

Nama : Anang Prasetyo

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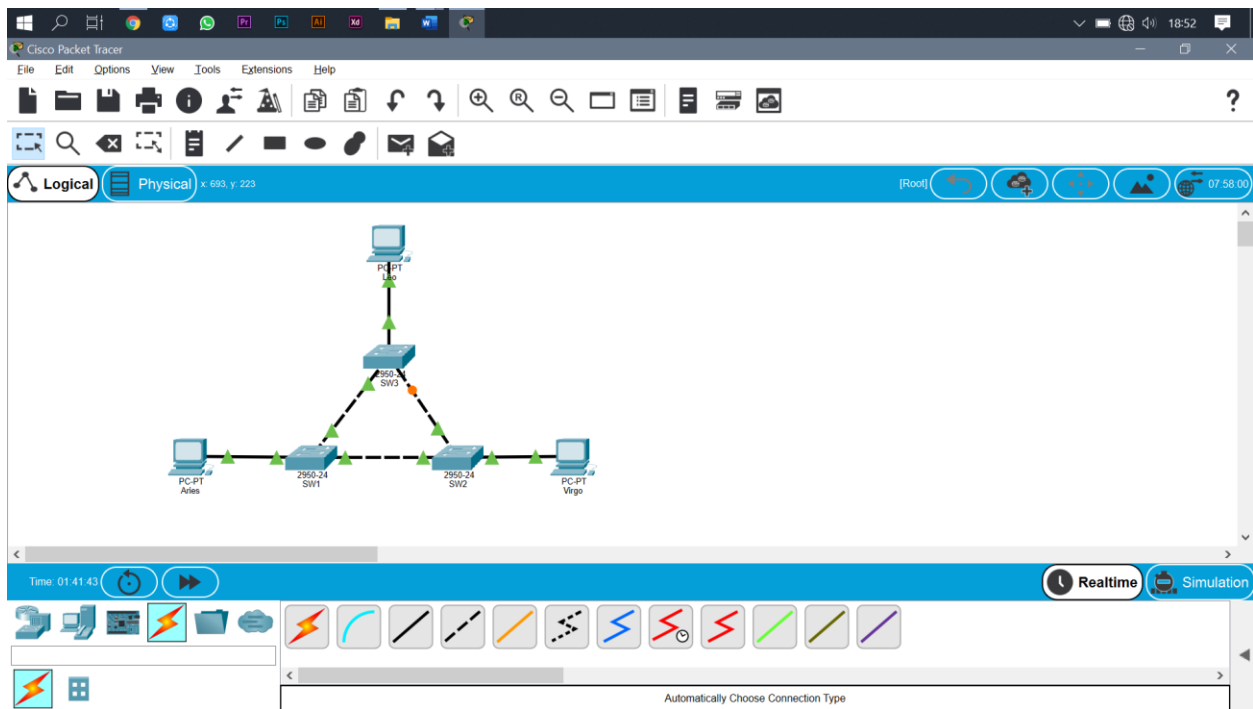
Kelas : B

MODUL 6

Kegiatan Praktikum

Kegiatan 1. Topologi 1

Desain jaringan



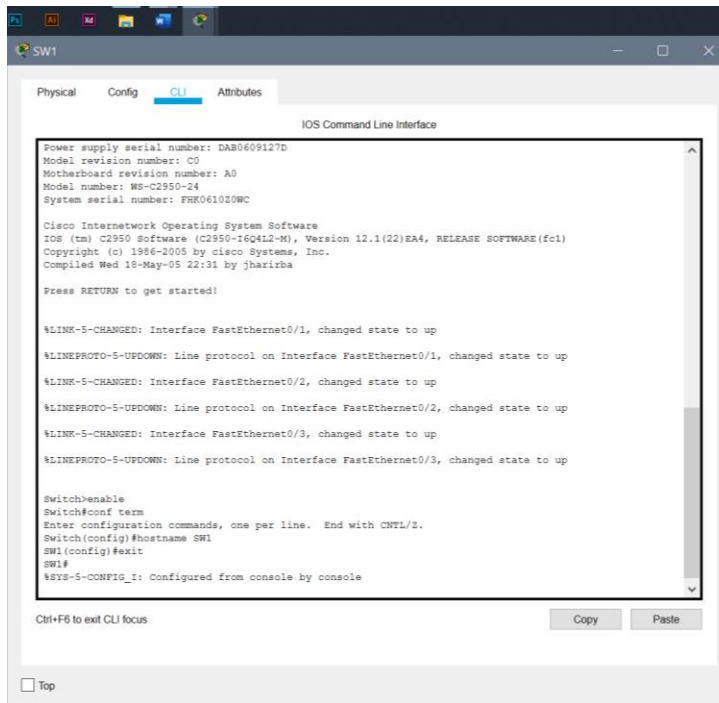
Tugas 1A

1. Pilih pada bagian Network Devices → Switches → pilih tipe 2950-24 → letakkan 3 switch → berikan nama SW1, SW2, dan SW3 pada masing masing switch
2. Pilih pada bagian End Devices → PC → letakkan 3 Komputer → berikan nama Aries, Leo, dan virgo pada masing masing komputer
3. Hubungkan dengan kabel. Pilih connections → pilih icon petir lalu sambung

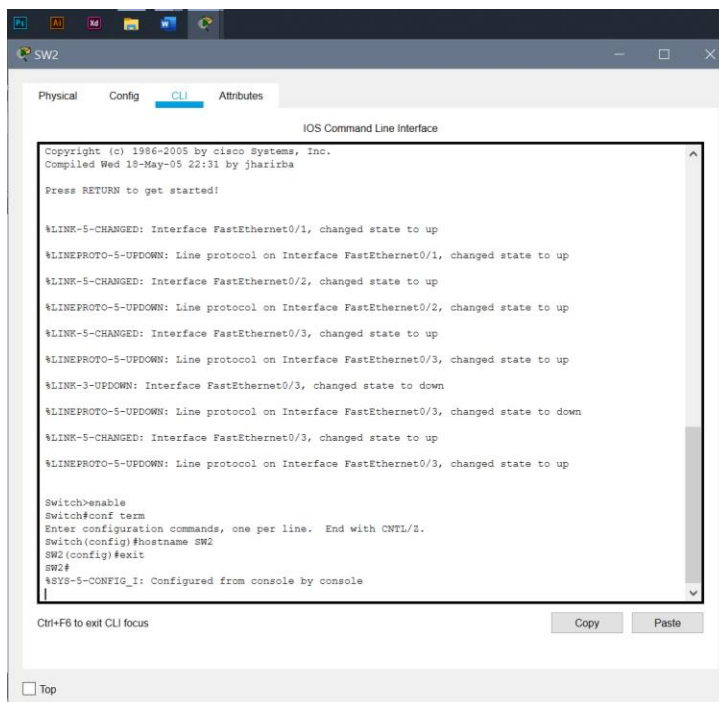
Tugas 2A

Langkah-langkah Pemberian nama masing-masing switch dengan SW1, SW2, dan SW3 dengan cara ketik enable → ketik conf term → ketik hostname SW1 / SW2 / SW3 → ketik exit

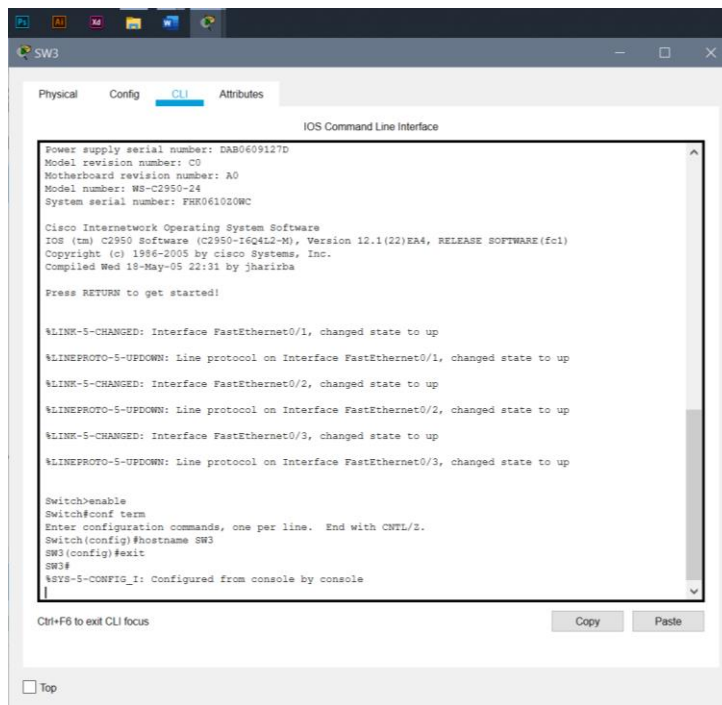
- SW1



- SW2

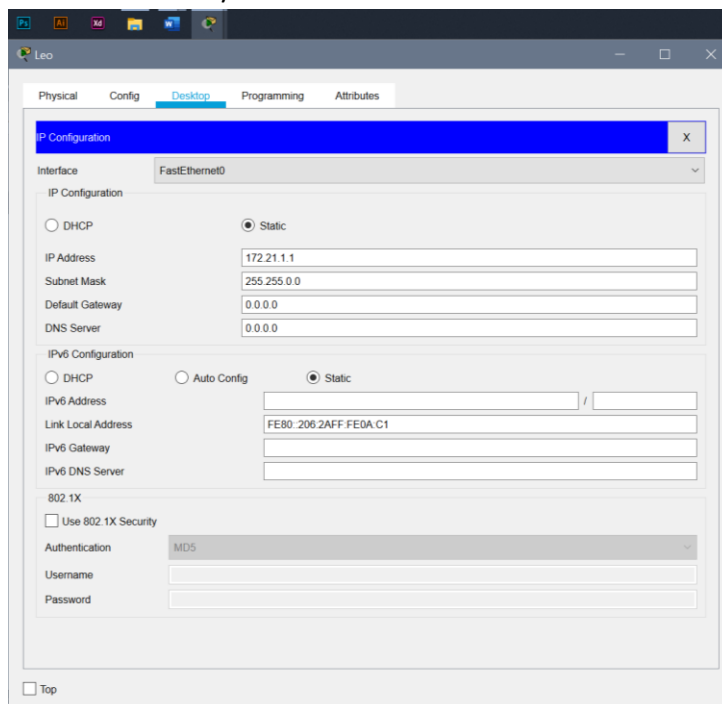


- SW3



Mengonfigurasi masing-masing PC dengan alamat IP :

- Leo = 172.21.1.1/24



- Aries = 172.21.1.2/24

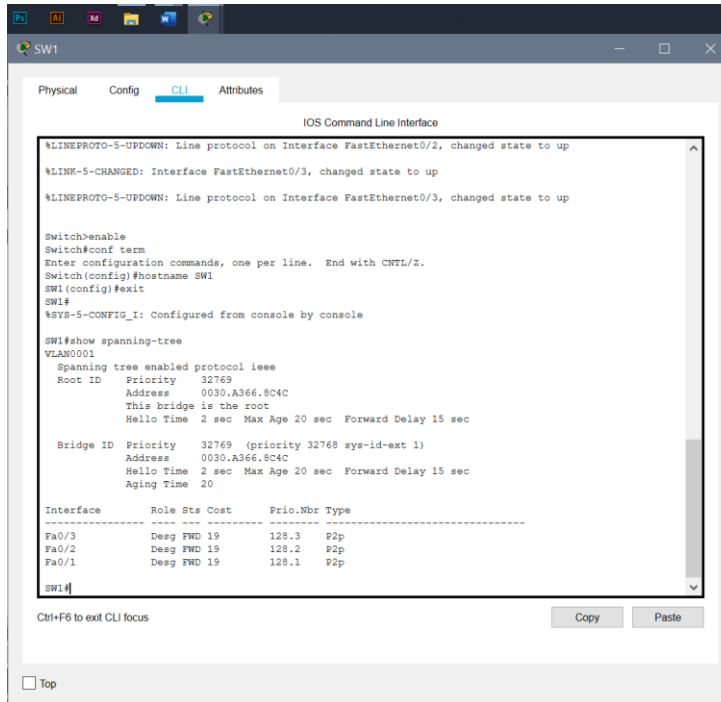
The screenshot shows the 'Aries' configuration window with the 'Desktop' tab selected. The 'IP Configuration' section is highlighted in blue. The 'Interface' dropdown is set to 'FastEthernet0'. Under 'IP Configuration', the 'Static' radio button is selected. The IP Address is 172.21.1.2, Subnet Mask is 255.255.0.0, Default Gateway is 0.0.0.0, and DNS Server is 0.0.0.0. Under 'IPv6 Configuration', the 'Static' radio button is selected. The IPv6 Address is empty, Link Local Address is FE80::260:3EFF:FE73:7366, IPv6 Gateway is empty, and IPv6 DNS Server is empty. The '802.1X' section has 'Use 802.1X Security' unchecked, Authentication set to 'MD5', and Username and Password fields empty. A 'Top' button is at the bottom left.

- Virgo = 172.21.1.3/24

The screenshot shows the 'Virgo' configuration window with the 'Desktop' tab selected. The 'IP Configuration' section is highlighted in blue. The 'Interface' dropdown is set to 'FastEthernet0'. Under 'IP Configuration', the 'Static' radio button is selected. 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. Under 'IPv6 Configuration', the 'Static' radio button is selected. The IPv6 Address is empty, Link Local Address is FE80::290:21FF:FE12:E014, IPv6 Gateway is empty, and IPv6 DNS Server is empty. The '802.1X' section has 'Use 802.1X Security' unchecked, Authentication set to 'MD5', and Username and Password fields empty. A 'Top' button is at the bottom left.

Tugas 4A

- SW1



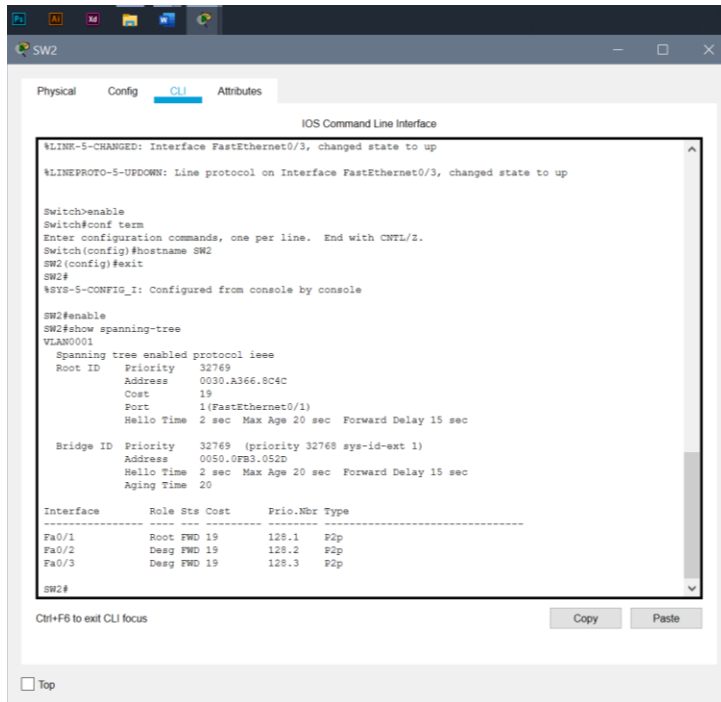
The screenshot shows the CLI interface of switch SW1. The output of the `show spanning-tree` command is displayed, showing the spanning tree enabled protocol IEEE, root ID 32769, and bridge ID 32769. The output also shows the spanning tree topology for VLAN0001, including the root bridge (32769) and the bridge ID (32769).

```
SW1#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0030.A366.8C4C
             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     0030.A366.8C4C
             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



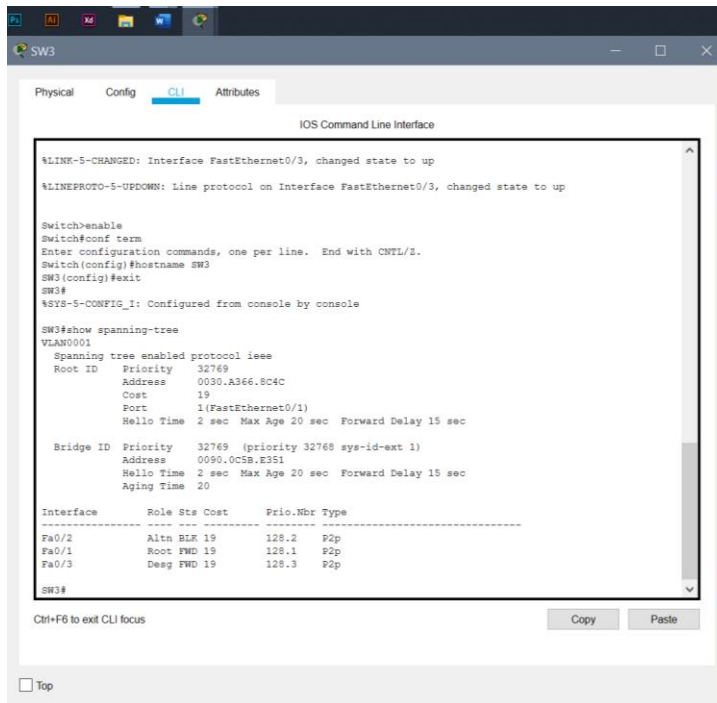
The screenshot shows the CLI interface of switch SW2. The output of the `show spanning-tree` command is displayed, showing the spanning tree enabled protocol IEEE, root ID 32769, and bridge ID 32769. The output also shows the spanning tree topology for VLAN0001, including the root bridge (32769) and the bridge ID (32769).

```
SW2#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0030.A366.8C4C
             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     0050.0F83.052D
             Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
             Aging Time 20

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

- SW3



Tugas 4B

- SW1

No	Variabel	Nilai
1	Root ID	32769
2	Priority	32769
3	MAC Address	0030.A366.8C4C
4	Bridge ID	32769
5	Cost(0/1;0/2;0/3)	19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Fordward Delay	15 sec

- SW2

No	Variabel	Nilai
1	Root ID	32769
2	Priority	32769
3	MAC Address	0050.0FB3.052D
4	Bridge ID	32769
5	Cost(0/1;0/2;0/3)	19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Fordward Delay	15 sec

- SW3

No	Variabel	Nilai
1	Root ID	32769
2	Priority	32769
3	MAC Address	0090.0C5B.E351
4	Bridge ID	32769
5	Cost(0/1;0/2;0/3)	19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Fordward Delay	15 sec

Tugas 4C

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

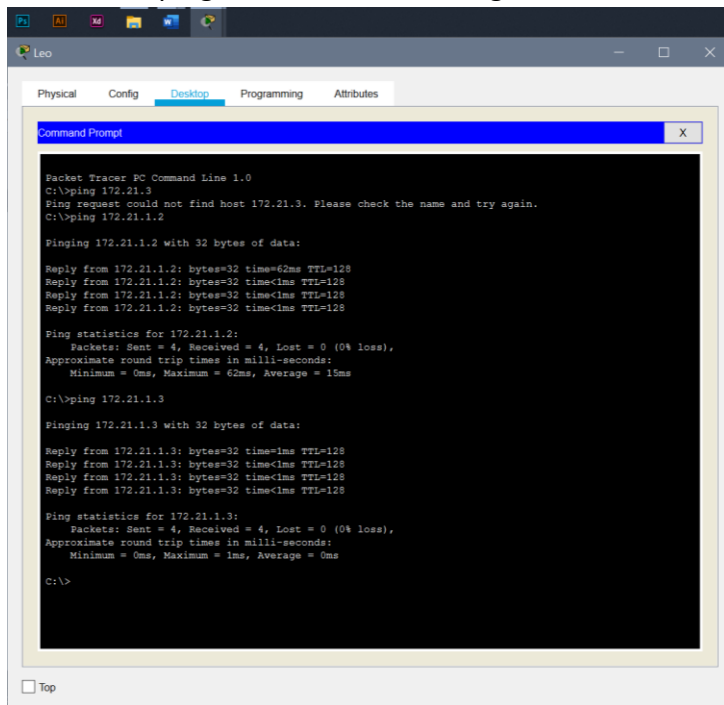
- Menjadi root bridge : SW1
- Menjadi designated bridge : SW3
- Menjadi root port : SW2(0/2), SW3(0/3)
- Menjadi designated port : SW3(0/3)

Tugas 4D

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

- Berada pada keadaan forwarding : SW1(0/3, 0/2, 0/1), SW2(0/1, 0/2, 0/3), dan SW3(0/1, 0/3)
- Berada pada keadaan blocking : SW3(fa 0/2)

Melakukan ping dari PC Leo ke PC Virgo



Tugas 5A

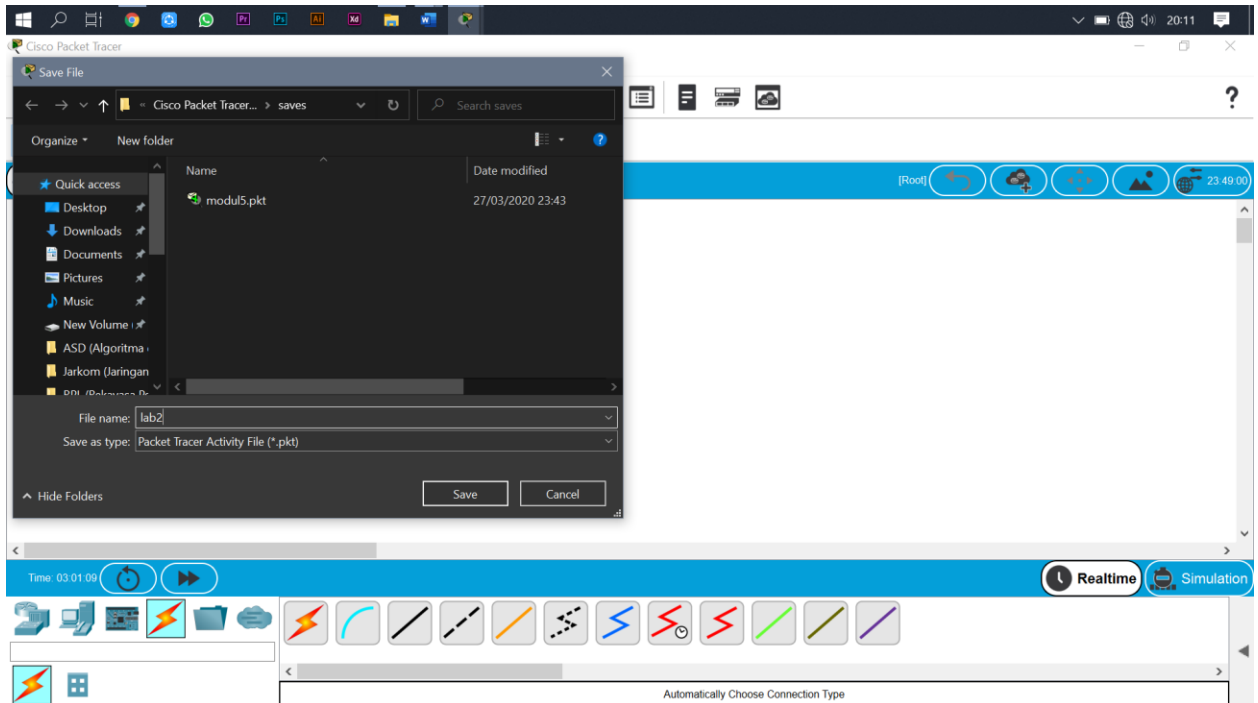
Langkah untuk melakukan perintah ping dari PC Leo ke PC Virgo :

1. Klik pada PC Leo
2. Pilih tab desktop
3. Pilih command prompt
4. Ketik ping 172.21.1.3

Tugas 6A:

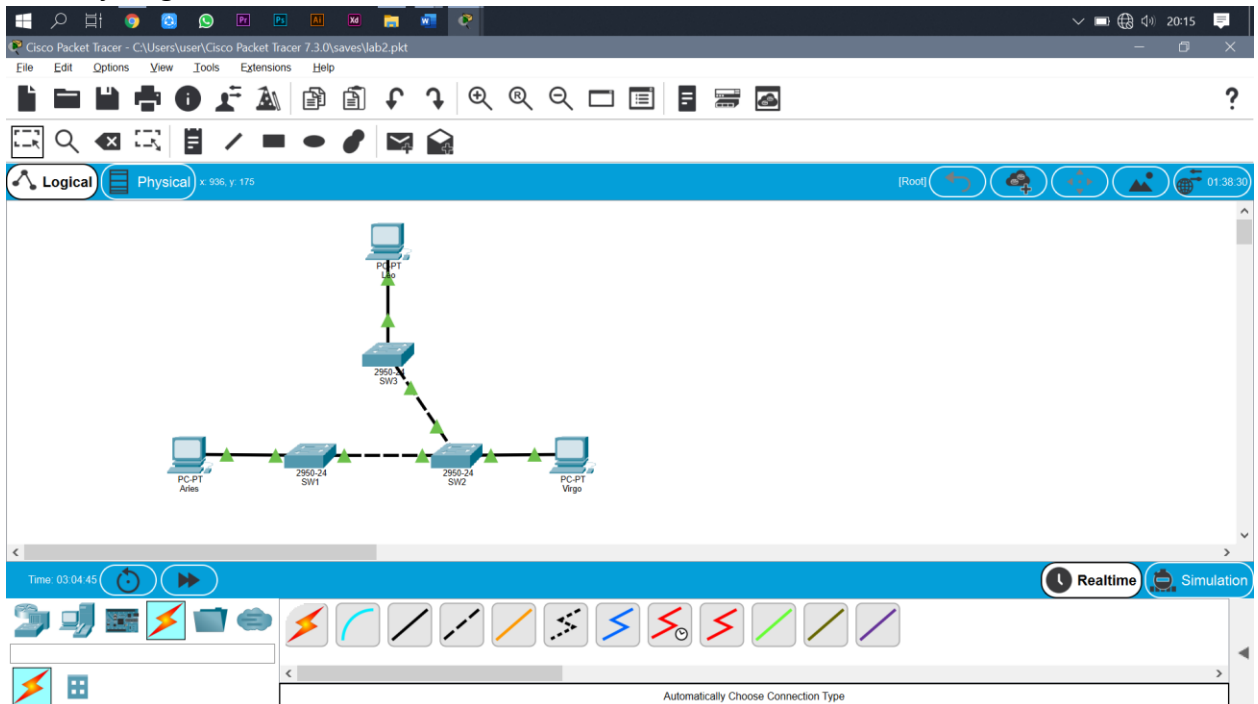
Langkah-langkah untuk menyimpan konfigurasi jaringan

1. Ketik CTRL + S
2. Beri nama lab2 yang akan berekstensi sesuai aplikasi yang digunakan



Kegiatan 2 Topologi 2

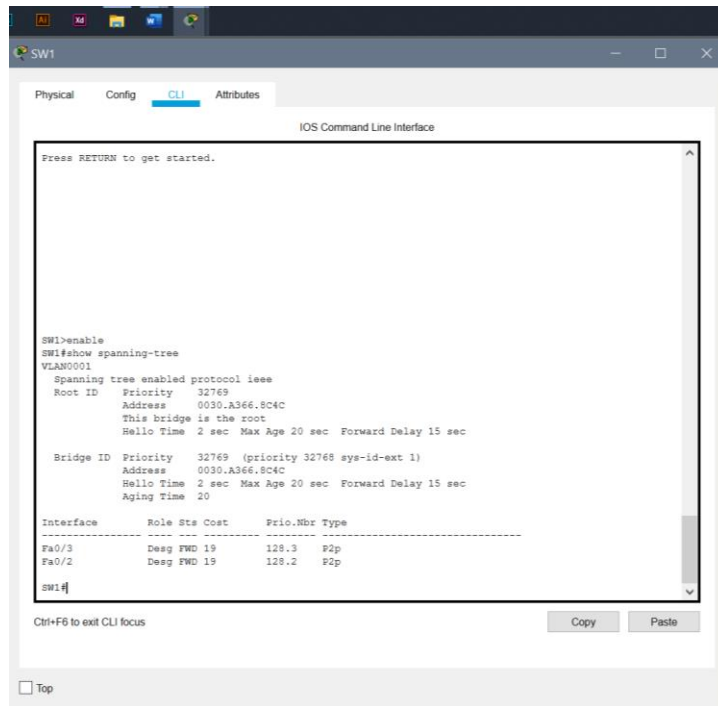
Desain jaringan



Melakukan langkah lab. 4, dan lab. 5 dengan mengetikkan perintah “show spanning-tree”

Tugas 9A : Mengerjakan seperti langkah lab. 4

- SW1



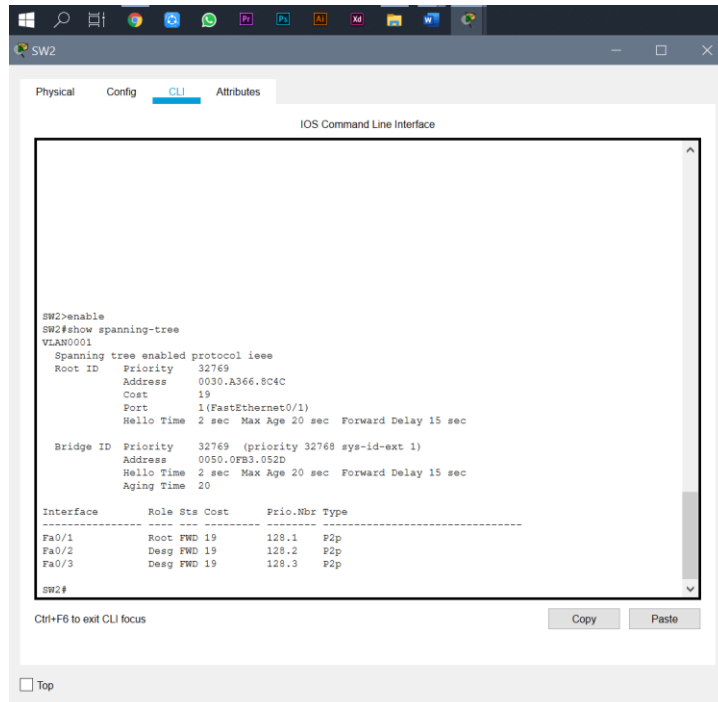
The screenshot shows the CLI of switch SW1. The user has entered the command 'show spanning-tree' in VLAN0001. The output displays the spanning tree protocol status, root ID, bridge ID, and a table of interfaces with their roles and costs.

```
SW1>enable
SW1#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
    Root ID    Priority    32769
              Address     0030.A366.8C4C
              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     0030.A366.8C4C
              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



The screenshot shows the CLI of switch SW2. The user has entered the command 'show spanning-tree' in VLAN0001. The output displays the spanning tree protocol status, root ID, bridge ID, and a table of interfaces with their roles and costs.

```
SW2>enable
SW2#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
    Root ID    Priority    32769
              Address     0030.A366.8C4C
              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     0050.0FB3.052D
              Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
              Aging Time 20

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

- SW3

```

SW3>enable
SW3#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address    0030.A366.8C4C
             Cost      38
             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    0090.0C5B.E351
             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
  
```

Mengisi table

- SW1

No	Variabel	Nilai
1	Root ID	32769
2	Priority	32769
3	MAC Address	0030.A366.8C4C
4	Bridge ID	32769
5	Cost(0/1;0/2;0/3)	19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Fordward Delay	15 sec

- SW2

No	Variabel	Nilai
1	Root ID	32769
2	Priority	32769
3	MAC Address	0050.0FB3.052D
4	Bridge ID	32769
5	Cost(0/1;0/2;0/3)	19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Fordward Delay	15 sec

- SW3

No	Variabel	Nilai
1	Root ID	32769
2	Priority	32769
3	MAC Address	0090.0C5B.E351
4	Bridge ID	32769
5	Cost(0/1;0/2;0/3)	19
6	Hello Time	2 sec
7	MaxAge	20 sec
8	Fordward Delay	15 sec

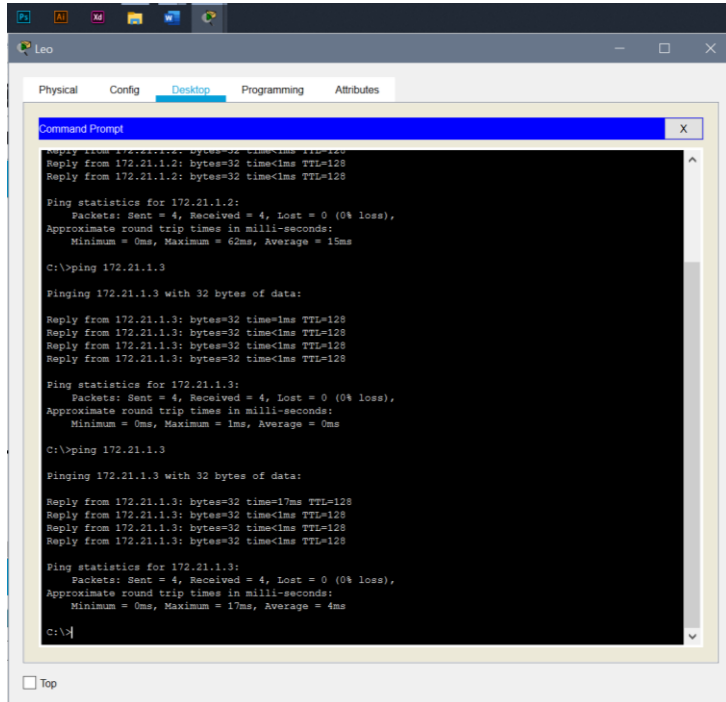
Pada kondisi default tersebut, switch dan port mana saja yang:

- Menjadi root bridge : SW1
- Menjadi designated bridge : SW3
- Menjadi root port : SW3(0/2), SW2(0/1)
- Menjadi designated port : SW2(0/2, 0/3), SW3(0/3)

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

- Berada pada keadaan forwarding : SW1(0/3, 0/2), SW2(0/1, 0/2, 0/3), dan SW3(0/2, 0/3)
- Berada pada keadaan blocking : tidak ada (-)

Melakukan ping dari PC Leo ke PC Virgo



```
Command Prompt
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 = 62ms, Average = 15ms

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 172.21.1.3

Pinging 172.21.1.3 with 32 bytes of data:

Reply from 172.21.1.3: bytes=32 time=17ms 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

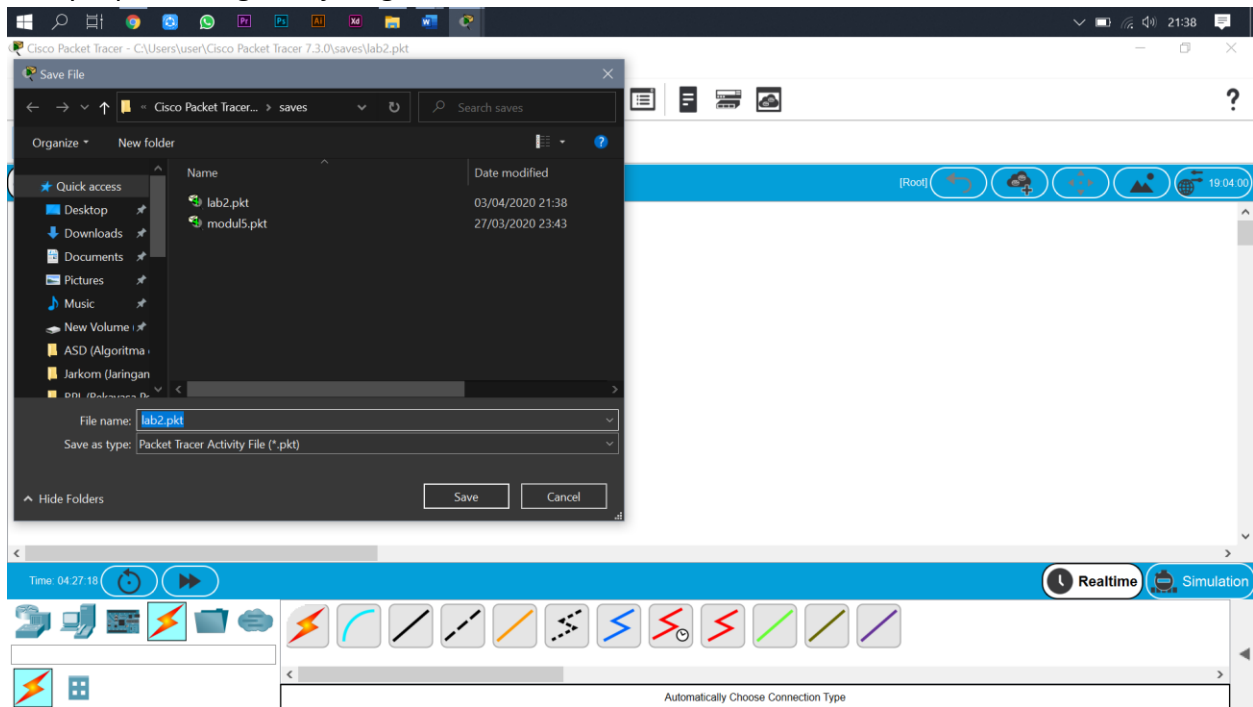
Ping statistics for 172.21.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 17ms, Average = 4ms

C:\>
```

Langkah untuk melakukan perintah ping dari PC Leo ke PC Virgo :

1. Klik pada PC Leo
2. Pilih tab desktop
3. Pilih command prompt
4. Ketik ping 172.21.1.3

Menyimpan konfigurasi jaringan



Langkah-langkah untuk menyimpan konfigurasi jaringan

1. Ketik CTRL + S
2. Beri nama lab2 yang akan berekstensi sesuai aplikasi yang digunakan