

Judul

Mata Kuliah: Jaringan Komputer
Materi Praktikum ke: 10

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Tanggal Praktikum: 20-5-2025

BAB I

PENDAHULUAN

1.1 Latar Belakang

VLAN

VLAN atau Virtual Local Area Network adalah sub network yang dapat mengelompokkan kumpulan perangkat pada jaringan area lokal fisik (LAN) yang terpisah. Virtual Local Area Network juga bisa dikatakan pengelompokan logis perangkat dalam domain siaran yang sama.

Fungsi *Virtual Local Area Network* pada jaringan komputer adalah menyediakan metode pada jaringan yang dapat membagi jaringan fisik menjadi beberapa broadcast domain.

1.2 Tujuan

Mempelajari apa itu :

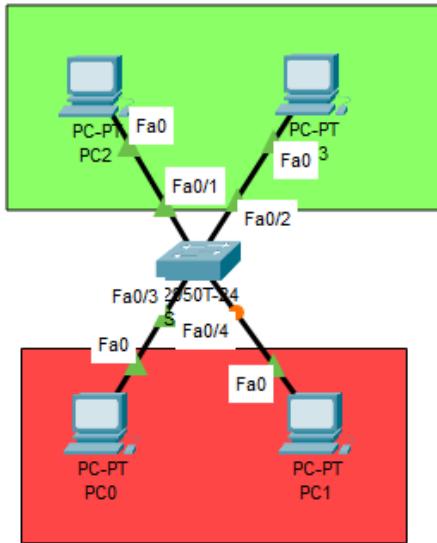
- VLAN Access
- VLAN Trunk
- Router on stick
- Final lab

BAB II

PROSEDUR KERJA

A. VLAN Access

1. Buat topologi seperti di bawah ini



Pada PC2 dan PC3 adalah bagian VLAN 10 dengan ip 192.168.10.0 dan PC0 dan PC1 adalah VLAN 20 dengan ip 192.168.20.0

2. Hubungkan access vlan ke masing-masing pc

VLAN Name	Status	Ports
1 default	active	Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16
Fa0/20		Fa0/17, Fa0/18, Fa0/19,
Fa0/24		Fa0/21, Fa0/22, Fa0/23,
10 ruang-guru		Gig0/1, Gig0/2
20 ruang-meeting	active	Fa0/1, Fa0/2
1002 fddi-default	active	Fa0/3, Fa0/4
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	
Switch(config)#		

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3. Lakukan pengetesan terhadap masing-masing pc

```
C:\>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Reply from 192.168.20.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>|
```

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

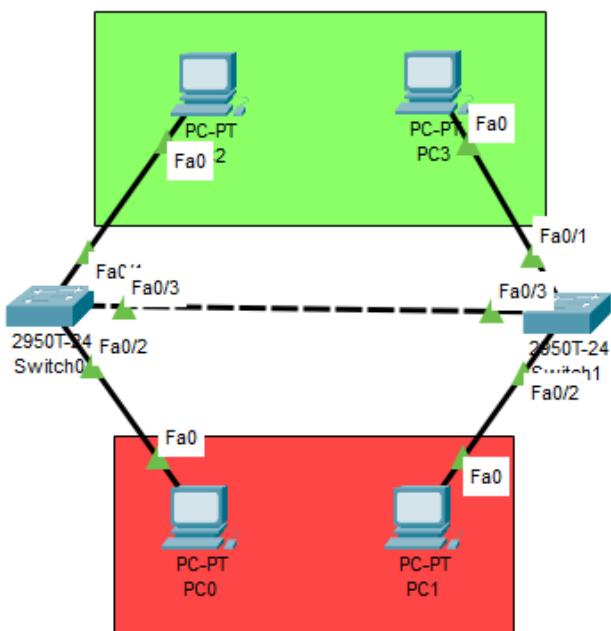
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>|
```

B.VLAN Trunk

1.buat topologi lalu tambah switch dan hubungkan antar switch tersebut menggunakan kabel cross



2.buat nama vlan di switch 0 dan switch 1 : vlan 10 ruang-guru dan vlan 20 ruang-meeting

Switch0

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch(config)#do show vlan brief
VLAN Name          Status    Ports
---- -----
1    default        active    Fa0/4, Fa0/5, Fa0/6, 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, Gig0/1, Gig0/2
1002 fddi-default   active
1003 token-ring-default active
1004 fddinet-default  active
1005 trnet-default   active
Switch(config)#vlan 10
Switch(config-vlan)#name ruang-guru
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name ruang-meeting
Switch(config-vlan)#exit
Switch(config)#do show vlan brief
VLAN Name          Status    Ports
---- -----
1    default        active    Fa0/4, Fa0/5, Fa0/6, 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, Gig0/1, Gig0/2
10   ruang-guru     active
20   ruang-meeting  active
1002 fddi-default   active
1003 token-ring-default active
1004 fddinet-default  active
1005 trnet-default   active
Switch(config)#

```

Top

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Switch1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch(config)#do show vlan brief
VLAN Name          Status    Ports
---- -----
1    default        active    Fa0/4, Fa0/5, Fa0/6, 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, Gig0/1, Gig0/2
1002 fddi-default   active
1003 token-ring-default active
1004 fddinet-default  active
1005 trnet-default   active
Switch(config)#vlan 10
Switch(config-vlan)#name ruang-guru
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name ruang-meeting
Switch(config-vlan)#exit
Switch(config)#do show vlan brief
VLAN Name          Status    Ports
---- -----
1    default        active    Fa0/4, Fa0/5, Fa0/6, 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, Gig0/1, Gig0/2
10   ruang-guru     active
20   ruang-meeting  active
1002 fddi-default   active
1003 token-ring-default active
1004 fddinet-default  active
1005 trnet-default   active
Switch(config)#

```

Top

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3.lalu hubungkan vlan di switch0 dengan pc yang terhubung dan begitu juga dengan switch1

Switch0

Physical Config **CLI** Attributes

IOS Command Line Interface

```
switch#int fa0/2
Switch(config-if)#sw
Switch(config-if)#switchport mode
Switch(config-if)#switchport mode ac
Switch(config-if)#switchport mode access
Switch(config-if)#sw
Switch(config-if)#switchport ac
Switch(config-if)#switchport access vlan 20
Switch(config-if)#ex
Switch(config-if)#int fa0/1
Switch(config-if)#sw
Switch(config-if)#switchport mo
Switch(config-if)#switchport mode ac
Switch(config-if)#switchport mode access
Switch(config-if)#sw
Switch(config-if)#switchport ac
Switch(config-if)#switchport access vla
Switch(config-if)#switchport access vlan 10
Switch(config-if)#ex
Switch(config)#do show vlan br
Switch(config)#do show vlan brief

VLAN Name          Status    Ports
----- -----
1    default        active    Fa0/4, Fa0/5, Fa0/6, 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, Gig0/1, Gig0/2
10   ruang-guru    active    Fa0/1
20   ruang-meeting active    Fa0/2
1002 fddi-default  active
1003 token-ring-default active
1004 fddinet-default active
1005 trnet-default  active
Switch(config)#

```

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Top

Switch1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
1005 trnet-default      active
Switch(config)#
Switch(config)#int fa0/2
Switch(config-if)#sw
Switch(config-if)#switchport m
Switch(config-if)#switchport mode ac
Switch(config-if)#switchport mode access
Switch(config-if)#sw
Switch(config-if)#switchport ac
Switch(config-if)#switchport access vlan 20
Switch(config-if)#ex
Switch(config)#int fa0/1
Switch(config-if)#sw
Switch(config-if)#switchport mo
Switch(config-if)#switchport mode ac
Switch(config-if)#switchport mode access
Switch(config-if)#sw
Switch(config-if)#switchport ac
Switch(config-if)#switchport access vlan 10
Switch(config-if)#ex
Switch(config)#do show vlan brief

VLAN Name          Status    Ports
----- -----
1    default        active    Fa0/4, Fa0/5, Fa0/6, 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, Gig0/1, Gig0/2
10   ruang-guru    active    Fa0/1
20   ruang-meeting active    Fa0/2
1002 fddi-default  active
1003 token-ring-default active
1004 fddinet-default active
1005 trnet-default  active
Switch(config)#

```

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Top

4. hubungkan antar switchport dengan mode trunk pada switch0 dan switch1, lalu lakukan pengecekan

Switch0

Physical Config **CLI** Attributes

IOS Command Line Interface

```
fa0/16, fa0/17, fa0/18, fa0/19
Fa0/20, Fa0/21, Fa0/22, Fa0/23
Fa0/24, Gig0/1, Gig0/2

10 ruang-guru           active   Fa0/1
20 ruang-meeting        active   Fa0/2
1002 fddi-default       active
1003 token-ring-default active
1004 fddinet-default    active
1005 trnet-default      active
Switch(config-if)#ex
Switch(config)#int 0/3
^
* Invalid input detected at '^' marker.

Switch(config)#int fa0/3
Switch(config-if)#swi
Switch(config-if)#switchport mode
Switch(config-if)#switchport mode ac
Switch(config-if)#switchport mode trunk
Switch(config-if)#swi
Switch(config-if)#switchport tru
Switch(config-if)#switchport trunk all
Switch(config-if)#switchport trunk allowed vlan 10,20
Switch(config-if)#do show int trunk
Port      Mode          Encapsulation  Status      Native vlan
Fa0/3    on            802.1q         trunking    1

Port      Vlans allowed on trunk
Fa0/3    10,20

Port      Vlans allowed and active in management domain
Fa0/3    10,20

Port      Vlans in spanning tree forwarding state and not pruned
Fa0/3    20

Switch(config-if)#

```

Switch1

Physical Config CLI Attributes

IOS Command Line Interface

```
1     default           active   Fa0/4, Fa0/5, Fa0/6, 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, Gig0/1, Gig0/2
10    ruang-guru        active   Fa0/1
20    ruang-meeting      active   Fa0/2
1002  fddi-default      active
1003  token-ring-default active
1004  fddinet-default    active
1005  trnet-default      active
Switch(config-if)#exit
Switch(config)#int fa0/3
Switch(config-if)#sw
Switch(config-if)#switchport mo
Switch(config-if)#switchport mode tr
Switch(config-if)#switchport mode trunk
Switch(config-if)#swi
Switch(config-if)#switchport tr
Switch(config-if)#switchport trunk all
Switch(config-if)#switchport trunk allowed vlan 10,20
Switch(config-if)#do show int trunk
Port      Mode       Encapsulation  Status      Native vlan
Fa0/3    on         802.1q        trunking    1

Port      Vlans allowed on trunk
Fa0/3    10,20

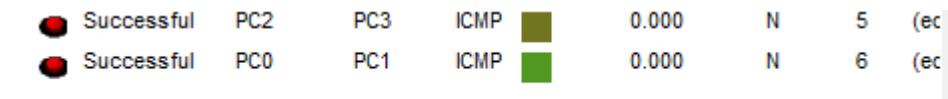
Port      Vlans allowed and active in management domain
Fa0/3    10,20

Port      Vlans in spanning tree forwarding state and not pruned
Fa0/3    20

Switch(config-if)#

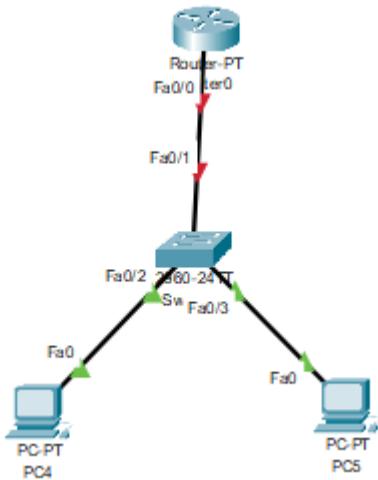
```

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C.Router on Stick

1.membuat topologi



2.Melakukan encapsulation pada router

Router1

Physical Config **CLI** Attributes

IOS Command Line Interface

```

Router(config-if)#LINK-S-CHANGED: Interface FastEthernet0/0, changed state to up
%LINKPROTO-S-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
ex
Router(config)#int fa0/0.10
Router(config-subif)#
%LINK-S-CHANGED: Interface FastEthernet0/0.10, changed state to up

%LINKPROTO-S-UPDOWN: Line protocol on Interface FastEthernet0/0.10, changed state to up
enca
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)#ip add
Router(config-subif)#ip address 192.168.10.1 255.255.255.0
Router(config-subif)#ex
Router(config)#int fa0/0.20
Router(config-subif)#
%LINK-S-CHANGED: Interface FastEthernet0/0.20, changed state to up

%LINKPROTO-S-UPDOWN: Line protocol on Interface FastEthernet0/0.20, changed state to up
en
Router(config-subif)#encapsulation dot1
Router(config-subif)#encapsulation dot1Q 20
Router(config-subif)#ip add
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#ex
Router(config)#do show ip int brief
Interface          IP-Address      OK? Method Status       Protocol
FastEthernet0/0     unassigned      YES unset  up           up
FastEthernet0/0.10   192.168.10.1  YES manual up          up
FastEthernet0/0.20   192.168.20.1  YES manual up          up
FastEthernet1/0     unassigned      YES unset administratively down down
Serial1/0           unassigned      YES unset administratively down down
Serial3/0           unassigned      YES unset administratively down down
FastEthernet4/0     unassigned      YES unset administratively down down
FastEthernet5/0     unassigned      YES unset administratively down down
Router(config)#
  
```

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Top

3. hubungkan pc ke vlan 10 dan 20

The terminal window shows the following configuration commands:

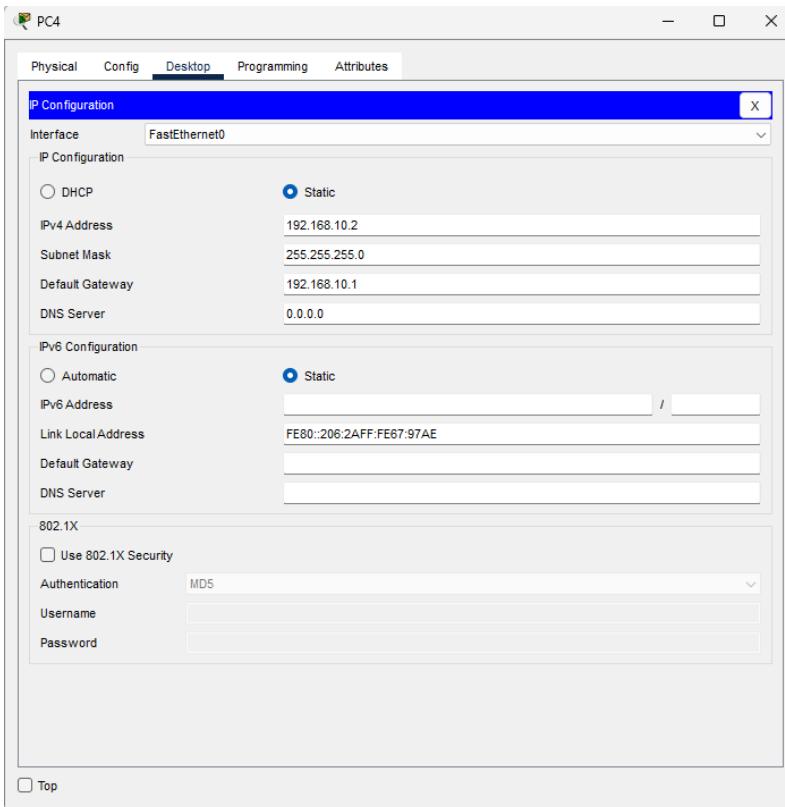
```
Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
sw
Switch(config-if)#switchport tr
Switch(config-if)#switchport trunk al
Switch(config-if)#switchport trunk allowed vla
Switch(config-if)#switchport trunk allowed vlan 10,20
Switch(config-if)#sex
Switch(config)#
Switch(config)#
Switch(config)#!int fal/1
%Invalid interface type and number
Switch(config)#!sw
Switch(config)#!int fal/1
%Invalid interface type and number
Switch(config)#!int fa0/2
Switch(config-if)#swi
Switch(config-if)#switchport mode ac
Switch(config-if)#switchport mode access
Switch(config-if)#sw
Switch(config-if)#switchport ac
Switch(config-if)#switchport access vla
Switch(config-if)#switchport access vlan 10
Switch(config-if)#sex
Switch(config)#!int fa0/3
Switch(config-if)#sw
Switch(config-if)#switchport mo
Switch(config-if)#switchport mode acc
Switch(config-if)#switchport mode access
Switch(config-if)#sw
Switch(config-if)#switchport ac
Switch(config-if)#switchport access vl
Switch(config-if)#switchport access vlan 20
Switch(config-if)#sex
Switch(config)#

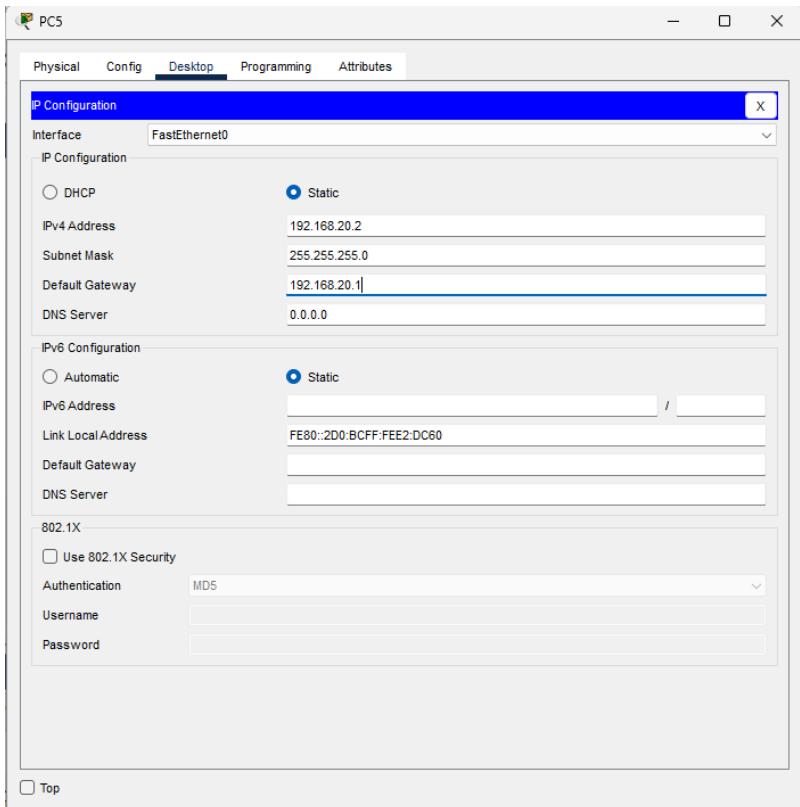
```

Buttons at the bottom: Copy, Paste.

Top

4. lalu tambahkan ip address ke pc dengan static dan berikan juga ip gateway





5. lakukan pengetesan ping pada antar pc untuk mengetahui apakah berhasil atau tidak

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.10.2: bytes=32 time<1ms TTL=127
Reply from 192.168.10.2: bytes=32 time<1ms TTL=127
Reply from 192.168.10.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

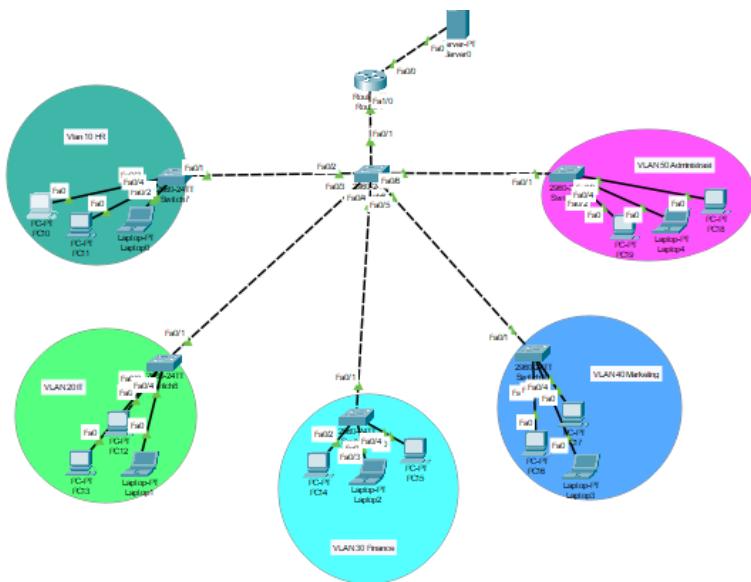
Reply from 192.168.20.2: bytes=32 time<1ms TTL=127
Reply from 192.168.20.2: bytes=32 time<1ms TTL=127
Reply from 192.168.20.2: bytes=32 time=1ms TTL=127
Reply from 192.168.20.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>|
```

D.Final Lab

1.buat topologi



2.tambahkan vlan 10,20,30,40,dan 50 ke masing-masing switch

Switch11			Switch6																																																														
Physical	Config	CLI	Physical	Config	CLI																																																												
<pre>IOS Command Line Interface Enter configuration commands, one per line. End with CNTL/Z. Switch(config)#vlan 10 Switch(config-vlan)#name HR Switch(config-vlan)#exit Switch(config)#vlan 20 Switch(config-vlan)#name IT Switch(config-vlan)#exit Switch(config)#vlan 30 Switch(config-vlan)#name finance Switch(config-vlan)#exit Switch(config)#vlan 40 Switch(config-vlan)#name marketing Switch(config-vlan)#exit Switch(config)#vlan 50 Switch(config-vlan)#name administrasi Switch(config-vlan)#exit Switch(config)#do show vlan brief</pre>			<pre>IOS Command Line Interface Enter configuration commands, one per line. End with CNTL/Z. Switch(config)#vlan 10 Switch(config-vlan)#name HR Switch(config-vlan)#exit Switch(config)#vlan 20 Switch(config-vlan)#name IT Switch(config-vlan)#exit Switch(config)#vlan 30 Switch(config-vlan)#name finance Switch(config-vlan)#exit Switch(config)#vlan 40 Switch(config-vlan)#name marketing Switch(config-vlan)#exit Switch(config)#vlan 50 Switch(config-vlan)#name administrasi Switch(config-vlan)#exit Switch(config)#do show vlan brief</pre>																																																														
<table border="1"> <thead> <tr> <th>VLAN Name</th> <th>Status</th> <th>Ports</th> </tr> </thead> <tbody> <tr> <td>1 default</td> <td>active</td> <td>Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, 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 Gig0/1, Gig0/2</td> </tr> <tr> <td>10 HR</td> <td>active</td> <td></td> </tr> <tr> <td>20 IT</td> <td>active</td> <td></td> </tr> <tr> <td>30 finance</td> <td>active</td> <td></td> </tr> <tr> <td>40 marketing</td> <td>active</td> <td></td> </tr> <tr> <td>50 administrasi</td> <td>active</td> <td></td> </tr> <tr> <td>1002 fddi-default</td> <td>active</td> <td></td> </tr> <tr> <td>1004 fddinet-default</td> <td>active</td> <td></td> </tr> <tr> <td>1005 trnet-default</td> <td>active</td> <td></td> </tr> </tbody> </table>			VLAN Name	Status	Ports	1 default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, 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 Gig0/1, Gig0/2	10 HR	active		20 IT	active		30 finance	active		40 marketing	active		50 administrasi	active		1002 fddi-default	active		1004 fddinet-default	active		1005 trnet-default	active		<table border="1"> <thead> <tr> <th>VLAN Name</th> <th>Status</th> <th>Ports</th> </tr> </thead> <tbody> <tr> <td>1 default</td> <td>active</td> <td>Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, 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 Gig0/1, Gig0/2</td> </tr> <tr> <td>10 HR</td> <td>active</td> <td></td> </tr> <tr> <td>20 IT</td> <td>active</td> <td></td> </tr> <tr> <td>30 finance</td> <td>active</td> <td></td> </tr> <tr> <td>40 marketing</td> <td>active</td> <td></td> </tr> <tr> <td>50 administrasi</td> <td>active</td> <td></td> </tr> <tr> <td>1002 fddi-default</td> <td>active</td> <td></td> </tr> <tr> <td>1004 fddinet-default</td> <td>active</td> <td></td> </tr> <tr> <td>1005 trnet-default</td> <td>active</td> <td></td> </tr> </tbody> </table>			VLAN Name	Status	Ports	1 default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, 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 Gig0/1, Gig0/2	10 HR	active		20 IT	active		30 finance	active		40 marketing	active		50 administrasi	active		1002 fddi-default	active		1004 fddinet-default	active		1005 trnet-default	active	
VLAN Name	Status	Ports																																																															
1 default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, 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 Gig0/1, Gig0/2																																																															
10 HR	active																																																																
20 IT	active																																																																
30 finance	active																																																																
40 marketing	active																																																																
50 administrasi	active																																																																
1002 fddi-default	active																																																																
1004 fddinet-default	active																																																																
1005 trnet-default	active																																																																
VLAN Name	Status	Ports																																																															
1 default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, 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 Gig0/1, Gig0/2																																																															
10 HR	active																																																																
20 IT	active																																																																
30 finance	active																																																																
40 marketing	active																																																																
50 administrasi	active																																																																
1002 fddi-default	active																																																																
1004 fddinet-default	active																																																																
1005 trnet-default	active																																																																
<input type="checkbox"/> Top			<input type="checkbox"/> Copy <input type="checkbox"/> Paste																																																														

Switch7

Physical Config CLI Attributes

IOS Command Line Interface

```
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name HR
Switch(config-vlan)#ex
Switch(config)#vlan 20
Switch(config-vlan)#name IT
Switch(config-vlan)#ex
Switch(config)#vlan 30
Switch(config-vlan)#name finance
Switch(config-vlan)#ex
Switch(config)#vlan 40
Switch(config-vlan)#name marketing
Switch(config-vlan)#ex
Switch(config)#vlan 50
Switch(config-vlan)#name administrasi
Switch(config-vlan)#ex
Switch(config)#do show vlan brief
```

VLAN Name	Status	Ports
1 default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, 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 Gig0/1, Gig0/2
10 HR	active	
20 IT	active	
30 finance	active	
40 marketing	active	
50 administrasi	active	
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 tnet-default	active	

Switch(config)#
 Top

Switch8

Physical Config CLI Attributes

IOS Command Line Interface

```
[1002 fddi-default active
1003 token-ring-default active
1004 fddinet-default active
1005 tnet-default active
Switch(config)#vlan 20
Switch(config-vlan)#name IT
Switch(config-vlan)#ex
Switch(config)#vlan 30
Switch(config-vlan)#name finance
Switch(config-vlan)#ex
Switch(config)#vlan 40
Switch(config-vlan)#name marketing
Switch(config-vlan)#ex
Switch(config)#vlan 50
Switch(config-vlan)#name administrasi
Switch(config-vlan)#ex
Switch(config)#do show vlan brief
```

VLAN Name	Status	Ports
1 default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, 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 Gig0/1, Gig0/2
10 HR	active	
20 IT	active	
30 finance	active	
40 marketing	active	
50 administrasi	active	
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 tnet-default	active	

Switch(config)#
 Top

Switch9

Physical Config CLI Attributes

IOS Command Line Interface

```
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name HR
Switch(config-vlan)#ex
Switch(config)#vlan 20
Switch(config-vlan)#name IT
Switch(config-vlan)#ex
Switch(config)#vlan 30
Switch(config-vlan)#name finance
Switch(config-vlan)#ex
Switch(config)#vlan 40
Switch(config-vlan)#name marketing
Switch(config-vlan)#ex
Switch(config)#vlan 50
Switch(config-vlan)#name administrasi
Switch(config-vlan)#ex
Switch(config)#do show vlan brief
```

VLAN Name	Status	Ports
1 default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, 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 Gig0/1, Gig0/2
10 HR	active	
20 IT	active	
30 finance	active	
40 marketing	active	
50 administrasi	active	
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 tnet-default	active	

Switch(config)#
 Top

Switch10

Physical Config CLI Attributes

IOS Command Line Interface

```
Switch(config)#vlan 10
Switch(config-vlan)#name HR
Switch(config-vlan)#ex
Switch(config)#vlan 20
Switch(config-vlan)#name IT
Switch(config-vlan)#ex
Switch(config)#vlan 30
Switch(config-vlan)#name finance
Switch(config-vlan)#ex
Switch(config)#vlan 40
Switch(config-vlan)#name marketing
Switch(config-vlan)#ex
Switch(config)#vlan 50
Switch(config-vlan)#name administrasi
Switch(config-vlan)#ex
Switch(config)#do show vlan brief
```

VLAN Name	Status	Ports
1 default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, 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 Gig0/1, Gig0/2
10 HR	active	
20 IT	active	
30 finance	active	
40 marketing	active	
50 administrasi	active	
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 tnet-default	active	

Switch(config)#
 Top

3. melakukan encapsulation ke setiap ip

Router4

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router(config-if)#
*LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
exit
Router(config)#int f0/0.10
Router(config-subif)#
*LINK-5-CHANGED: Interface FastEthernet1/0.10, changed state to up

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0.10, changed state to up
enable
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)#ip addr
Router(config-subif)#ip address 192.168.10.1 255.255.255.0
Router(config-subif)#exit
Router(config)#int f0/0.20
Router(config-subif)#
*LINK-5-CHANGED: Interface FastEthernet1/0.20, changed state to up

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0.20, changed state to up
enable
Router(config-subif)#encapsulation dot1Q 20
Router(config-subif)#ip ad
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#exit
Router(config)#do show ip int brief
Interface          IP-Address      OK? Method Status       Protocol
FastEthernet0/0    unassigned      YES unset administratively down down
FastEthernet1/0    unassigned      YES unset up          up
FastEthernet1/0.10  192.168.10.1  YES manual up          up
FastEthernet1/0.20  192.168.20.1  YES manual up          up
Serial1/0          unassigned      YES unset administratively down down
Serial3/0          unassigned      YES unset administratively down down
FastEthernet4/0    unassigned      YES unset administratively down down
FastEthernet5/0    unassigned      YES unset administratively down down
Router(config)#

```

4. melakukan konfigurasi ip

Router4

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router(config-if)#ex
Router(config)#ip dh
Router(config)#ip dhcp po
Router(config)#ip dhcp pool 2
Router(dhcp-config)#net
Router(dhcp-config)#network 192.168.20.0 255.255.255.0
Router(dhcp-config)#def
Router(dhcp-config)#default-router 192.168.20.1
Router(dhcp-config)#x
Router(config)#ip dh
Router(config)#ip dhcp po
Router(config)#ip dhcp pool 3
Router(dhcp-config)#net
Router(dhcp-config)#network 192.168.20.0 255.255.255.0
Router(dhcp-config)#def
Router(dhcp-config)#net
Router(dhcp-config)#network 192.168.30.0 255.255.255.0
Router(dhcp-config)#def
Router(dhcp-config)#default-router 192.168.30.1
Router(dhcp-config)#x
Router(config)#ip dh
Router(config)#ip dhcp po
Router(config)#ip dhcp pool 4
Router(dhcp-config)#net
Router(dhcp-config)#network 192.168.40.0 255.255.255.0
Router(dhcp-config)#def
Router(dhcp-config)#default-router 192.168.40.1
Router(dhcp-config)#x
Router(config)#ip dh
Router(config)#ip dhcp po
Router(config)#ip dhcp pool 5
Router(dhcp-config)#net
Router(dhcp-config)#network 192.168.50.0 255.255.255.0
Router(dhcp-config)#def
Router(dhcp-config)#default-router 192.168.50.1
Router(dhcp-config)#x
Router(config)#

```

5. connectkan ip ke setiap pc menggunakan dhcp

PC19

IP Configuration	
Interface	FastEthernet0
IP Configuration	
<input checked="" type="radio"/> DHCP	<input type="radio"/> Static
IPv4 Address	192.168.50.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.50.1
DNS Server	0.0.0.0
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	FE80::20A:F3FF:FE1:B38C
Link Local Address	FE80::20A:F3FF:FE1:B38C
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MDS
Username	
Password	

Top

PC10

IP Configuration	
Interface	FastEthernet0
IP Configuration	
<input checked="" type="radio"/> DHCP	<input type="radio"/> Static
IPv4 Address	192.168.10.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.10.1
DNS Server	0.0.0.0
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	FE80::260:2FFF:FE04:818A
Link Local Address	FE80::260:2FFF:FE04:818A
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MDS
Username	
Password	

Top

Laptop1

IP Configuration	
Interface	FastEthernet0
IP Configuration	
<input checked="" type="radio"/> DHCP	<input type="radio"/> Static
DHCP request successful.	
IPv4 Address	192.168.20.4
Subnet Mask	255.255.255.0
Default Gateway	192.168.20.1
DNS Server	0.0.0.0
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	FE80::2D0:BCFF:FE1:9057
Link Local Address	FE80::2D0:BCFF:FE1:9057
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MDS
Username	
Password	

Top

PC14

IP Configuration	
Interface	FastEthernet0
IP Configuration	
<input checked="" type="radio"/> DHCP	<input type="radio"/> Static
DHCP request successful.	
IPv4 Address	192.168.30.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.30.1
DNS Server	0.0.0.0
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	FE80::290:CFF:FE4B:9BD3
Link Local Address	FE80::290:CFF:FE4B:9BD3
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MDS
Username	
Password	

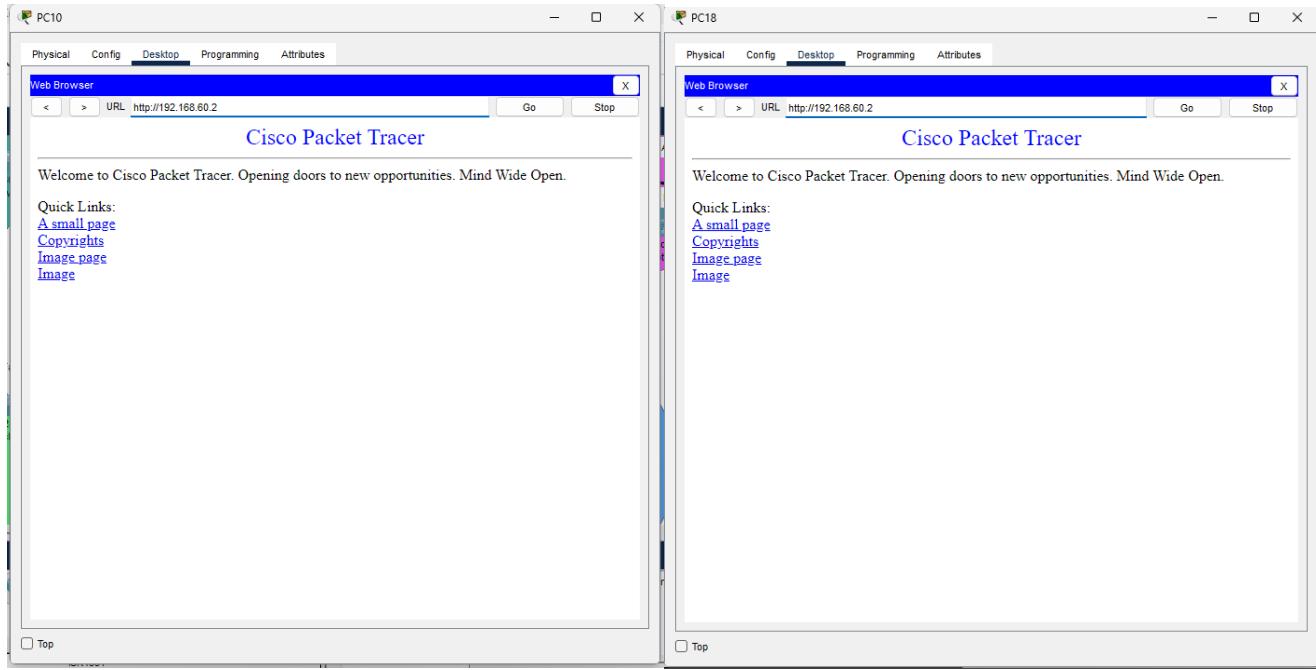
Top

PC16

IP Configuration	
Interface	FastEthernet0
IP Configuration	
<input checked="" type="radio"/> DHCP	<input type="radio"/> Static
DHCP request successful.	
IPv4 Address	192.168.40.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.40.1
DNS Server	0.0.0.0
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	FE80::2E0:F7FF:FE85:DC70
Link Local Address	FE80::2E0:F7FF:FE85:DC70
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MDS
Username	
Password	

Top

6.mencoba website yang tersedia pada server ke pc di vlan 10 dan vlan 50



DAFTAR PUSTAKA

VLAN: Pengertian, Fungsi, Cara Kerja, dan Jenis-Jenisnya (Alvana Noor Fariza)-<https://www.sekawanmedia.co.id/blog/pengertian-vlan/>