| 5 | Cost (0 / 1 ; 0 / 2 ; 0 / 3) | Fa0/1 --> 19, Fa0/2 --> 19, Fa03--> 19 |
| 6 | Hello Time | 2 Sec |
| 7 | MaxAge | 20 Sec |
| 8 | Forward Delay | 15 Sec |

Sw 3

| No | Variable | Nilai |
|----|------------------------------|----------------------------------------|
| 1 | Root ID | 32769 : 000C.857D.DC34 |
| 2 | Priority | 32769 |
| 3 | MAC Address | 000C.857D.DC34 |
| 4 | Bridge ID | 32769 : 000C.857D.DC34 |
| 5 | Cost (0 / 1 ; 0 / 2 ; 0 / 3) | Fa0/1 --> 19, Fa0/2 --> 19, Fa03--> 19 |
| 6 | Hello Time | 2 Sec |
| 7 | MaxAge | 20 Sec |
| 8 | Forward Delay | 15 Sec |

7. Tentukan

Root Bridge : SW3

Designated bride : SW2

Root Port : SW1 Fa 0/3, SW 2Fa0/3

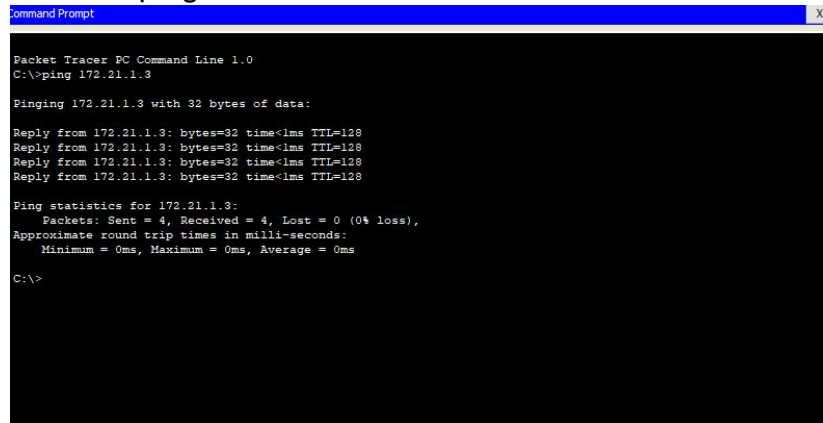
Designated Port : SW1 Fa 0/1 , SW 2 Fa 0/1 Fa 0/2, SW 3 Fa0/1 Fa 0/2 Fa 0/3

Port yang berada pada keadaan forwarding : SW1(Fa 0/1;0/3) ,SW2(Fa 0/1;0/2;0/3), dan SW3(Fa 0/1;0/2;0/3)

Port yang berada pada keadaan blocking : SW1 (Fa 0/2)

8. Test ping pc leo ke virgo

- Klik pada pc leo
- Pilih tab desktop
- Pilih command prompt
- Tuliskan ping 172.21.1.3



```
Command Prompt
Packet Tracer PC Command Line 1.0
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 = 0ms, Average = 0ms

C:\>
```

9. Simpan konfigurasi jaringan dengan nama lab2.nwc

Lakukan perintah dibawah untuk setiap switch

Sw1

```
SW1#
SW1#write
Building configuration...
[OK]
```

Sw2

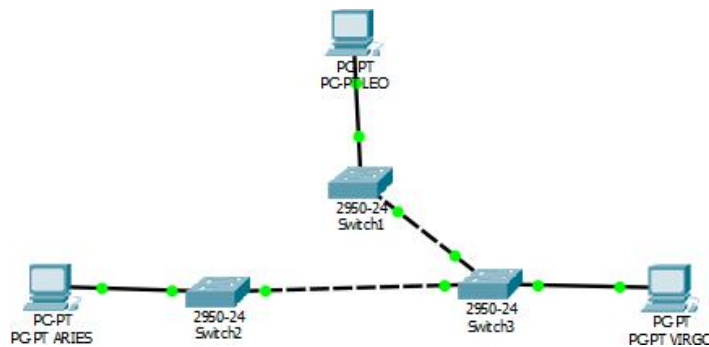
```
SW2#
SW2#write
Building configuration...
[OK]
```

Sw3

```
SW3 (vlan)#exit
APPLY completed.
Exiting....
SW3#write
Building configuration...
[OK]
SW3#
```

Kegiatan 2. Topologi 2

- 1) Menggunakan PACKET TRACER ubah topologi menjadi seperti topologi berikut ini:



- 2) Konfigurasi masing-masing PC dengan IP :
Leo = 172.21.1.1/24

| Physical | Config | Desktop | Programming | Attributes |
|--------------------------------------------------------------------|--------|---------|-------------|------------|
| IP Configuration [X] | | | | |
| IP Configuration | | | | |
| <input type="radio"/> DHCP <input checked="" type="radio"/> 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 | | | | |

Aries = 172.21.1.2/24

| Physical | Config | Desktop | Programming | Attributes |
|--------------------------------------------------------------------|--------|---------|-------------|------------|
| IP Configuration [X] | | | | |
| IP Configuration | | | | |
| <input type="radio"/> DHCP <input checked="" type="radio"/> 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 | | | | |

Virgo = 172.21.1.3/24

| Physical | Config | Desktop | Programming | Attributes |
|--------------------------------------------------------------------|--------|---------|-------------|------------|
| IP Configuration [X] | | | | |
| IP Configuration | | | | |
| <input type="radio"/> DHCP <input checked="" type="radio"/> Static | | | | |
| IP Address: 171.21.1.3 | | | | |
| Subnet Mask: 255.255.0.0 | | | | |
| Default Gateway: 0.0.0.0 | | | | |
| DNS Server: 0.0.0.0 | | | | |

- 3) Pada mode user atau mode privileged, lihat status STP pada masing - masing switch. Langkah pengoperasian
 - Tekan Enter

- Masuk mode privileged (Optional)
- Ketik show spanning-tree

Sw 1

```
SW1#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address     000C.857D.DC34
            Cost        19
            Port        3(FastEthernet0/3)
            Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32769 (priority 32768 sys-id-ext 1)
            Address     0040.0B4E.278C
            Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec
            Aging Time   20

Interface    Role Sts Cost      Prio.Nbr Type
-----
Fa0/3        Root FWD 19        128.3    P2p
Fa0/1        Desg FWD 19        128.1    P2p

SW1#
```

Sw 2

```
SW2#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address     000C.857D.DC34
            Cost        19
            Port        3(FastEthernet0/3)
            Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32769 (priority 32768 sys-id-ext 1)
            Address     0010.11B8.5078
            Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec
            Aging Time   20

Interface    Role Sts Cost      Prio.Nbr Type
-----
Fa0/1        Desg FWD 19        128.1    P2p
Fa0/3        Root FWD 19        128.3    P2p

SW2#
```

Sw 3

```
SW3#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address     000C.857D.DC34
            This bridge is the root
            Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32769 (priority 32768 sys-id-ext 1)
            Address     000C.857D.DC34
            Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec
            Aging Time   20

Interface    Role Sts Cost      Prio.Nbr Type
-----
Fa0/1        Desg FWD 19        128.1    P2p
Fa0/3        Desg FWD 19        128.3    P2p
Fa0/2        Desg FWD 19        128.2    P2p

SW3#
```

- 4) Untuk tiap switch isikan tabel berikut:

Sw 1

| No | Variable | Nilai |
|----|------------------------------|---------------------------|
| 1 | Root ID | 32769 : 000C.857D.DC34 |
| 2 | Priority | 32769 |
| 3 | MAC Address | 0040.0B4E.278C |
| 4 | Bridge ID | 32769 :0040.0B4E.278C |
| 5 | Cost (0 / 1 ; 0 / 2 ; 0 / 3) | Fa0/1 --> 19, Fa0/3--> 19 |
| 6 | Hello Time | 2 Sec |
| 7 | MaxAge | 20 Sec |
| 8 | Forward Delay | 15 Sec |

Sw 2

| No | Variable | Nilai |
|----|------------------------------|---------------------------|
| 1 | Root ID | 32769 : 000C.857D.DC34 |
| 2 | Priority | 32769 |
| 3 | MAC Address | 0010.11B8.5078 |
| 4 | Bridge ID | 32769 : 0010.11B8.5078 |
| 5 | Cost (0 / 1 ; 0 / 2 ; 0 / 3) | Fa0/1 --> 19, Fa0/3--> 19 |
| 6 | Hello Time | 2 Sec |
| 7 | MaxAge | 20 Sec |
| 8 | Forward Delay | 15 Sec |

Sw 3

| No | Variable | Nilai |
|----|------------------------------|-----------------------------------------|
| 1 | Root ID | 32769 : 000C.857D.DC34 |
| 2 | Priority | 32769 |
| 3 | MAC Address | 000C.857D.DC34 |
| 4 | Bridge ID | 32769 : 000C.857D.DC34 |
| 5 | Cost (0 / 1 ; 0 / 2 ; 0 / 3) | Fa0/1 --> 19, Fa0/2 --> 19, Fa0/3--> 19 |
| 6 | Hello Time | 2 Sec |
| 7 | MaxAge | 20 Sec |
| 8 | Forward Delay | 15 Sec |

5) Kemudian Tentukan

Root Bridge : SW3

Designated bride : SW2

Root Port : SW1 Fa 0/3, SW 2 Fa 0/3

Designated Port : SW1 Fa 0/1 , SW 2 Fa0/1 , SW 3 (Fa0/1,Fa 0/2,Fa0/3)

Port yang berada pada keadanforwarding : SW1(Fa 0/1;0/3) ,SW2(Fa 0/1;0/3), dan SW3(Fa 0/1;0/2;0/3)

Port yang berada pada keadan blocking : tidak ada yang terblock

6) Test ping pc leo ke pc virgo

- Klik pada pc leo
- Pilih tab desktop
- Pilih command prompt
- Tuliskan ping 172.21.1.3

```
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 = 0ms, Average = 0ms
```