Nama : Rifqi Aditya Mahendra

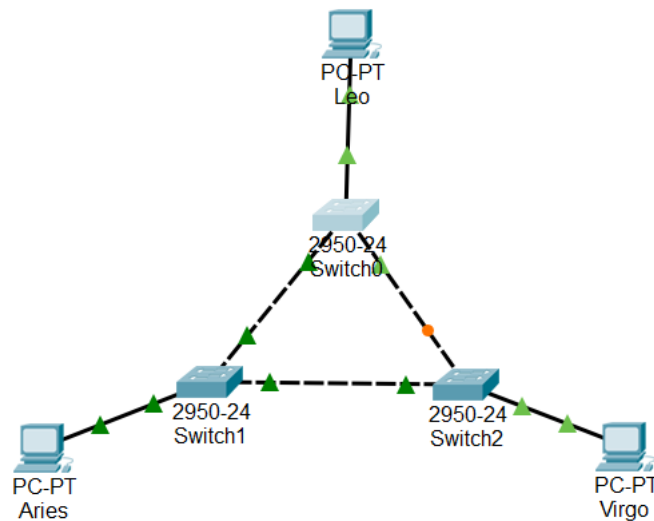NIM   : L200180083

Kelas :C

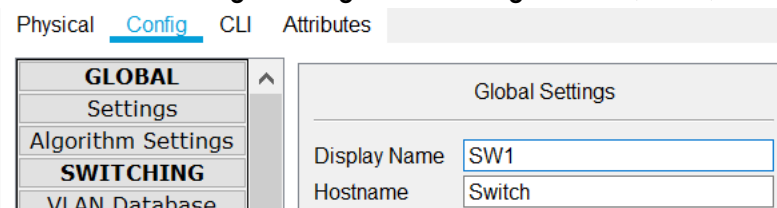# MODUL 6

1. Kegiatan 1. Topologi 1
   a. Menggunakan PACKET TRACER buat topologi berikut ini dengan menggunakan switch Catalyst 2950

Tugas 1A: Tulis langkah pembuatan topologi.
   1) Masuk ke aplikasi Cisco Packet Tracer
   2) Pilih pada tab 'End Devices' dan klik 'PC'
   3) Drag ke tempat pengerjaan dan lakukan sebanyak 3 kali
   4) Pilih pada tab 'Switches' dan klik switch 2950-24
   5) Drag ke tempat pengerjaan dan lakukan sebanyak 3 kali
   6) Hubungkan dengan kabel

   b. Beri nama masing-masing switch dengan SW1,SW2,SW3

Tugas 2A: Tulis langkah pemberian nama switch mulai dari model user.

SW1

```
Switch(config)#hostname SW1
SW1(config)#end
SW1#
%SYS-5-CONFIG_I: Configured from console by console
```

SW2

```
Switch>enable
Switch#configure terminal
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>#
Switch>enable
Switch#configure terminal
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
```

c. Konfigurasi masing-masing PC dengan alamat IP:

- Leo = 172.21.1.1/24

- Aries = 172.21.1.2/24

  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

- Virgo = 172.21.1.3/24

  Virgo

  | Physical | Config | Desktop | Programming | Attributes |

  IP Configuration

  Interface   FastEthernet0

  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

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

- Tekan enter
- Masuk mode privileged(optional)
- Ketik show spanning-tree

Tugas 4A: Pada kondisi default, capture masing-masing switch

SW1

```
show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.435B.CE23
             Cost        19
             Port        2(FastEthernet0/2)
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     0002.4A11.B70B
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  20

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

SW1#
```

SW2

```
show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.435B.CE23
             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     0001.435B.CE23
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  20

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

SW2#
```

SW3

```
show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.435B.CE23
             Cost        19
             Port        1(FastEthernet0/1)
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     0060.5CD0.4297
             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    P2p
Fa0/3            Desg FWD 19        128.3    P2p
Fa0/1            Root FWD 19        128.1    P2p

SW3#
```

Tugas 4B: Untuk tiap tiap switch, isikan tabel berikut:

SW1

No	Variabel	Nilai
1.	Root ID	32769:0001.435B.CE23
2.	Priority	32769
3.	MAC Adrress	0002.4A11.B70B
4.	Bridge ID	32769:0002.4A11.B70B
5.	Cost(0/1;0/2;0/3)	19;19;19
6.	Hello Time	2 sec
7.	MaxAge	20 sec
8.	Forward Delay	15 sec

SW2

No	Variabel	Nilai
1.	Root ID	32769:0001.435B.CE23
2.	Priority	32769
3.	MAC Adrress	0001.435B.CE23
4.	Bridge ID	32769:0001.435B.CE23
5.	Cost(0/1;0/2;0/3)	19;19;19
6.	Hello Time	2 sec
7.	MaxAge	20 sec
8.	Forward Delay	15 sec

SW3

No	Variabel	Nilai
1.	Root ID	32769:0001.435B.CE23
2.	Priority	32769
3.	MAC Adrress	0060.5CD0.4297
4.	Bridge ID	32769:0060.5CD0.4297
5.	Cost(0/1;0/2;0/3)	19;19;19
6.	Hello Time	2 sec
7.	MaxAge	20 sec
8.	Forward Delay	15 sec

Tugas 4C: Pada kondisi default tersebut, switch dan port mana saja yang:

- Menjadi root bridge   : SW2
- Menjadi designated bridge   : SW1

- Menjadi root port : SW1 (Fa0/2), SW3 (Fa0/1)
- Menjadi designated bridge : SW1 (Fa0/1;Fa0/3), SW2 (Fa0/1;Fa0/2;Fa0/3),SW3 (Fa0/3)

Tugas 4D: Pada kondisi default tersebut, port mana saja yang:

- Berada pada keadaan forwarding : SW1 (Fa0/1;Fa0/2;Fa0/3), SW2 (Fa0/1;Fa0/2;Fa0/3), SW3 (Fa0/1;Fa0/3)
- Berada pada keadaan blocking : SW3 (Fa0/1)

e. Dari PC Leo lakukan ping ke PC Virgo

```
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=87ms TTL=128
Reply from 172.21.1.3: bytes=32 time=18ms TTL=128
Reply from 172.21.1.3: bytes=32 time=12ms TTL=128
Reply from 172.21.1.3: bytes=32 time=17ms 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 = 12ms, Maximum = 87ms, Average = 33ms

C:\>
```

Tugas 5A: Tulis langkah untuk melakukan perintah ping

- Klik pada PC Leo
- Pilih tab desktop
- Pilih command prompt
- Ketik ping 172.21.1.3

f. Simpan konfiguraasi jaringan dengan nama lab2.nwc

Tugas 6A: Tulis langkah untuk menyimpan konfigurasi jaringan.

SW1

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

SW2

```
SW2#write
Building configuration...
[OK]
SW2#
```
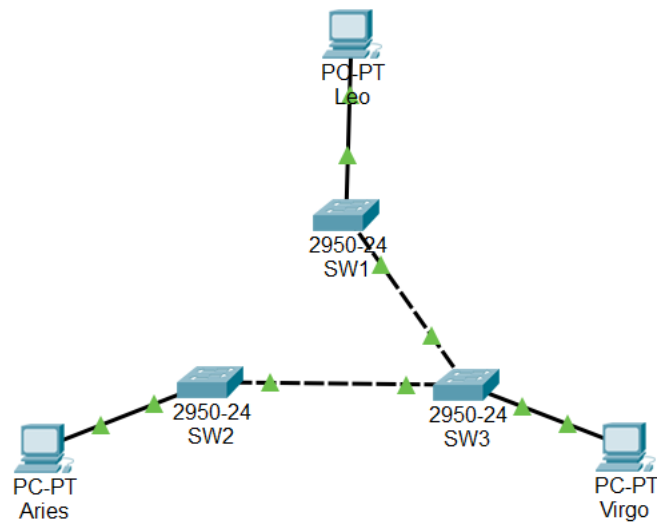
SW3

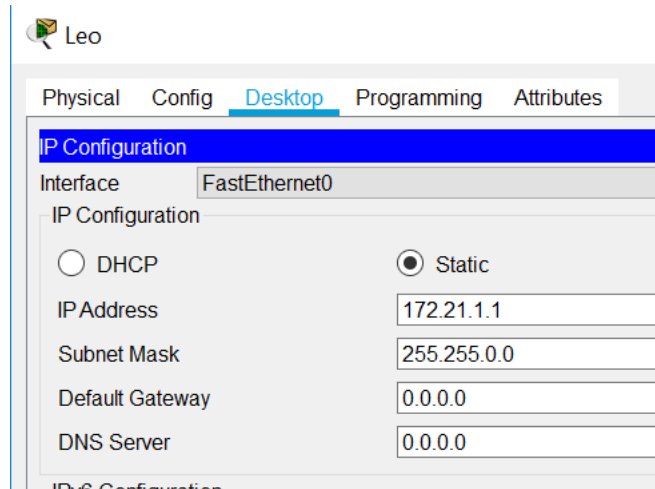```
SW3#write
Building configuration...
[OK]
SW3#
```

2. Kegiatan 2. Topologi 2
   a. Menggunakan PACKET TRACER ubah topologi menjadi seperti topologi berikut ini:



   b. konfigurasi masing-masing PC dengan IP:

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

Virgo

| Physical | Config | Desktop | Programming | Attributes |

IP Configuration

Interface    FastEthernet0

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

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

- Tekan enter
- Masuk mode privileged(optional)
- Ketik show spanning-tree

d. Pada kondisi default, capture masing-masing switch

SW1

```
show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.435B.CE23
             Cost        38
             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     0002.4A11.B70B
             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#
```

SW2

```
show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.435B.CE23
             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     0001.435B.CE23
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  20

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

SW2#
```

SW3

```
show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.435B.CE23
             Cost        19
             Port        1(FastEthernet0/1)
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     0060.5CD0.4297
             Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  20

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

SW3#
```

e. Untuk tiap tiap switch, isikan tabel berikut:

SW1

No	Variabel	Nilai
1.	Root ID	32769:0001.435B.CE23
2.	Priority	32769
3.	MAC Adrress	0002.4A11.B70B
4.	Bridge ID	32769:0002.4A11.B70B
5.	Cost(0/1;0/3)	19;19
6.	Hello Time	2 sec
7.	MaxAge	20 sec
8.	Forward Delay	15 sec

SW2

No	Variabel	Nilai
1.	Root ID	32769:0001.435B.CE23
2.	Priority	32769
3.	MAC Adrress	0001.435B.CE23
4.	Bridge ID	32769:0001.435B.CE23
5.	Cost(0/2;0/3)	19;19
6.	Hello Time	2 sec
7.	MaxAge	20 sec
8.	Forward Delay	15 sec

SW3

No	Variabel	Nilai
1.	Root ID	32769:0001.435B.CE23
2.	Priority	32769
3.	MAC Adrress	0060.5CD0.4297
4.	Bridge ID	32769:0060.5CD0.4297
5.	Cost(0/1;0/2;0/3)	19;19;19
6.	Hello Time	2 sec
7.	MaxAge	20 sec
8.	Forward Delay	15 sec

f. Pada kondisi default tersebut, switch dan port mana saja yang:

- Menjadi root bridge : SW2
- Menjadi designated bridge : SW1

- Menjadi root port : SW1 (Fa0/3), SW3 (Fa0/1)
- Menjadi designated bridge : SW1 (Fa0/1), SW2 (Fa0/2;Fa0/3),SW3 (Fa0/2;Fa0/3)

g. Pada kondisi default tersebut, port mana saja yang :

- Berada pada keadaan forwarding : SW1 (Fa0/1;Fa0/3), SW2 (Fa0/2;Fa0/3), SW3 (Fa0/1;Fa0/2/Fa0/3)
- Berada pada keadaan blocking : Tidak ada

h. Test ping PC Leo ke PC Virgo

```
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=61ms TTL=128
Reply from 172.21.1.3: bytes=32 time<1ms TTL=128
Reply from 172.21.1.3: bytes=32 time=18ms 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 = 61ms, Average = 20ms

C:\>
```