Praktikum Internet dan Aplikasinya

Tugas 7: Routing Statik

Oleh :

Nama : Johanes Yogtan Wicaksono Raharja

NIM : 215314105

PROGRAM STUDI INFORMATIKA

FAKULTAS SAINS DAN TEKNOLOGI

UNIVERSITAS SANATA DHARMA

YOGYAKARTA

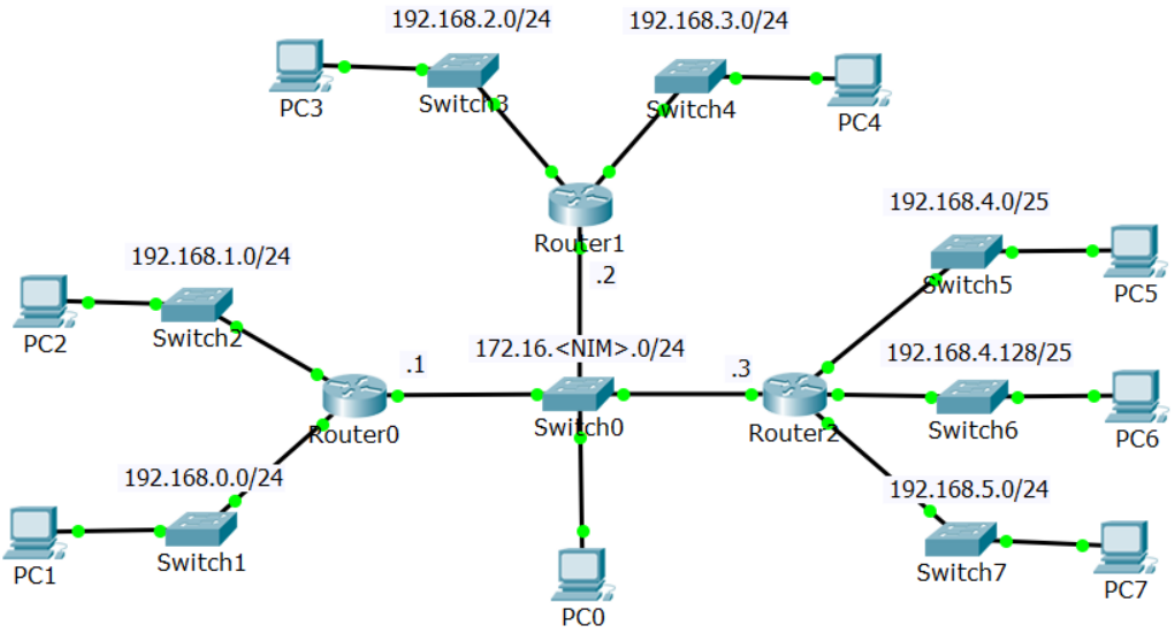
2022

Tujuan

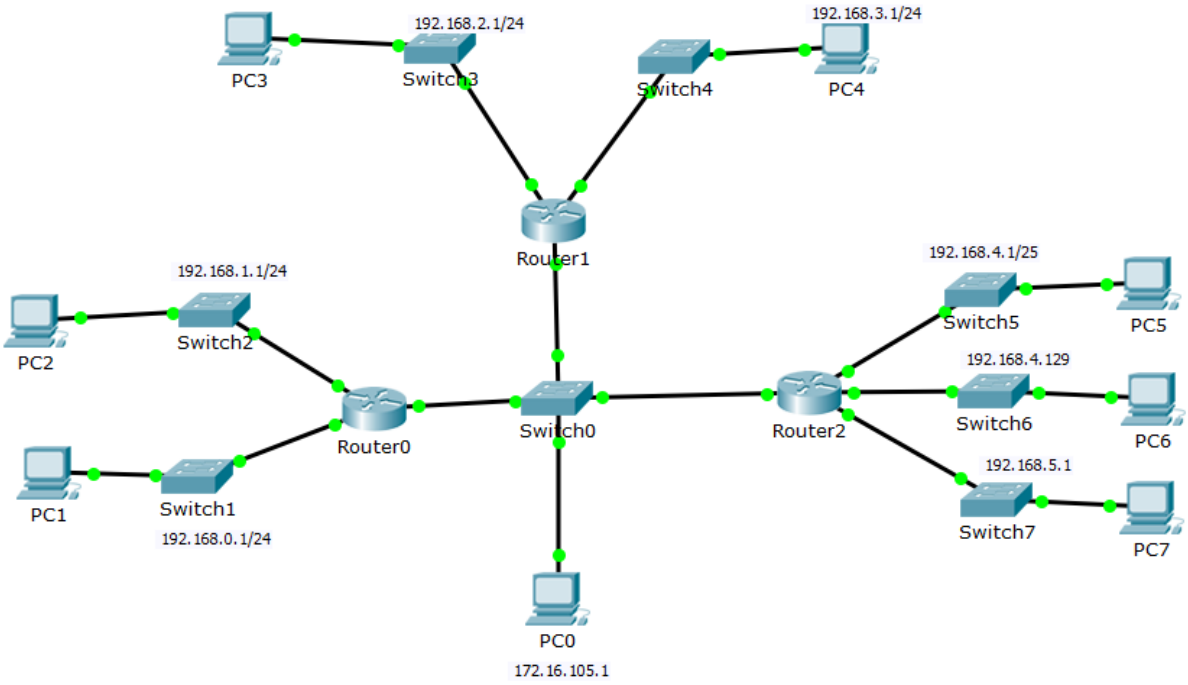
Mahasiswa dapat mengetahui cara kerja packet forwarding dan tabel routing serta men-setup statik routing untuk topologi sederhana

TUGAS

1. Buat topologi seperti dibawah ini
2. Pilih Router Tipe Generik ROUTER-PT-EMPTY (yang paling kanan). Matikan dulu Router, tambahkan 5 modul Ethernet PT-ROUTER-NM-1CFE (No. 3 dari atas).
3. Buat / lengkapi rancangan IP (tuliskan label pada topologi), kemudian implementasikan. Jangan lupa memasang default gateway pada masing-masing PC.
4. Pastikan dari tiap-tiap PC bisa terkoneksi dengan Router (ping dari PC ke Router)
5. Rancangan Tabel routing dan tuangkan dalam bentuk tabel seperti dibawah.
6. Implementasikan Routing Static pada masing-masing router berdasarkan tabel yang anda buat
7. Pastikan antar PC di seluruh topologi terkoneksi dengan perintah ping



A. Screenshot Topologi (lengkapi dengan ip setiap devicenya)



B. Screenshot Konfigurasi IP Address

- **PC0**

IP Address	172.16.105.1
Subnet Mask	255.255.255.0
Default Gateway	172.16.105.254
DNS Server	

- **PC1**

IP Address	192.168.0.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.254
DNS Server	

- **PC2**

IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.254
DNS Server	

- **PC3**

IP Address	192.168.2.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.2.254
DNS Server	

- **PC4**

IP Address	192.168.3.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.3.254
DNS Server	

- **PC5**

IP Address	192.168.4.1
Subnet Mask	255.255.255.128
Default Gateway	192.168.4.126
DNS Server	

- **PC6**

IP Address	192.168.4.129
Subnet Mask	255.255.255.128
Default Gateway	192.168.4.254
DNS Server	

- **PC7**

IP Address	192.168.5.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.5.254
DNS Server	

C. Tabel Routing Static

Device	Network / Masking	Next Hop
Router 0	192.168.2.0/255.255.255.0	172.16.105.253
	192.168.3.0/255.255.255.0	172.16.105.253
	192.168.4.0/255.255.255.128	172.16.105.254
	192.168.4.128/255.255.255.128	172.16.105.254
	192.168.5.0/255.255.255.0	172.16.105.254
Router 1	192.168.0.0/255.255.255.0	172.16.105.252
	192.168.1.0/255.255.255.0	172.16.105.252
	192.168.4.0/255.255.255.128	172.16.105.254
	192.168.4.128/255.255.255.128	172.16.105.254
	192.168.5.0/255.255.255.0	172.16.105.254

Router 2	192.168.0.0/255.255.255.0	172.16.105.252
	192.168.1.0/255.255.255.0	172.16.105.252
	192.168.2.0/255.255.255.0	172.16.105.253
	192.168.3.0/255.255.255.0	172.16.105.253

D. Screenshot konfigurasi Static Routing

- **ROUTER 0**

Network Address
192.168.2.0/24 via 172.16.105.253
192.168.3.0/24 via 172.16.105.253
192.168.4.0/25 via 172.16.105.254
192.168.4.128/25 via 172.16.105.254
192.168.5.0/24 via 172.16.105.254

- **ROUTER 1**

Network Address
192.168.0.0/24 via 172.16.105.252
192.168.1.0/24 via 172.16.105.252
192.168.4.0/25 via 172.16.105.254
192.168.4.128/25 via 172.16.105.254
192.168.5.0/24 via 172.16.105.254

- **ROUTER 2**

Network Address
192.168.0.0/24 via 172.16.105.252
192.168.1.0/24 via 172.16.105.252
192.168.2.0/24 via 172.16.105.253
192.168.3.0/24 via 172.16.105.253

E. Screenshot bukti ping bahwa semua pc saling terhubung

- **PC0 KE PC1**

```
PC>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time=0ms TTL=127
Reply from 192.168.0.1: bytes=32 time=0ms TTL=127
Reply from 192.168.0.1: bytes=32 time=1ms TTL=127
Reply from 192.168.0.1: bytes=32 time=0ms TTL=127

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

- **PC0 KE PC2**

```
PC>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=32ms TTL=127
Reply from 192.168.1.1: bytes=32 time=2ms TTL=127
Reply from 192.168.1.1: bytes=32 time=6ms TTL=127
Reply from 192.168.1.1: bytes=32 time=0ms TTL=127

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 32ms, Average = 10ms
```

- **PC0 KE PC3**

```
PC>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time=1ms TTL=127
Reply from 192.168.2.1: bytes=32 time=1ms TTL=127
Reply from 192.168.2.1: bytes=32 time=2ms TTL=127
Reply from 192.168.2.1: bytes=32 time=2ms TTL=127

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 2ms, Average = 1ms
```

- **PC0 KE PC4**

```
PC>ping 192.168.3.1

Pinging 192.168.3.1 with 32 bytes of data:

Reply from 192.168.3.1: bytes=32 time=9ms TTL=127
Reply from 192.168.3.1: bytes=32 time=1ms TTL=127
Reply from 192.168.3.1: bytes=32 time=1ms TTL=127
Reply from 192.168.3.1: bytes=32 time=2ms TTL=127

Ping statistics for 192.168.3.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 9ms, Average = 3ms
```

- **PC0 KE PC5**

```
PC>ping 192.168.4.1

Pinging 192.168.4.1 with 32 bytes of data:

Reply from 192.168.4.1: bytes=32 time=17ms TTL=127
Reply from 192.168.4.1: bytes=32 time=1ms TTL=127
Reply from 192.168.4.1: bytes=32 time=0ms TTL=127
Reply from 192.168.4.1: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.4.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 17ms, Average = 4ms
```

- **PC0 KE PC6**

```
PC>ping 192.168.4.129

Pinging 192.168.4.129 with 32 bytes of data:

Reply from 192.168.4.129: bytes=32 time=10ms TTL=127
Reply from 192.168.4.129: bytes=32 time=0ms TTL=127
Reply from 192.168.4.129: bytes=32 time=0ms TTL=127
Reply from 192.168.4.129: bytes=32 time=0ms TTL=127

Ping statistics for 192.168.4.129:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 10ms, Average = 2ms
```

- **PC0 KE PC7**

```
PC>ping 192.168.5.1

Pinging 192.168.5.1 with 32 bytes of data:

Reply from 192.168.5.1: bytes=32 time=0ms TTL=127
Reply from 192.168.5.1: bytes=32 time=3ms TTL=127
Reply from 192.168.5.1: bytes=32 time=1ms TTL=127
Reply from 192.168.5.1: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.5.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 3ms, Average = 1ms
```