

PRE-UAS
Mata Kuliah Konsep Jaringan

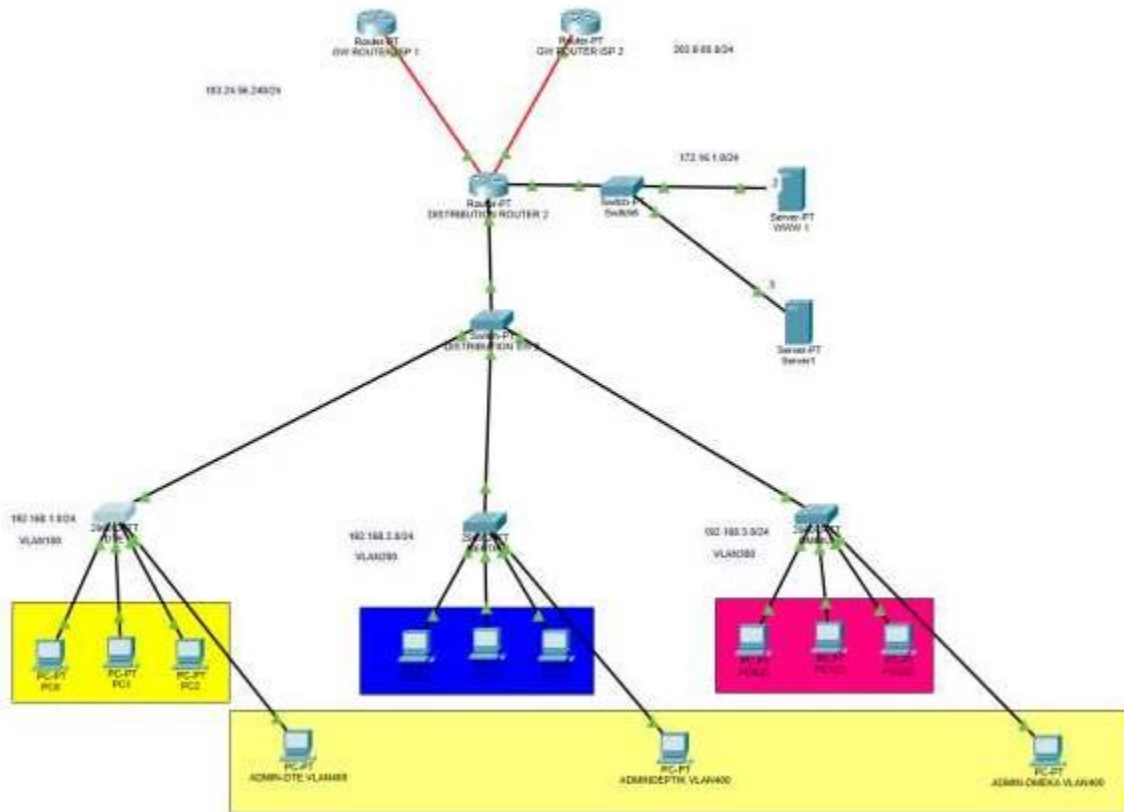


Dosen
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Model tersebut memiliki topologi sebagai berikut:



DTE(VLAN100):

IP: 192.168.1.2

DNS: 172.16.1.2

IP: 192.168.1.3

Gateway: 192.168.1.1

DNS: 172.16.1.2

PC2:

IP: 192.168.1.4

Gateway: 192.168.1.1

DNS: 172.16.1.2

DEPTIK(VLAN200):

- PC0:
 - IP: 192.168.2.2
 - Gateway: 192.168.2.1
 - DNS: 172.16.1.2
- PC1:
 - IP: 192.168.2.3
 - Gateway: 192.168.2.1
 - DNS: 172.16.1.2
- PC2:
 - IP: 192.168.2.4
 - Gateway: 192.168.2.1
 - DNS: 172.16.1.2

DMEKA(VLAN300):

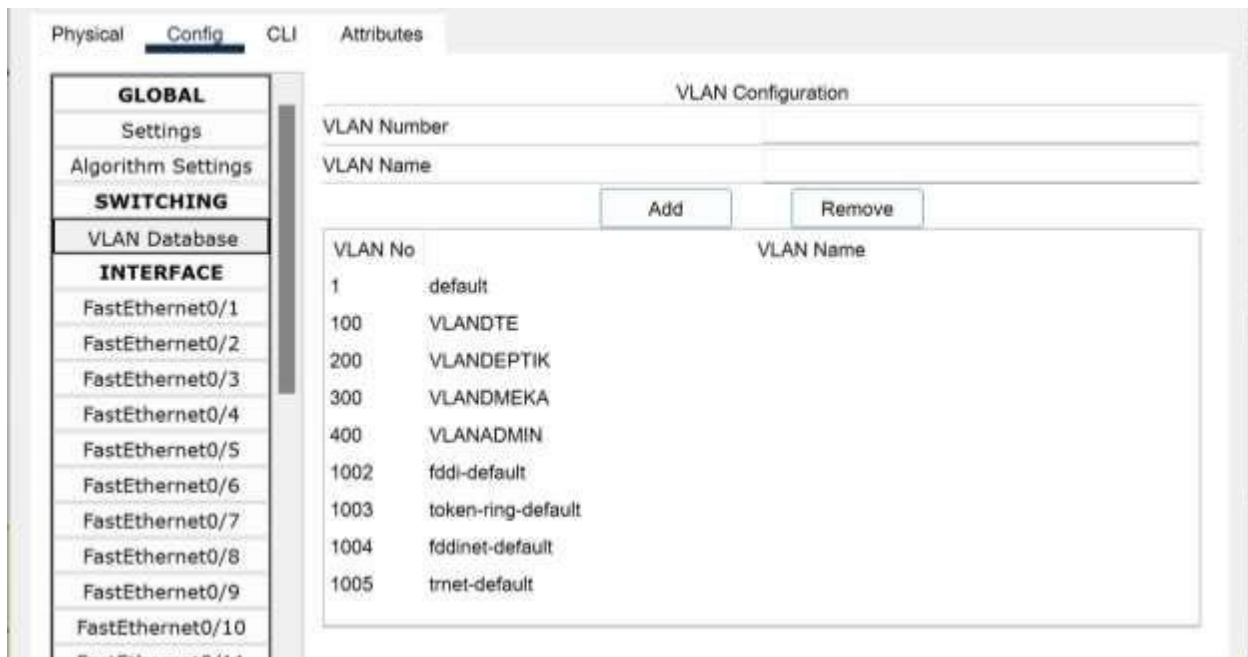
- PC0:
 - IP: 192.168.3.2
 - Gateway: 192.168.3.1
 - DNS: 172.16.1.2
- PC1:
 - IP: 192.168.3.3
 - Gateway: 192.168.3.1
 - DNS: 172.16.1.2
- PC2:
 - IP: 192.168.3.4
 - Gateway: 192.168.3.1
 - DNS: 172.16.1.2

ADMIN(VLAN400):

- PC0:
 - IP: 192.168.4.2
 - Gateway: 192.168.4.1
 - DNS: 172.16.1.2
- PC1:

- IP: 192.168.4.3
- Gateway: 192.168.4.1
- DNS: 172.16.1.2
- PC2:
 - IP: 192.168.4.4
 - Gateway: 192.168.4.1
 - DNS: 172.16.1.2

Setelah itu, kita konfigurasi setiap switch dengan menambahkan semua VLAN yang ada pada VLAN database masing-masing switch dan juga mengkonfigurasi portnya. Switch yang dikonfigurasi VLAN database-nya adalah semua switch termasuk DISTRIBUTION SW. VLAN database yang sudah lengkap akan nampak seperti gambar di bawah.



Gambar: Penambahan setiap VLAN pada VLAN database masing-masing router.

Untuk konfigurasi setiap port dari switch yang terhubung dengan PC, atur sehingga bertipe Access dan VLAN yang digunakan sesuai dengan VLAN yang terhubung dengan PC tersebut, jadi pada PC DTE VLAN diatur menjadi 100, pada DEPTIK VLAN 200, pada DMEKA VLAN 300, dan pada PC ADMIN diatur menjadi 400(dari departemen manapun).

GLOBAL Settings Algorithm Settings SWITCHING VLAN Database INTERFACE FastEthernet0/1 FastEthernet0/2	FastEthernet0/1	
	Port Status	<input checked="" type="checkbox"/> On
	Bandwidth	<input type="radio"/> 100 Mbps <input type="radio"/> 10 Mbps <input checked="" type="checkbox"/> Auto
	Duplex	<input type="radio"/> Half Duplex <input checked="" type="radio"/> Full Duplex <input checked="" type="checkbox"/> Auto
	Access	VLAN 100
	Tx Ring Limit	10

GLOBAL Settings Algorithm Settings SWITCHING VLAN Database INTERFACE FastEthernet0/1 FastEthernet0/2	FastEthernet0/2	
	Port Status	<input checked="" type="checkbox"/> On
	Bandwidth	<input type="radio"/> 100 Mbps <input type="radio"/> 10 Mbps <input checked="" type="checkbox"/> Auto
	Duplex	<input type="radio"/> Half Duplex <input checked="" type="radio"/> Full Duplex <input checked="" type="checkbox"/> Auto
	Access	VLAN 100
	Tx Ring Limit	10

GLOBAL Settings Algorithm Settings SWITCHING VLAN Database INTERFACE FastEthernet0/1 FastEthernet0/2 FastEthernet0/3	FastEthernet0/3	
	Port Status	<input checked="" type="checkbox"/> On
	Bandwidth	<input type="radio"/> 100 Mbps <input type="radio"/> 10 Mbps <input checked="" type="checkbox"/> Auto
	Duplex	<input type="radio"/> Half Duplex <input checked="" type="radio"/> Full Duplex <input checked="" type="checkbox"/> Auto
	Access	VLAN 100
	Tx Ring Limit	10

GLOBAL Settings Algorithm Settings SWITCHING VLAN Database INTERFACE FastEthernet0/1 FastEthernet0/2 FastEthernet0/3 FastEthernet0/4	FastEthernet0/4	
	Port Status	<input checked="" type="checkbox"/> On
	Bandwidth	<input type="radio"/> 100 Mbps <input type="radio"/> 10 Mbps <input checked="" type="checkbox"/> Auto
	Duplex	<input type="radio"/> Half Duplex <input checked="" type="radio"/> Full Duplex <input checked="" type="checkbox"/> Auto
	Access	VLAN 400
	Tx Ring Limit	10

DEPTIK

GLOBAL Settings Algorithm Settings SWITCHING VLAN Database INTERFACE FastEthernet0/1 FastEthernet0/2	FastEthernet0/1	
	Port Status	<input checked="" type="checkbox"/> On
	Bandwidth	<input type="radio"/> 100 Mbps <input type="radio"/> 10 Mbps <input checked="" type="checkbox"/> Auto
	Duplex	<input type="radio"/> Half Duplex <input checked="" type="radio"/> Full Duplex <input checked="" type="checkbox"/> Auto
	Access	VLAN 200
	Tx Ring Limit	10

<div><div>GLOBAL</div><div>Settings</div><div>Algorithm Settings</div><div>SWITCHING</div><div>VLAN Database</div><div>INTERFACE</div><div>FastEthernet0/1</div><div>FastEthernet0/2</div><div>FastEthernet0/3</div></div>	<div>FastEthernet0/2</div> <div><div>Port Status</div><div>Bandwidth</div><div>Duplex</div></div> <div><div>Access</div><div>VLAN</div><div>200</div></div> <div><div>Tx Ring Limit</div><div>10</div></div>
<div><div>GLOBAL</div><div>Settings</div><div>Algorithm Settings</div><div>SWITCHING</div><div>VLAN Database</div><div>INTERFACE</div><div>FastEthernet0/1</div><div>FastEthernet0/2</div><div>FastEthernet0/3</div></div>	<div>FastEthernet0/3</div> <div><div>Port Status</div><div>Bandwidth</div><div>Duplex</div></div> <div><div>Access</div><div>VLAN</div><div>200</div></div> <div><div>Tx Ring Limit</div><div>10</div></div>
<div><div>GLOBAL</div><div>Settings</div><div>Algorithm Settings</div><div>SWITCHING</div><div>VLAN Database</div><div>INTERFACE</div><div>FastEthernet0/1</div><div>FastEthernet0/2</div><div>FastEthernet0/3</div><div>FastEthernet0/4</div></div>	<div>FastEthernet0/4</div> <div><div>Port Status</div><div>Bandwidth</div><div>Duplex</div></div> <div><div>Access</div><div>VLAN</div><div>400</div></div> <div><div>Tx Ring Limit</div><div>10</div></div>

DMEKA

<div><div>GLOBAL</div><div>Settings</div><div>Algorithm Settings</div><div>SWITCHING</div><div>VLAN Database</div><div>INTERFACE</div><div>FastEthernet0/1</div><div>FastEthernet0/2</div><div>FastEthernet0/3</div></div>	<div>FastEthernet0/2</div> <div><div>Port Status</div><div>Bandwidth</div><div>Duplex</div></div> <div><div>Access</div><div>VLAN</div><div>300</div></div> <div><div>Tx Ring Limit</div><div>10</div></div>
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GLOBAL	FastEthernet0/3	
Settings	Port Status	<input checked="" type="checkbox"/> On
Algorithm Settings	Bandwidth	<input type="radio"/> 100 Mbps <input type="radio"/> 10 Mbps <input checked="" type="checkbox"/> Auto
SWITCHING	Duplex	<input type="radio"/> Half Duplex <input checked="" type="radio"/> Full Duplex <input checked="" type="checkbox"/> Auto
VLAN Database	Access	VLAN 300
INTERFACE	Tx Ring Limit	10
FastEthernet0/1		
FastEthernet0/2		
FastEthernet0/3		

INTERFACE	FastEthernet0/4	
FastEthernet0/1	Port Status	<input checked="" type="checkbox"/> On
FastEthernet0/2	Bandwidth	<input type="radio"/> 100 Mbps <input type="radio"/> 10 Mbps <input checked="" type="checkbox"/> Auto
FastEthernet0/3	Duplex	<input type="radio"/> Half Duplex <input checked="" type="radio"/> Full Duplex <input checked="" type="checkbox"/> Auto
FastEthernet0/4	Access	VLAN 300
FastEthernet0/5	Tx Ring Limit	10
FastEthernet0/6		
FastEthernet0/7		

INTERFACE	FastEthernet0/5	
FastEthernet0/1	Port Status	<input checked="" type="checkbox"/> On
FastEthernet0/2	Bandwidth	<input type="radio"/> 100 Mbps <input type="radio"/> 10 Mbps <input checked="" type="checkbox"/> Auto
FastEthernet0/3	Duplex	<input type="radio"/> Half Duplex <input checked="" type="radio"/> Full Duplex <input checked="" type="checkbox"/> Auto
FastEthernet0/4	Access	VLAN 400
FastEthernet0/5	Tx Ring Limit	10
FastEthernet0/6		
FastEthernet0/7		
FastEthernet0/8		

Setelah mengkonfigurasi setiap port yang terhubung dengan PC, kita atur juga port switch yang terhubung dengan switch DISTRIBUTION SW menjadi Trunk seperti di bawah.

DTE

FastEthernet0/10	GigabitEthernet0/2	
FastEthernet0/11	Port Status	<input checked="" type="checkbox"/> On
FastEthernet0/12	Bandwidth	<input checked="" type="radio"/> 1000 Mbps <input type="radio"/> 100 Mbps <input type="radio"/> 10 Mbps <input checked="" type="checkbox"/> Auto
FastEthernet0/13	Duplex	<input type="radio"/> Half Duplex <input checked="" type="radio"/> Full Duplex <input checked="" type="checkbox"/> Auto
FastEthernet0/14	Trunk	VLAN 1-1005
FastEthernet0/15	Tx Ring Limit	10
FastEthernet0/16		
FastEthernet0/17		

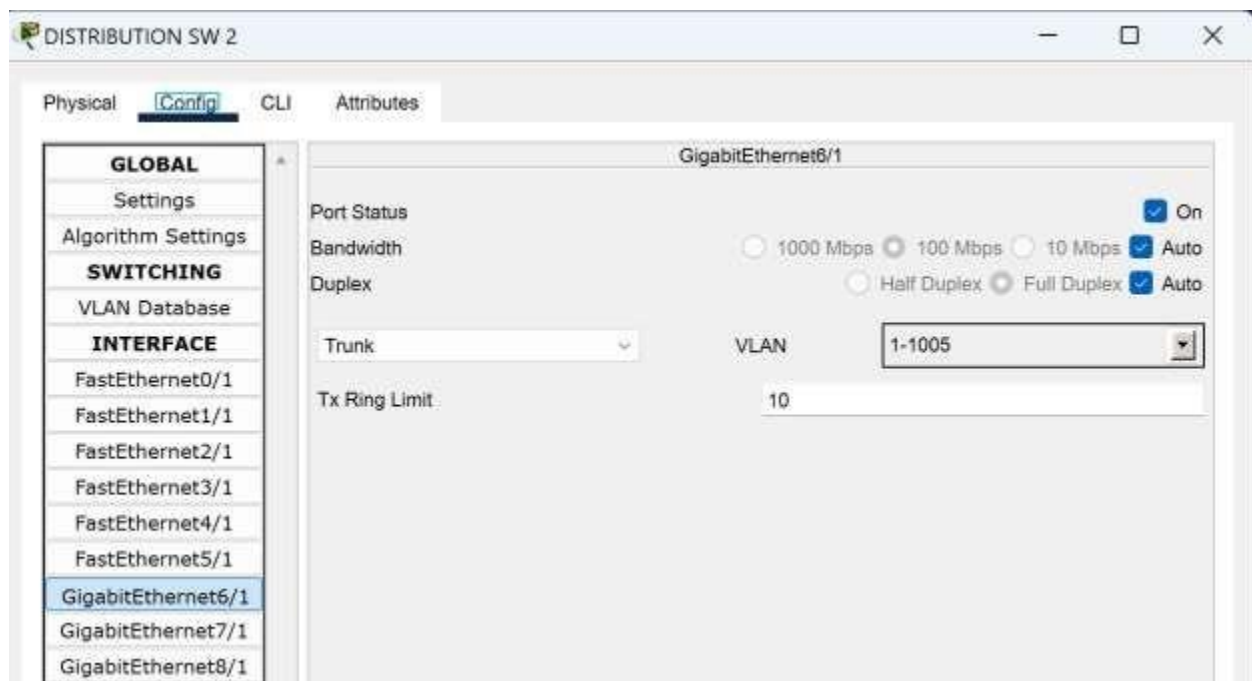
DEPTIK

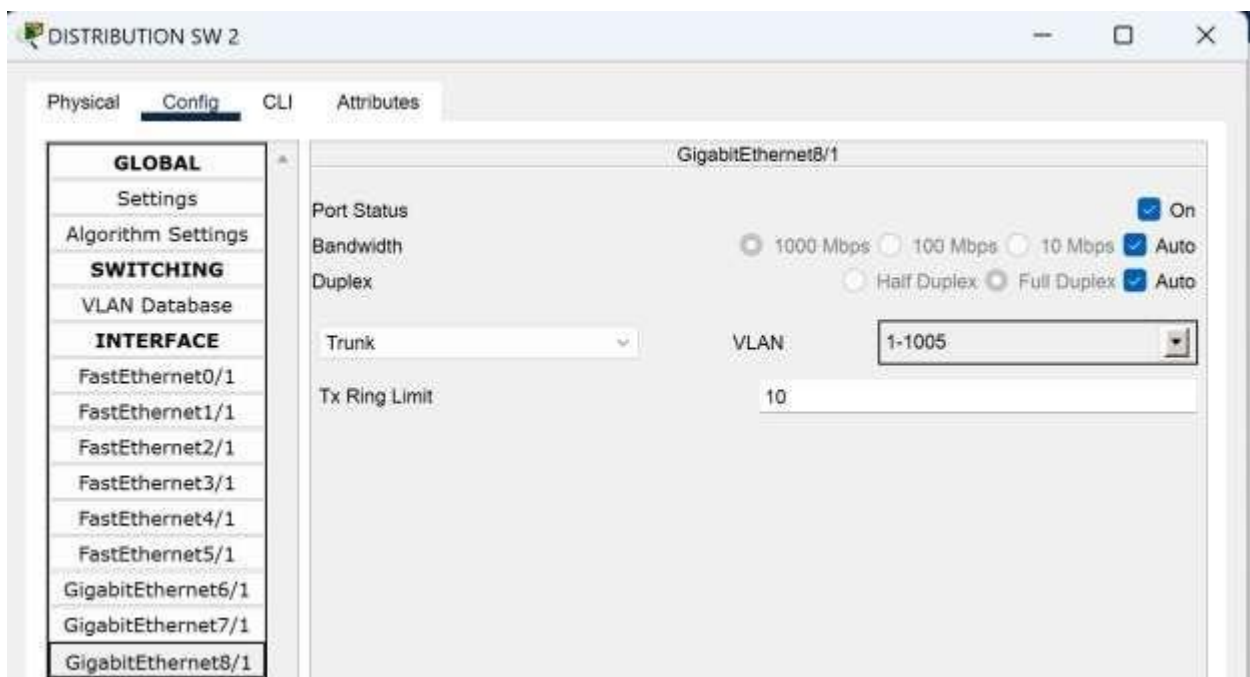
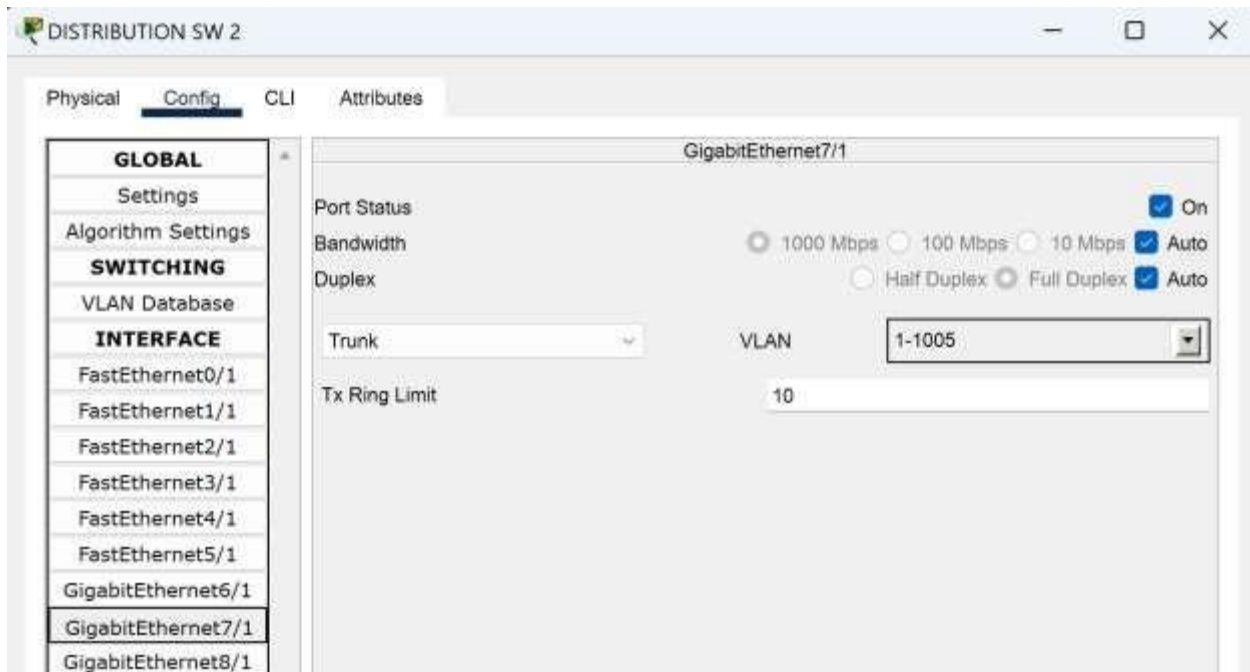


DMEKA

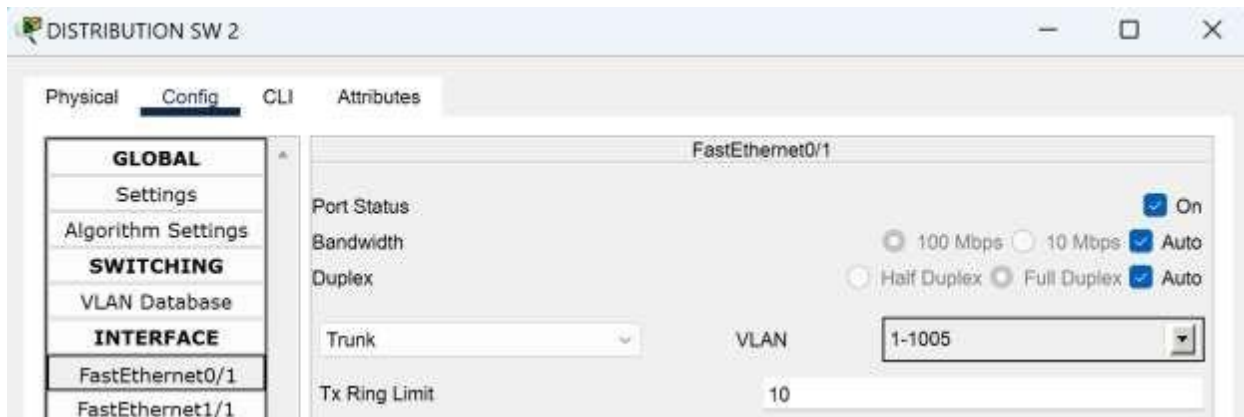


Kemudian konfigurasi pula port-port pada switch DISTRIBUTION SW, dengan mengatur semua port yang terhubung dengan switch lain menjadi Trunk.





Lakukan hal yang sama pada port yang terhubung dengan router DISTRIBUTION ROUTER 2.



Gambar: Konfigurasi port switch DISTRIBUION SW yang terhubung dengan DISTRIBUION ROUTER 2

Melalui CLI pada router DISTRIBUION ROUTER 2, kita akan melakukan konfigurasi dan membuat VLAN 100, 200, 300, dan 400 beserta mengatur alamat IP dari setiap gatewaynya seperti pada di bawah.

Memasuki terminal dan menyalakan interface FastEthernet0/0

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastethernet0/0
Router(config-if)#no shutdown
```

Membuat VLAN 100

```
Router(config-if)#interface fastethernet0/0.100
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.100, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.100, changed state to up

Router(config-subif)#encapsulation dot1q 100
Router(config-subif)#ip address 192.168.1.1 255.255.255.0
Router(config-subif)#exit
```

Membuat VLAN 200

```
Router(config)#interface fastethernet0/0.200
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.200, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.200, changed state to up

Router(config-subif)#encapsulation dot1q 200
Router(config-subif)#ip address 192.168.2.1 255.255.255.0
Router(config-subif)#exit
```

Membuat VLAN 300

```
Router(config)#interface fastethernet0/0.300
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.300, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.300, changed state to up

Router(config-subif)#encapsulation dot1q 300
Router(config-subif)#ip address 192.168.3.1 255.255.255.0
Router(config-subif)#exit
```

Membuat VLAN 400

```
Router(config)#interface fastethernet0/0.400
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.400, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.400, changed state to up

Router(config-subif)#encapsulation dot1q 400
Router(config-subif)#ip address 192.168.4.1 255.255.255.0
Router(config-subif)#exit
```

Keluar dan Menyimpan

```
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#
```

Setelah melakukan konfigurasi seperti diatas dengan benar, maka anda sudah bisa melakukan ping antar PC yang ada pada model tersebut.

```
C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.2: bytes=32 time<1ms TTL=127
Reply from 192.168.2.2: bytes=32 time=13ms TTL=127
Reply from 192.168.2.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 13ms, Average = 4ms
```

```
C:\>ping 192.168.3.2

Pinging 192.168.3.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.3.2: bytes=32 time<1ms TTL=127
Reply from 192.168.3.2: bytes=32 time<1ms TTL=127
Reply from 192.168.3.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.3.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

```
C:\>ping 192.168.4.2

Pinging 192.168.4.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.4.2: bytes=32 time=1ms TTL=127
Reply from 192.168.4.2: bytes=32 time=18ms TTL=127
Reply from 192.168.4.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.4.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 18ms, Average = 6ms
```

Gambar: Ping antar PC dari VLAN yang berbeda dapat dilakukan setelah semua konfigurasi di atas telah dilakukan dengan benar

Setelah itu, lakukan konfigurasi pada router DISTRIBUTION ROUTER 2, GW ROUTER ISP 1, serta GW ROUTER ISP 2 sehingga dapat dilakukan komunikasi antar router dan juga ke server.

DISTRIBUTION ROUTER 2:

- FastEthernet4/0:
IP: 202.9.85.1
- FastEthernet5/0:
IP: 103.24.56.240
- GigabitEthernet6/0:
IP: 172.16.1.1

GW ROUTER ISP 1:

- FastEthernet5/0:
IP: 103.24.56.240

GW ROUTER ISP 2:

- FastEthernet4/0:
IP: 202.9.85.1

Setelah konfigurasi selesai, maka anda dapat melakukan ping dari PC menuju router GW ROUTER ISP 1 dan 2.

```
C:\>ping 103.24.56.240

Pinging 103.24.56.240 with 32 bytes of data:

Reply from 103.24.56.240: bytes=32 time<1ms TTL=255
Reply from 103.24.56.240: bytes=32 time=9ms TTL=255
Reply from 103.24.56.240: bytes=32 time<1ms TTL=255
Reply from 103.24.56.240: bytes=32 time<1ms TTL=255

Ping statistics for 103.24.56.240:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 9ms, Average = 2ms

C:\>ping 202.9.85.1

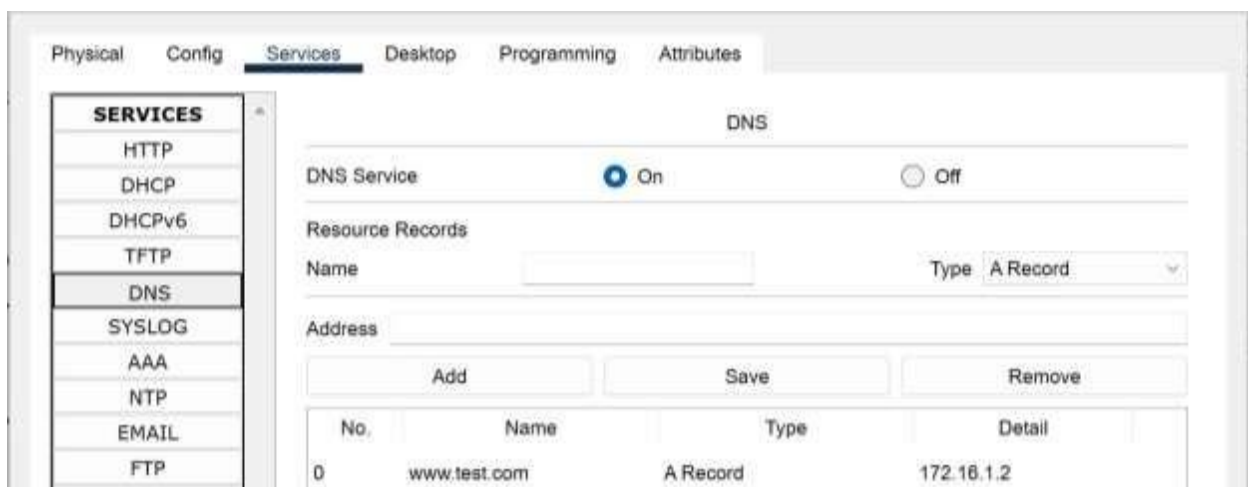
Pinging 202.9.85.1 with 32 bytes of data:

Reply from 202.9.85.1: bytes=32 time<1ms TTL=255
Reply from 202.9.85.1: bytes=32 time<1ms TTL=255
Reply from 202.9.85.1: bytes=32 time<1ms TTL=255
Reply from 202.9.85.1: bytes=32 time<1ms TTL=255

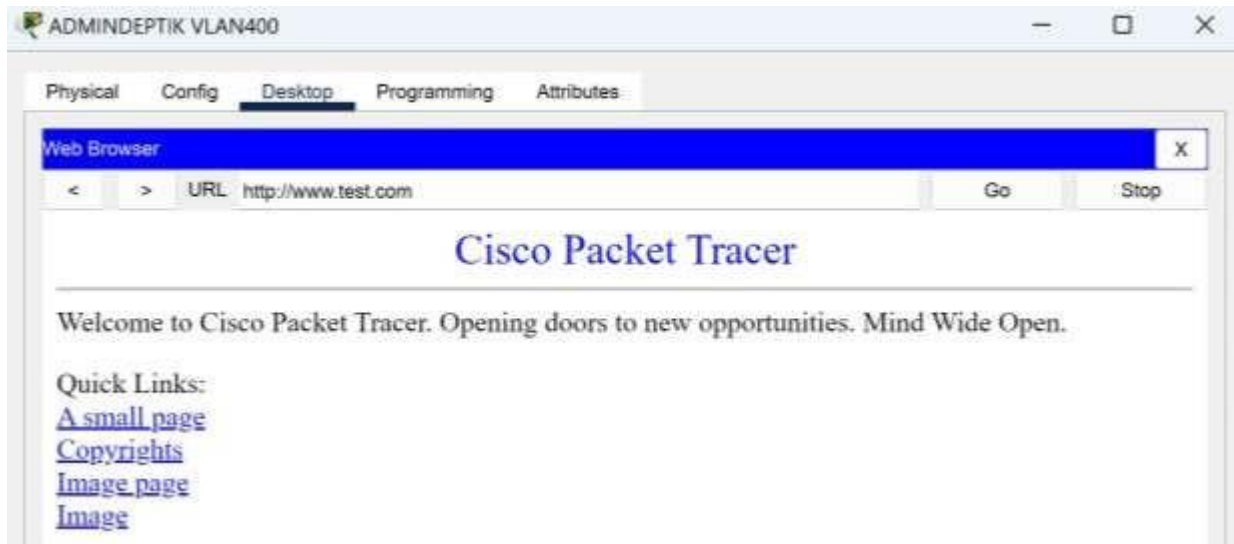
Ping statistics for 202.9.85.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Gambar: Hasil Ping dari PC ke kedua router GW ROUTER

Setelah mengkonfigurasi router sehingga terhubung ke router dan server, konfigurasi DNS pada Server-PT WWW 1 pada bagian Services → DNS. Pastikan DNS Service dalam kondisi menyala, kemudian tambahkan resource record baru, beri nama, dan kemudian beri alamat IP yang sesuai dengan yang telah tertulis pada model dan juga yang tertulis pada DNS dari setiap PC yang telah dikonfigurasi sebelumnya.



Setelah mengkonfigurasi semuanya dengan benar dari awal hingga akhir, maka melalui web browser setiap PC dapat diakses web dengan nama yang sebelumnya sudah dimasukkan sebagai nama dari DNS yang dibuat. Web browser dapat diakses pada setiap PC pada Desktop → Web Browser. Jika berhasil, maka akan nampak seperti di bawah.



File pkt dapat diakses melalui link berikut:

<https://drive.google.com/file/d/1RFRCxSY0w-g1xWb0QMJajIUdIPjK8Dv3/view?usp=sharing>