

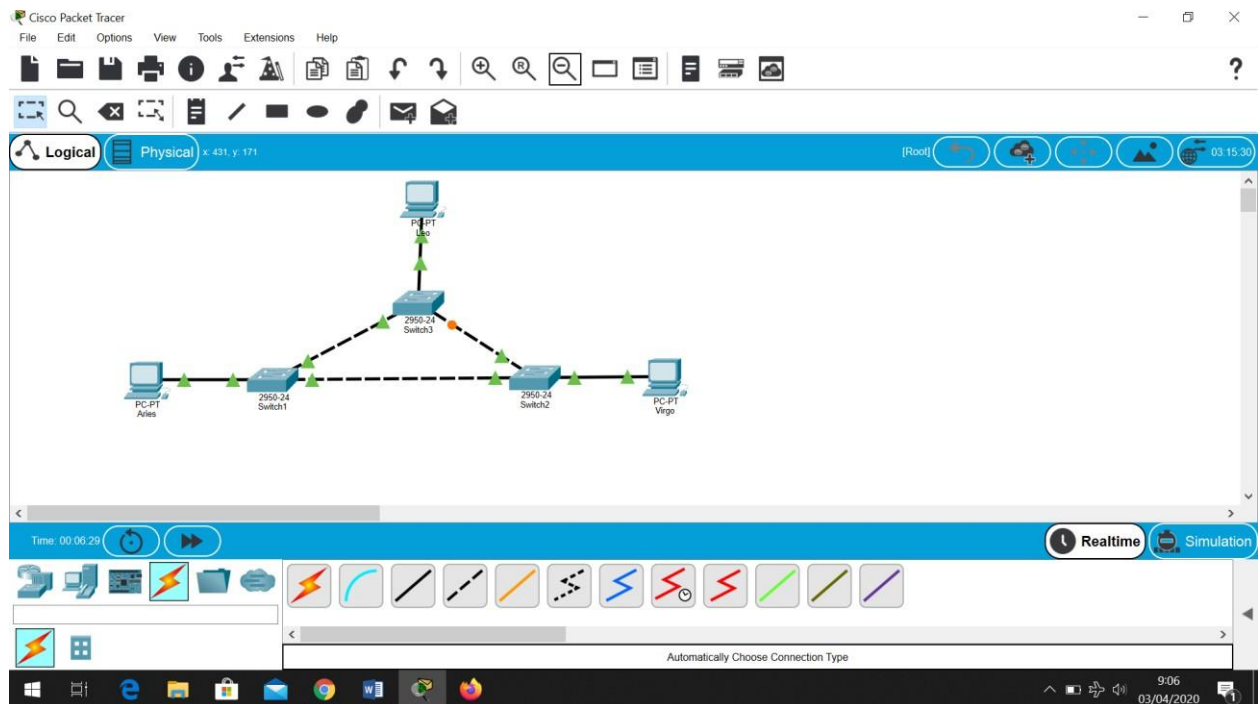
Nama : Moch afrizal

NIM : L200180022

## Modul 6

### Spanning Tree Protocol

#### 1. Kegiatan 1. Topologi 1



#### Tugas 1A

- Pilih pada bagian Network Device, switches, pilih tipe 2950-24, letakkan 3 switch, berikan nama SW1, SW2, SW3 pada masing-masing switch.
- Pilih pada bagian End Device, PC, letakkan 3 komputer, berikan nama Aries, Leo dan Virgo pada masing-masing computer.
- Hubungkan dengan kabel.

#### Tugas 2A

Langkah-langkah pemberian nama masing-masing dengan SW1, SW2, dan SW3 dengan cara klik enable, ketik conf term, ketik hostname SW1/SW2/SW3 ketik exit.

Switch1

PhysicalConfigCLIAttributes

IOS Command Line Interface

Motherboard revision number: A0  
Model number: WS-C2950-24  
System serial number: FHK0610Z0WC  
  
Cisco Internetwork Operating System Software  
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4, RELEASE SOFTWARE(fc1)  
Copyright (c) 1986-2005 by cisco Systems, Inc.  
Compiled Wed 18-May-05 22:31 by jharirba  
  
Press RETURN to get started!  
  
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up  
  
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up  
  
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up  
  
Switch>enable  
Switch#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Switch(config)#  
Switch(config)#hostname SW1  
SW1(config)#  
SW1(config)#EXIT  
SW1#  
%SYS-5-CONFIG\_I: Configured from console by console

Ctrl+F6 to exit CLI focus

CopyPaste

☐ Top

Switch2

PhysicalConfigCLIAttributes

IOS Command Line Interface

Model revision number: C0  
Motherboard revision number: A0  
Model number: WS-C2950-24  
System serial number: FHK0610Z0WC  
  
Cisco Internetwork Operating System Software  
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4, RELEASE SOFTWARE(fc1)  
Copyright (c) 1986-2005 by cisco Systems, Inc.  
Compiled Wed 18-May-05 22:31 by jharirba  
  
Press RETURN to get started!  
  
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up  
  
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up  
  
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up  
  
Switch>enable  
Switch#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Switch(config)#hostname SW2  
SW2(config)#  
SW2(config)#exit  
SW2#  
%SYS-5-CONFIG\_I: Configured from console by console

Ctrl+F6 to exit CLI focus

CopyPaste

☐ Top

Switch3

Physical

Config

CLI

Attributes

IOS Command Line Interface

Power supply serial number: DAB0609127D  
Model revision number: C0  
Motherboard revision number: A0  
Model number: WS-C2950-24  
System serial number: FHK061020WC  
  
Cisco Internetwork Operating System Software  
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4, RELEASE SOFTWARE(fc1)  
Copyright (c) 1986-2005 by cisco Systems, Inc.  
Compiled Wed 18-May-05 22:31 by jharirba  
  
Press RETURN to get started!  
  
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up  
  
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up  
  
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up  
  
Switch>enable  
Switch#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Switch(config)#hostname SW3  
SW3(config)#exit  
SW3#  
%SYS-5-CONFIG\_I: Configured from console by console

Ctrl+F6 to exit CLI focus

Copy

Paste

☐ Top

Tugas 4A

## IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down
%LINK-3-UPDOWN: Interface FastEthernet0/3, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to down
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

SW1#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
    Root ID    Priority    32769
              Address     0001.6497.722A
              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     0001.6497.722A
              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
Fa0/2          Desg FWD 19        128.2    P2p
Fa0/3          Desg FWD 19        128.3    P2p

SW1#
```

Ctrl+F6 to exit CLI focus

Copy

Paste

Switch2

Physical

Config

CLI

Attributes

IOS Command Line Interface

%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

Switch>enable

Switch#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#hostname SW2

SW2(config)#

SW2(config)#exit

SW2#

%SYS-5-CONFIG\_I: Configured from console by console

SW2#show spanning-tree

VLAN0001

Spanning tree enabled protocol ieee

Root ID      Priority      32769

Address      0001.6497.722A

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      0060.4702.4A14

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  |
| Fa0/2     | Altn | BLK | 19   | 128.2 |     | P2p  |

SW2#

Ctrl+F6 to exit CLI focus

Copy

Paste

Top

Switch3

Physical
Config
**CLI**
Attributes

IOS Command Line Interface

```

Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname SW3
SW3(config)#exit
SW3#
%SYS-5-CONFIG_I: Configured from console by console

SW3#shoe spanning-tree
^
% Invalid input detected at '^' marker.

SW3#show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
            Address    0001.6497.722A
            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    0002.4A0E.EEB3
            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

SW3#

```

Ctrl+F6 to exit CLI focus

Copy

Paste

☐ Top

#### Tugas 4B

Untuk tiap-tiap switch, isikan tabel berikut : SW1

| No | Variabel           | Nilai                               |
|----|--------------------|-------------------------------------|
| 1  | Root ID            | 32769                               |
| 2  | Priority           | 32769 (priority 32768 sys-id-ext 1) |
| 3  | MAC Address        | 0001.6497.722A                      |
| 4  | Bridge ID          | 32769                               |
| 5  | Cost (0/1;0/2;0/3) | 19                                  |
| 6  | Hello Time         | 2 sec                               |
| 7  | MaxAge             | 20 sec                              |
| 8  | Forward Delay      | 15 sec                              |

#### SW2

| No | Variabel           | Nilai                               |
|----|--------------------|-------------------------------------|
| 1  | Root ID            | 32769                               |
| 2  | Priority           | 32769 (priority 32768 sys-id-ext 1) |
| 3  | MAC Address        | 0001.6497.722A                      |
| 4  | Bridge ID          | 32769                               |
| 5  | Cost (0/1;0/2;0/3) | 19                                  |
| 6  | Hello Time         | 2 sec                               |
| 7  | MaxAge             | 20 sec                              |
| 8  | Forward Delay      | 15 sec                              |

#### SW3

| No | Variabel           | Nilai                               |
|----|--------------------|-------------------------------------|
| 1  | Root ID            | 32769                               |
| 2  | Priority           | 32769 (priority 32768 sys-id-ext 1) |
| 3  | MAC Address        | 0001.6497.722A                      |
| 4  | Bridge ID          | 32769                               |
| 5  | Cost (0/1;0/2;0/3) | 19                                  |
| 6  | Hello Time         | 2 sec                               |
| 7  | MaxAge             | 20 sec                              |
| 8  | Forward Delay      | 15 sec                              |

#### Tugas 4C

Pada kondisi default tersebut mana saja.

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

#### Tugas 4D

Pada kondisi default tersebut, dan port mana saja

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

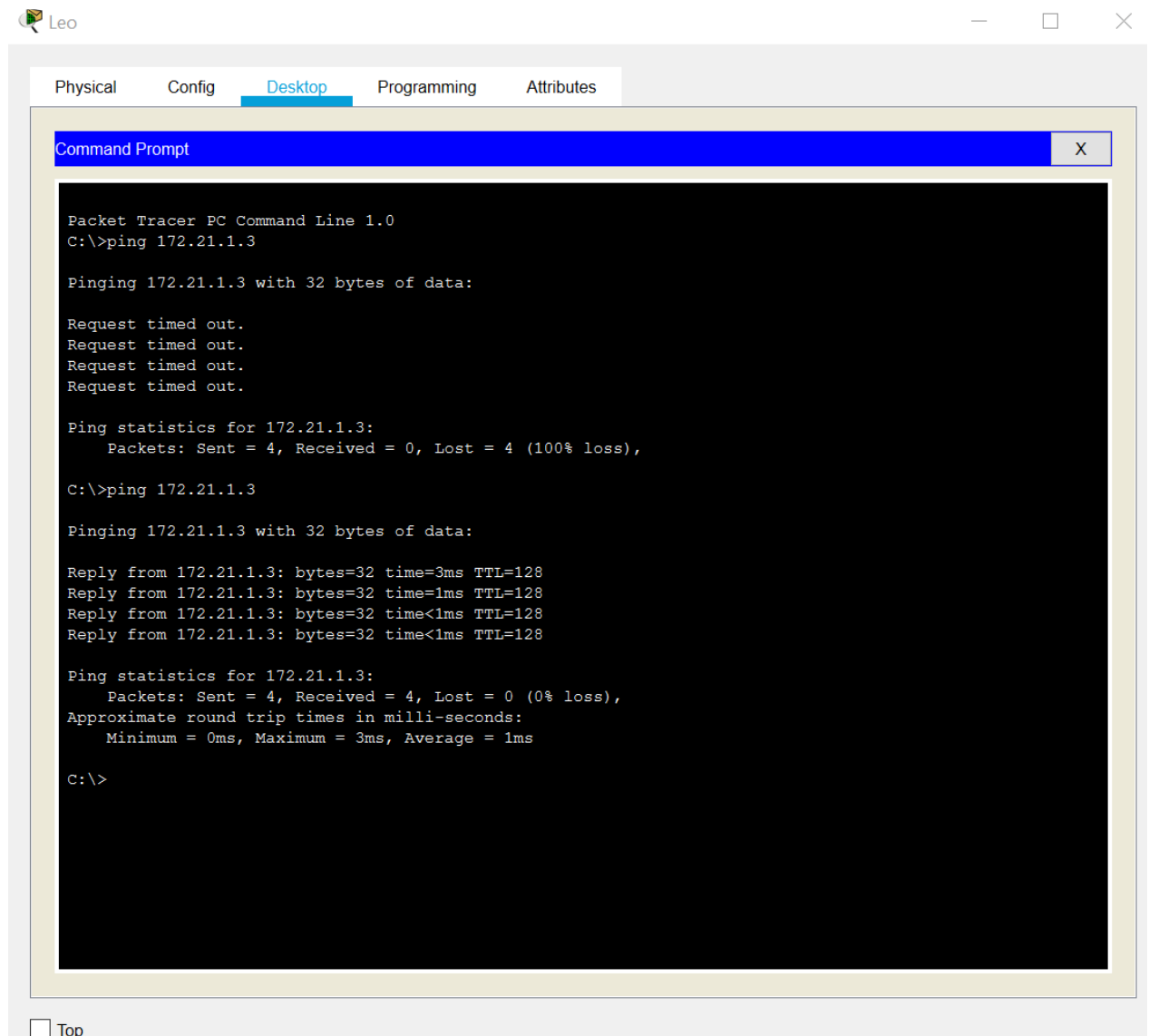
#### Tugas 5A

Langkah untuk melakukan perintah ping dari PC Leo ke PC Virgo

- 1) Klik pada PC Leo
- 2) Pilih tab desktop
- 3) Pilih command prompt



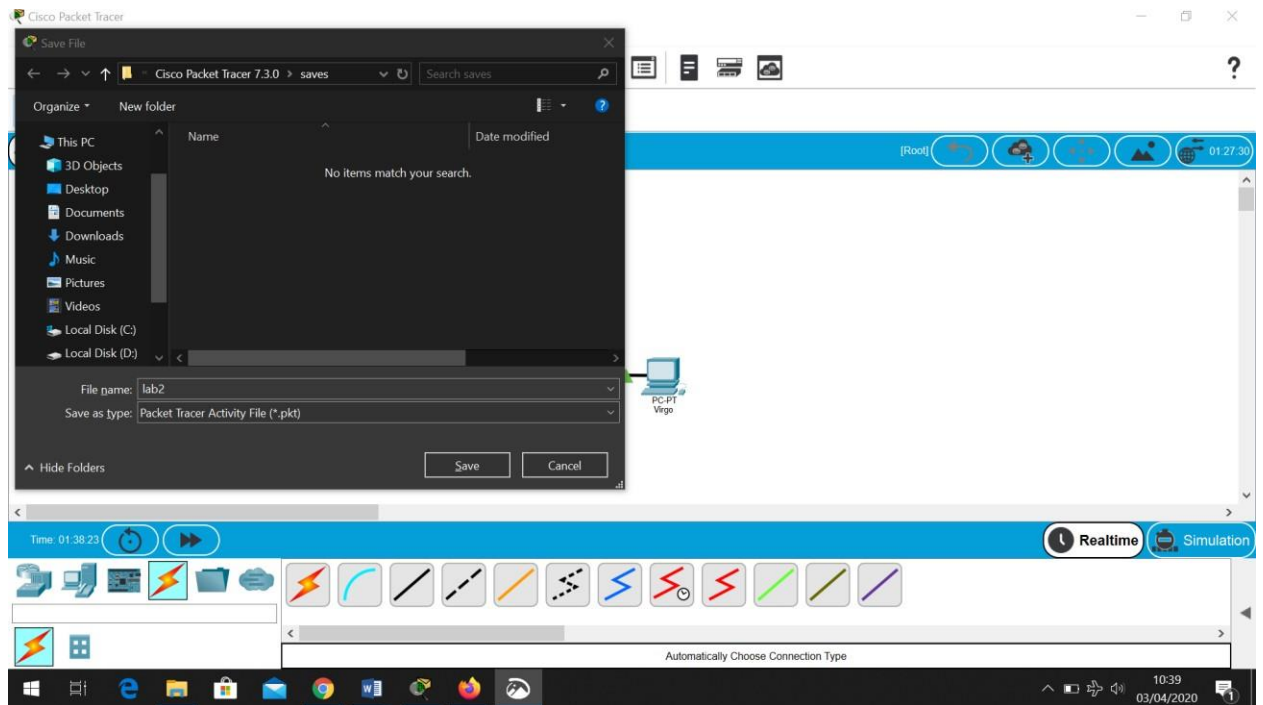
4) Ketik ping 172.21.1.3



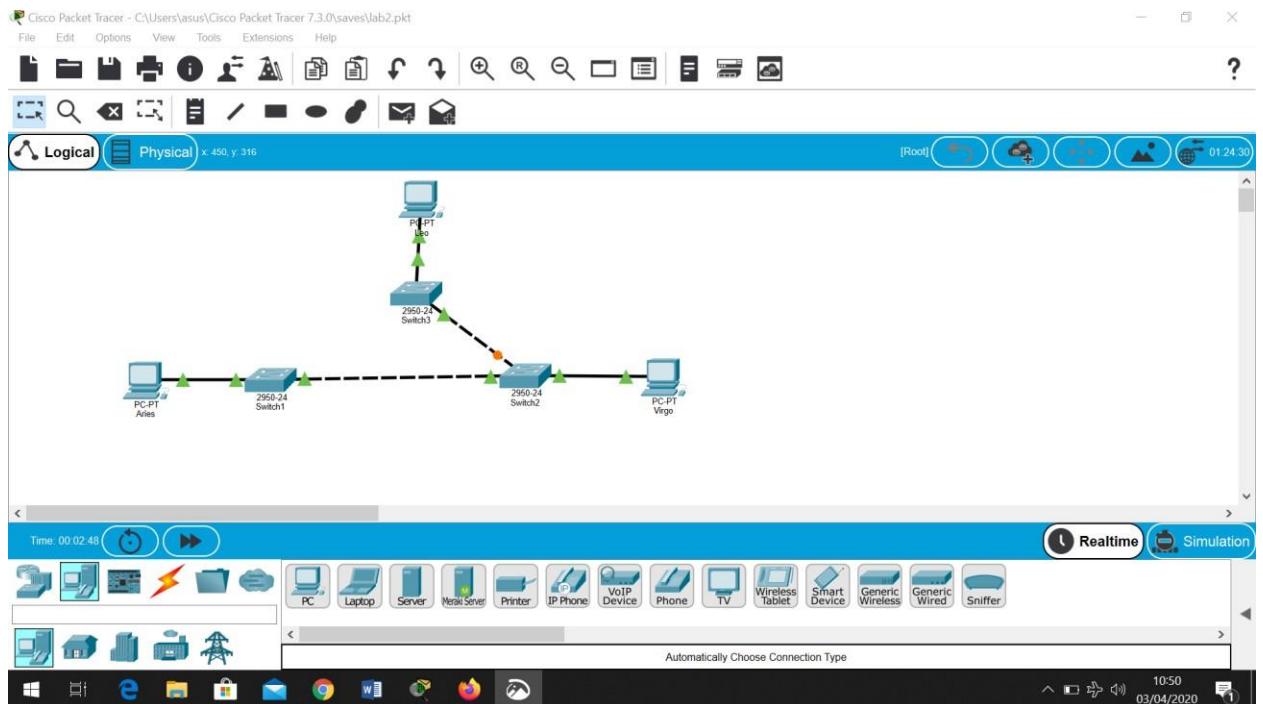
Tugas 6A

Langkah untuk menyimpan konfigurasi jaringan

- 1) Ketik CTRL + S
- 2) Beri nama lab2 yang akan bereksistensi sesuai aplikasi yang digunakan



## 2. Kegiatan 2. Topologi 2



Tugas 9A

## SW1

Switch1

Physical
Config
**CLI**
Attributes

IOS Command Line Interface

```

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
%LINK-3-UPDOWN: Interface FastEthernet0/2, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down

SW1>show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    32769
             Address     0001.6497.722A
             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     0001.6497.722A
             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

SW1>

```

Ctrl+F6 to exit CLI focus
Copy
Paste

Top

| No | Variabel           | Nilai                               |
|----|--------------------|-------------------------------------|
| 1  | Root ID            | 32769                               |
| 2  | Priority           | 32769 (priority 32768 sys-id-ext 1) |
| 3  | MAC Address        | 0001.6497.722A                      |
| 4  | Bridge ID          | 32769                               |
| 5  | Cost (0/1;0/2;0/3) | 19                                  |
| 6  | Hello Time         | 2 sec                               |
| 7  | MaxAge             | 20 sec                              |
| 8  | Forward Delay      | 15 sec                              |

## SW2

Switch2

Physical
Config
**CLI**
Attributes

IOS Command Line Interface

```

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

SW2>show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
    Root ID    Priority    32769
              Address    0001.6497.722A
              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    0060.4702.4A14
              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
Fa0/2          Desg FWD 19        128.2    P2p
Fa0/1          Desg FWD 19        128.1    P2p

SW2>

```

Ctrl+F6 to exit CLI focus

Copy

Paste

☐ Top

| No | Variabel           | Nilai                               |
|----|--------------------|-------------------------------------|
| 1  | Root ID            | 32769                               |
| 2  | Priority           | 32769 (priority 32768 sys-id-ext 1) |
| 3  | MAC Adrrss         | 0001.6497.722A                      |
| 4  | Bridge ID          | 32769                               |
| 5  | Cost (0/1;0/2;0/3) | 19                                  |
| 6  | Hello Time         | 2 sec                               |
| 7  | MaxAge             | 20 sec                              |
| 8  | Forwarrrd Delay    | 15 sec                              |

SW3

Switch3

Physical Config **CLI** Attributes

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
%LINK-3-UPDOWN: Interface FastEthernet0/2, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down

SW3>show spanning-tree
VLAN0001
  Spanning tree enabled protocol ieee
    Root ID    Priority    32769
              Address    0001.6497.722A
              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    0002.4A0E.EEB3
              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

SW3>
```

Ctrl+F6 to exit CLI focus

Copy Paste

| No | Variabel           | Nilai                               |
|----|--------------------|-------------------------------------|
| 1  | Root ID            | 32769                               |
| 2  | Priority           | 32769 (priority 32768 sys-id-ext 1) |
| 3  | MAC Address        | 0001.6497.722A                      |
| 4  | Bridge ID          | 32769                               |
| 5  | Cost (0/1;0/2;0/3) | 19                                  |
| 6  | Hello Time         | 2 sec                               |
| 7  | MaxAge             | 20 sec                              |
| 8  | Forward Delay      | 15 sec                              |

Pada kondisi default tersebut mana saja.

- Menjadi root bridge : SW3
- Menjadi designates bridge : SW1
- Menjadi root port : SW1(0/), SW(0/3)

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

Pada kondisi default tersebut, dan port mana saja

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

